THE EFFECTS OF PRE-KINDERGARTEN ON SPANISH-SPEAKING BILINGUAL STUDENTS TAKING THE THIRD GRADE TAKS READING TEST

John T. Ringhauser, B.S., M.Ed.

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APPROVED:

Jane B. Huffman, Major Professor
William E. Camp, Committee Member
Kathleen A.J. Mohr, Committee Member
Richard Fossey, Program Coordinator
Leslie Patterson, Chair of the Department of Teacher Education and Administration
Jerry R. Thomas, Dean of the College of Education
Sandra L. Terrell, Dean of the Robert B. Toulouse School of Graduate Studies

The purpose of this dissertation is to provide research and data examining the impact of pre-kindergarten on Spanish-speaking ESL students on the third grade TAKS Reading test scores. The two questions that guided this study are: (1) As measured by the third grade TAKS reading test, what is the relationship between those limited english proficient (LEP) Spanish-speaking children who attended a pre-kindergarten program and those who did not attend a pre-kindergarten program? and (2) As measured by the third grade TAKS Reading test, how do the test scores of those LEP Spanish-speaking third graders who attended the district’s pre-k program in 2000-2001 and testing in 2005, differ from those who attended the district’s pre-k program in 2001-2002 and testing in 2006?

The research study used a quantitative methodology designed as causal-comparative analysis. Independent t-tests were used to determine if there were any significant differences in test scores of third graders between the two groups of students. Although the results of the statistical analysis revealed some isolated statistically significant differences between those Spanish-speaking bilingual students who attended pre-kindergarten and those who did not, the data showed no real differences in the test scores of those students.
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CHAPTER 1
INTRODUCTION

If regular schooling is going to be successful with all children, the playing field should be as level as possible from the beginning. The fact that a substantial gap in readiness for learning exists in kindergarten and that it stems primarily from income and race is a stark challenge for the best-intentioned teachers and school leaders in the primary grades.

Ann C. Lewis

Background of the Study

When a group of educators get together, there is a strong chance a conversation will begin about accountability, high stakes testing, or school funding; three critical issues in schools today. District administrators are faced with the immense challenge of making educational reforms, responding to legislative demands, and increasing budgets with decreasing tax bases and shrinking federal and state funding. In fact, because of financial constraints, districts are carefully examining all programs for cost effectiveness and academic results. The academic effectiveness and financial feasibility of programs are continually questioned by parents, taxpayers, school administrators, and state and federal education departments. Those programs unable to produce desired results are eliminated or face major restructuring. The purpose of this research is to provide research and data examining the impact of pre-kindergarten on Spanish-speaking bilingual students on the third grade Texas Assessment of Knowledge and Skills (TAKS) Reading test scores.

The realm of accountability includes dropout numbers, graduation rates, student attendance, disciplinary actions, and examining the numbers enrolled in gifted programs, honors classes, and special education. Accountability is closely monitored via such achievement factors
as report card grades, failure rates, and standardized testing results. In Texas, these tests include the Texas Assessment of Knowledge and Skills Test (TAKS).

With the current level of accountability and educational reforms throughout the country, states and local districts are finding new means of improving instruction and student achievement, and increasing parental and community confidence in their schools. Testing requirements, new programs and alternative instructional strategies are being implemented.

Accountability, according to Doran (2003), requires all states to develop accountability plans that measure the effectiveness of each public school, primarily through student achievement test score data. The accountability plans must also include other indicators of achievement, but high achievement on the other indicators cannot make up for poor performance as measured by test scores (p. 55).

Developing a common curriculum, learning from student assessment data and creating a culture of problem solving are means of a more systematic approach to instruction. “Good teaching will always depend on individual classroom teachers, but responsibility for it cannot be left up to individual classroom teachers. Schools and districts need to do their share” (Jerald, 2003, p. 14). Many districts throughout the country have adopted some form of district-wide curriculum standards and stronger instructional programs. Philadelphia public school educators planned to reduce class sizes, toughen graduation requirements, and rid districts of social promotion. Washington, D.C. educators also recommended an end to social promotions for elementary students scoring extremely low on achievement tests, regardless of their grades or class work. In Tacoma, Washington, at-risk students are identified and placed on an individual educational plan that includes family involvement, tutoring and instructional interventions. Summer school is also expected for certain students. Students who are still not meeting grade level expectations are placed in a special program targeting specific areas of need on an individual basis.
The Colorado Basic Literacy Act of 1996 requires that third grade students who are not proficient in reading have an individualized literacy plan developed. These plans may include tutoring and summer school. Students may still be promoted, but their reading instruction is adapted to their individual needs (Hohn & Veitch, 1999). The Education Act of 2000 called for numerous changes in Georgia. Students in grades three, four, five and eight cannot be promoted to the next grade unless achieving grade level proficiency as defined by the Office of Education Accountability. Early intervention programs were established, and social promotions ended. California’s 1998 Assembly Bills 1626 and 1639 require promotion standards to be based on student performance on the Standardized Testing and Reporting, (STAR) test as well as other achievement indicators. Summer remediation programs are developed, with districts working to compel students to attend.

Most states have adopted or are adopting student accountability programs as a means of implementing higher academic standards, eliminating social promotions and providing a level of accountability to its stakeholders. These programs rely on “high-stakes testing” in which test results are used to determine important educational decisions and grade promotion. Historically, these tests have not been used to determine promotion or retention. By the mid-1990s, 18 states had some form of testing requirement for high school graduation, and by 2000, at least 14 states use some form of standardized testing in deciding whether to promote or retain students.

Proponents of high stakes testing see this as a means of holding schools accountable to the public, thereby boosting the confidence levels of the public in U.S. schools (Abrams & Madaus, 2003; Doran, 2003; Jerald, 2003; Johnson, 2003). Proponents claim that better testing will result in teachers teaching to a better test based on state curricular frameworks. These tests could motivate students to achieve new heights in education. Social promotion will be stopped,
as well as the problems that occur when academically struggling students are passed on to the next grade without mastering the necessary skills in reading and math. “Policymakers and the general public generally do believe that test scores provide a reliable, external, objective measure of school quality. They view tests as symbols of order, control, and attainment” (Abrams, & Madaus, 2003).

Opponents of high stakes testing argue that increased focus on test preparation comes at the expense of other coursework, and that testing often drives the curriculum and instruction (Harvey, 2003; Wheelock, 2003). Students in test-oriented classrooms tend to focus on vocabulary development and memorization rather than on critical writing. Hands-on activities are limited, as are projects and cooperative learning activities. These classes are characterized by more drill and practice. Teachers often teach to the test. “In the real life of classrooms, ‘teaching to a better test’ is not the same as ‘better teaching; or improved curriculum’. Nor does a high-stakes testing program inspire better teaching where it is needed most-- in disadvantaged schools” (Wheelock, 2003). This type of testing does not necessarily guarantee long-term improvements. Schools that make test score gains one year may see a deep decline the following year. High-stakes testing leads to teacher frustration, students seeing education incorrectly as only a means of passing a test, and parents seeing education as nothing more than preparing for the test. “There is so much pressure for high scores on the state-mandated test that teachers have little time to teach anything not on the test” (Pedulla, 2003). Opponents also see the disproportionate impact high-stakes testing on minority children and how it denies them the right to an adequate education. Disadvantaged students begin schooling without many of the supports enjoyed by more advantaged students, and the results could reveal a widening race and class gap in educational and employment opportunities.
Significantly more funds are being allocated to education at the federal, state and local levels each year. These funds are to be used at the state and local levels for purposes including professional development, recruitment and retention of teachers, reforming professional certifications, technology integration, and for alternative certification programs. The 2001 reauthorization of the Elementary and Secondary Act (ESEA), commonly known as No Child Left Behind (NCLB), required that by the 2005-2006 school year, each state must have implemented annual tests that are aligned to state curricular standards in reading and math. Students in grades 3 through 8 are assessed (U.S. Department of Education, 2004). States are also required to participate in the National Assessment of Educational Progress (NAEP) for reading and math to verify results of state tests at the fourth and eighth grades.

Jerrald (2003) reports that, “Real accountability for results demands a more systematic approach to instruction” (p. 14). NCLB also requires states to have challenging academic standards in core subjects. Student assessment must be aligned to those standards. It includes a $1 billion initiative for PreK-3 reading programs to ensure that all children can read by third grade. It requires states receiving grants under this initiative to emphasize the five components of effective reading instruction outlined in this report: phonemic awareness, phonics, fluency, vocabulary, and text comprehension.

Seriously complicating the issues of improvement in public schools is the system of public finance. States are faced with tighter budgets and reduced revenues. In Texas, the school tax burden has shifted from the state to the local districts. The U.S. Census Bureau reports that in Texas in the 2000-01 school year, 50.2% of revenues came from local property taxes (Picus & Blair, 2004). Thus, even though over 700 districts in the state are at or near the tax cap set by the state, the current tax structure is still unable to meet the needs of public education.
Crafting solutions to the school financing problems in Texas is a difficult and involved process. Big business is very reluctant to support a corporate tax. Often, corporations find ways to become exempt from a franchise tax. Legislators fear voter retribution if taxes are raised, thus are hesitant to impose any new taxes. Governors Mark White, Bill Clements, and Ann Richards supported tax bills during their first term of office and were not reelected, in part due to their support of additional taxes.

School districts throughout the state have joined in the West-Orange Cove v. Neely lawsuit to review the current school finance system and to rule on the constitutionality of the current funding system. Districts in this lawsuit argue that the state system of providing adequate revenue to fund a basic education has fallen to unacceptable levels. The State Supreme Court in November 2004 ruled that the current funding system is akin to a state property tax, unconstitutional in the State of Texas. Despite a court-ordered deadline of June 1, 2006, state legislators have still not been able to develop a new school financing system. Another special session of the legislation met in April 2006. Fort Worth Star Telegram columnist Bob Ray Sanders (2004) wrote, “A great leadership void has been apparent almost since the day the new administration came into office, but which has become painfully obvious in recent months as the state’s top elected officials bog down in the quagmire of public school funding” (p. 1B).

Local school districts are finding it increasingly more difficult to make decisions based on the true, appropriate needs of the students and the district. Rather, they are closely scrutinizing each program to review its effectiveness and financial feasibility. Early childhood interventions, including Head Start, pre-kindergarten, and Home Instruction for Parents of Preschool Youngsters (HIPPY), are among the programs under such scrutiny. These are also
programs that may face cutbacks or total elimination without adequate funding or without
significant results.

Compounding this decision are the numerous federal and state regulations regarding early
childhood education. Federal law requires that some students identified through special
education receive services beginning at age three. When school districts identify at least 15 four-
year olds meeting eligibility criteria, Texas Education Code requires the districts to offer pre-
kindergarten classes.

A child is eligible for enrollment in a pre-kindergarten class under this section if the child
is at least three years of age and is unable to speak and comprehend the English language;
educationally disadvantaged; or is homeless, as defined by 42 U.S.C. Section 11302,
regardless of the residence of the child, of either parent of the child, or of the child’s
guardian or other person having lawful control of the child. (Texas Education Code
Chapter 29–Subchapter E)

To better meet the challenges facing school districts today, structural curricular changes
as well as increased funding are both vital in the public education system. Certainly, examining
programs providing quality education at the earliest stages must be included in this equation.

Statement of the Problem and Research Questions

This study investigated the differences in reading scores on the state-wide TAKS test
among third grade students based on their Limited English Proficiency (LEP) status and whether
they attended pre-kindergarten.

Further clarification of the problem is achieved by considering the following research
questions:

1. As measured by the third grade TAKS reading test, what is the relationship between
those Limited English proficient (LEP) Spanish-speaking children who attended a
pre-kindergarten program and those who did not attend a pre-kindergarten program?

2. As measured by the third grade TAKS reading test, how do the test scores of those
LEP Spanish-speaking third graders who attended the district’s pre-k program in
2000-2001 and testing in 2005, differ from those who attended the district’s pre-k program in 2001-2002 and testing in 2006?

Significance of the Study

Children with limited English proficiency enter English-speaking kindergarten with significant academic deficiencies and are at greater risk of school failure in later years (AACTE, 2004; Ramey, 2000; Shaul, 2000). Early interventions, such as pre-kindergarten, could have a significant positive effect on at-risk children and their schooling experiences. In studying these questions, additional insight could be provided into the redesign or continuation of early childhood programs in the state of Texas. Results could enhance the program quality and provide data for school districts scrutinizing pre-kindergarten programs for effectiveness, as well as providing information on how to maximize the likelihood of academic success for students, regardless of their economic background or native language.

Definitions of Key Terms

The following key terms are used for this study:

- **Assessment**: The collection of data used to measure the performance of a student or group of students.

- **Bilingual education**: A program in which students receive the majority of their instruction in their native language with English instruction being secondary.

- **Developmentally appropriate practices**: The how, what and why of young children’s learning, particularly as it relates to the extent to which literacy instruction is necessary and appropriate (New, 2002).

- **High-stakes assessments**: Assessments that carry serious consequences for students or for educators. Outcomes of such testing may determine promotion to the next grade, graduation, merit pay for teachers, or school rankings.
• No Child Left Behind: The reauthorization of Elementary and Secondary Act (ESEA) in 2001 aimed to improve the performance of schools by increasing the standards of accountability for states, districts, and schools.

• Pre-kindergarten: A program for three- and four-year old children to prepare them for entering an academic kindergarten program.

• Reading achievement: The standard set for proficiency demonstrated by students in reading skills such as phonics, vocabulary, fluency, concepts, skills, and comprehension.

• Texas Assessment of Knowledge and Skills (TAKS): State assessment instrument measuring reading, mathematics, writing, science and social studies achievement at various grades. Third grade students must take and meet passing standards on the Reading test in order to be promoted to the fourth grade.

• Universal pre-kindergarten: Programs which offer educational services to all pre-kindergarten-aged students, regardless of family income.

Limitations of the Study

• Teacher experience and qualifications vary from one class to another and from one campus to another resulting in differences in instructional effectiveness.

• This study is limited to Spanish-speaking, bilingual, third grade students.

• This study is limited to the reading achievement portion of TAKS to determine student academic growth. Other types of achievement measures may show other results.

Delimitations of the Study

This study utilized individual TAKS data in the Irving Independent School District, a large school district in the Region X area of North Texas. The results of this study may not be applicable to other districts in the state, nor to other states and regions outside the State of Texas.

The TAKS data are from the 2004-2005 and 2005-2006 school years only. Passing standard rates for this test are subject to change. Likewise, scores on the TAKS tests improve as teachers and districts learn more about the test and become more familiar with it.
The data analyzed include TAKS results for only those LEP students who were continuously enrolled in the bilingual program in the district from pre-k through third grade and those continuously enrolled in the bilingual program in the district from kindergarten through third grade.

Organization of the Study

This study was organized into five chapters. Chapter 1 presents the Introduction to the study which included the following: (a) Statement of the Problem, (b) Purpose of the Study, (c) Significance of the Study, (d) Definitions of Key Terms, and (e) Delimitations of the Study. Chapter 2 presented the Review of Related Literature. Chapter 3 discussed the Methodology and Chapter 4 presented the Findings. A Summary, Conclusions, Implications and Recommendations for Further Study were presented in Chapter 5.

Summary

Much attention focuses on educational accountability and how to improve student achievement. Early interventions can have a significant positive effect on the experiences of at-risk children. Pre-kindergarten education is gaining increased attention and support, particularly when examining the needs of limited English proficient students who enter school with significant academic deficiencies as these students are in greater risk of school failure in later years.

This chapter provided an overview of the study, statements of the problem and research questions, research hypotheses, significance of this study, research limitations and definitions of terms. The following chapter examines the literature related to this study.
CHAPTER 2
REVIEW OF RELATED LITERATURE

This chapter investigated the literature regarding early childhood education and its effects on future reading achievement. Using data bases such as the Educational Resources Information Center (ERIC) Clearninghouses on Elementary and Early Childhood Education, various web sites and the library at the University of North Texas, information and data were obtained related to the education of pre-kindergarten students. This chapter is organized into the following sections: historical background, purposes of early childhood programs, early childhood principles, early childhood programs and projects, funding sources for early childhood programs, early childhood teachers, and program evaluation.

Historical Background

Historically, early learning has been the responsibility of the family. With the advent of World War II and the need for women to work outside of the home, federally sponsored childcare centers were established beginning with the Lanaham Act of 1943 (Edwards, 1999). After World War II, to assist poor families, day care centers continued, although generally considered less-than-adequate. As part of his War on Poverty, President Lyndon B. Johnson’s Economic Opportunity Act of 1964 passed, creating Head Start as part of the Community Action Programs. Initially, Head Start’s purpose was to better prepare low income 3- and 4-year olds for kindergarten through local summer programs. In its first summer, 561,000 children were participating (U.S. Department of Health and Human Services, 1995). As the program expanded, parent and child centers opened. Currently, there are over 905,000 Head Start children being served in 48,000 classrooms and 20,000 centers with more than 211,000 paid staff and 1,300,000...
volunteers throughout the United States (U.S. Department of Health and Human Services; Administration for Children and Families, 2005).

On January 8, 2001, President George W. Bush signed into law the reauthorization of ESEA, called No Child Left Behind, NCLB, which increases accountability for student performance by requiring each state to develop a plan ensuring that all teachers are highly qualified by the end of the 2005-06 school year. The public is to be informed of teacher quality and student performance. Instructional programs are to be based on scientific research which provides a rigorous, systematic and objective research. This national initiative involves rigorous data analysis with a reliance on measurement or observational methods to provide valid data. The ultimate goal of NCLB is to ensure that by the 2013-14 school year, every child is reading on grade level based on state-developed assessments. Critics of NCLB feel the law is complicated and provides many compliance and funding issues and requires the need for additional personnel to coordinate NCLB compliance. Further, criticism arises when there are differences in state and federal regulations relating to academic achievement. Every state is required to assess students with state content standards, yet each state develops its own standards and with its own expectations.

Purposes of Early Childhood Education and Populations Served

With a large increase in the number of children enrolled in early childhood education programs, there is also an increase in awareness of the reasons for at-risk labels and in strategies for working with at-risk children. Poverty, race, ethnicity, and home language can and do influence success in school (American Association of Colleges for Teacher Education, 2004). Other factors include biological and health mechanisms, proper health care, poor nutrition, lower
immunization rates, and greater exposure to lead and poor, often crowded home environments (Vernon-Feagans, Scheffner Hammer, Miccio, & Manlove, 2002).

Higher-income families often provide key experiences for children which are not often occurring in homes at poverty levels. Stebbins (1998) reveals that “early school failure is more likely among urban poor children without pre-kindergarten experience, and urban poor children are less likely than their suburban counterparts to have a pre-kindergarten experience” (p.17). Therefore, it is true that achievement gaps begin for many at birth. The “traditional” family structure has changed. A high divorce rate means more single-parent homes with a large numbers of working mothers. Barton (2004) reports that less than 40% of African American children live with both parents, compared to 65% of Hispanic children and 75% of White children. In 1998, a study conducted by Kids Count revealed that “two-thirds of the nation’s preschoolers and three-quarters of school-age children had mothers who were employed outside the home” (Massachusetts Cost and Quality Study, 2001, p.1). Porch’s (2002) findings concur, showing that approximately 60% of mothers with pre-school age children are working outside the home.

Geographical mobility also alters social conditions. Changing schools and homes during a school year can cause gaps in learning. Barton (2004) reports that a 1994 U.S. General Accounting Office report finds that, “41% of frequent school changers were below grade level in reading, as were 33% in math; these percentages were higher than those of students who had not changed schools. About 17% of all third graders have already attended three or more schools; the rate for minority students was double the rate for white students” (p.11).

Research has shown that early childhood experiences provide a strong foundation to future educational success and enhance child development and intellectual development (Currie
& Thomas, 2000; Neuman, 2003). The purpose of an early childhood education is to turn passive learners into active learners by providing those necessary learning opportunities. Learning and development are most rapid in the first five years of a child’s life (Smith, 1988). A study conducted by Bloom in 1994 revealed that 50% of intellectual development happens by age four (Carter, 1996). Levine’s (2005) research reveals that by age five, children gain significant abilities in linguistics and cognition as well as in emotional, social and moral capacities. “The critical dimensions of early development are intertwined; each requires focused attention” (p.197). Hart and Risley’s study reports that high socioeconomic status children have been exposed to 30,000,000 words more than those low SES families. By age six, children from professional families have a vocabulary of 20,000 words, while children from families on welfare have 3,000 words (1995). “The three-year old children from families on welfare not only had smaller vocabularies than did children of the same age in professional families, but they were also adding words more slowly” (Hart, Risley, & Beck, 2003, p.7). Baker, Serpell, and Sonnenschein’s 1995 research finds that 90% of middle income families indicated they visited the public library regularly, while only 43% of low-income families visited the library the same amount of time (Vernon-Feagans, Scheffner Hammer, Miccio, & Manlove, 2002). Starr’s (2002) research reveals that only 30% of four-year olds living in poverty could write their name correctly or count aloud to 20. Exposure to books, storybook reading, visual patterns, language and similar literacy-related activities provide a reading foundation to children, yet poor children do not regularly receive this instruction (Neuman 2003).

Health issues also add to the concerns of researchers. Zill, Collins, West and Hausken (1995) state:

Hispanic preschoolers were reported to show fewer signs of emerging literacy and more indications of difficulties with physical activity or attention, and to be in less good
general health than White or Black children. Black preschoolers showed fewer signs of emerging literacy and were more likely to be reported as in poorer health than White preschoolers. (par.6)

Without some form of early intervention, learning gaps not only continue, but become cumulative making it difficult for children to achieve parity with their peers (Neuman, Roskos, Vukelich, & Clements, 2003). However, less than 50% of three and four year olds living in poverty are actually attending preschool (Barnett & Yarosz, 2004). Those who need preschool experiences the most are generally the ones who are unable to receive such services. A 2002 report by the Maryland State Department of Education found in that state, only 49% of kindergartners were truly ready for kindergarten, and that number is even lower for children living in poverty (Porch, 2002). According to Neuman (2003), most children in the United States have at least one risk factor for school failure, with more than 10% having three or more factors, which include low socioeconomic status, low parental education and parental employment.

Service Providers

There are many types of early childhood interventions available to families through three forums, each existing as separate systems. Day care is funded through tuition paid by parents and through block grants from state or federal funds. Mitchell (2001b) and Shaul (2000) both report that federally funded pre-school programs such as Head Start and Even Start serve the most children from low-income families. Preschool education programs are in 31 states and the District of Columbia (Shaul, 2000). These programs may be administered by a variety of federal or state governmental agencies, such as state education or human services agencies, school districts, and faith-based or private agencies, and are housed in public schools, Head Start
centers, and community based child care centers. Additionally, to better meet the needs for care and education, many programs have been combined, enabling children in poor working families to receive full-day services.

In 2003, only 35% of public schools in the U.S. offered pre-kindergarten, around 20,000 schools. This percentage is higher (51%) in schools with the greatest amount of poverty. In 1999, 58% of three- and four-year olds were enrolled in center-based programs (AACTE, 2004).

**Enrollment in Early Childhood Programs**

In 1965, only about 60% of all children ages five and under were enrolled in school. Of that number, only 3% of three-year-olds and 16% of four-year-olds were enrolled in some type of early childhood program. Recent polls report that a majority of Americans feel that early childhood programs outside of the home are more appropriate for four-year olds than three-year olds. Those results are supported by the number of children currently enrolled in some type of program. Of the 21 million children under the age of six in the United States, 75% of them are enrolled in some program outside the home. However, only 45% of preschool children from low income families are enrolled. In 2002, 67% of four-year-olds and 42% of three-year-olds were involved in some type of program. In Texas in 2000, 45.1% of 3 and 4 year-olds were enrolled in an early childhood program. Texas ranked 32nd among the 50 states (AACTE, 2004; Barnett & Yarosz, 2004; Mitchell, 2001). While many young children are enrolled in an early childhood program, there are many families on waiting lists for child care or educational assistance. Porch (2002) reveals these numbers are in the thousands in most states and only about 50% of eligible four year olds are being served by Head Start.

Barnett (1997) explains that it is difficult to accurately estimate the number of children
being served. This is due to programs exaggerating their enrollment figures as they may receive funding on a per-child basis. There is also a problem of student absences and turnovers. Often, children who move from one program to another are counted as enrolled in both.

Barnett’s (2002) additional research reveals what types of children are most likely to be enrolled. More children begin their education at age four. Parents with higher incomes are better able to afford programs of high quality. Seventy-eight percent of children from families with incomes of over $100,000 are enrolled while only around 46% of children whose families earn less than $40,000 are enrolled. When the mother is employed outside the home, 87% of their children participate. African American children are more likely to be enrolled in early childhood services, while Hispanic children have an exceptionally low (38%) participation rate.

Early Childhood Principles

With the large number of students enrolled in early childhood programs and the financial resources expended for such services, the research and education communities consider fundamental early childhood principles pivotal to quality programs and as the basis for high quality planning (Bredekamp & Copple, 1997; Gordon, 2004; Gronlund, 2001). The AACTE (2004) finds that a quality early education program begins with the family, and must involve the family as a vital part of the education process. Early childhood teachers must be of high quality and must receive necessary training and certification. A seamless educational system for children from birth through grade 12 and a curriculum for these programs should be based on child development theory, self-esteem building, developmentally appropriate instructional practices, and an emphasis on multicultural education. The developmentally appropriate instructional techniques provided at the right time will have a positive influence on immediate performance.
and will contribute to the overall development of a child (Bodrova, Leong & Paynter, 1999; Bredekamp & Copple, 1997; Elkind, 2001; Katz, 1999).

The National Association for the Education of Young Children (NAEYC) believes that school readiness includes an understanding of “the diversity of children’s early life experiences as well as inequity in experiences; the wide variation in young children’s development and learning, and the degree to which school expectations of children entering kindergarten are reasonable, appropriate and supportive of individual differences” (NAEYC, 1995). In their Position Statement Summary, NAEYC further states that, "children’s educational experiences should afford them the opportunity to learn and become effective, functioning members of society” (NAEYC, 1995). In their research, Yaden et.al. report that “preschool-age English language learners from high-poverty environments are gaining in their book-handling awareness, letter and word concepts, and understanding of print directionality during an emergent literacy intervention prior to their kindergarten year” (2001, 5).

There are numerous, specific characteristics of early childhood programs that contribute to future academic success. The United States Department of Health and Human Services (2003) reports that more often than not, state-funded pre-kindergarten programs have research-based characteristics linked to positive outcomes as well as standards that meet or exceed those of Head Start. However, there is insufficient information and proof that states are monitoring adherence to these standards and procedures.

Schweinhart’s (2001) research shows that early childhood programs have two major facets: structure and process. Process includes adult-child interactions. “Such interactions occur when a child and teacher converse about the child’s experiences, read together, or work on a puzzle or project of interest to the child” (Porch, 2002, p.6). While difficult to evaluate, process
characteristics take in interpersonal skills of the caregiver including responsiveness, sensitivity, and warmth (Jones, 2001). Creating a truly positive learning environment provides a sense of belonging to the classroom community filled with collaborative learning and lessons designed around the interests of students. Process looks at the appropriateness of and opportunities for learning experiences (Massachusetts Cost and Quality Study, 2001). It involves teacher-parent interactions which help the parent gain a deeper understanding of how to help children become more successful. Schools must also make reasonable efforts to provide flexible services addressing families’ changing needs.

Structure, affecting student outcomes through its effects on process quality, includes teacher qualifications, supervision, on-going training and professional development, and teacher-student ratio as well as a strong emphasis on a child-centered curriculum and acceptable evaluation and assessment processes (Bredekamp & Copple, 1997; Elkind, 2001; Grolund, 2001). Bowman, Donovan, and Burns (2000) assert that “good teachers acknowledge and encourage children’s efforts, model and demonstrate, create challenges and support children in extending their capabilities, and provide specific directions or instruction (2000, p 8). A key component to curriculum is literacy and language development (Katz, 1999). Pre-kindergarteners need the opportunity to hold conversations with their peers and their teachers, a large variety of age-appropriate learning materials and equipment and that provides exposure to a print-rich environment. Bodrova, Leong and Paynter (1999) found “that young children show a higher percentage of word recognition when sight words come from the books that they actually encounter in the early stages of reading”(p.44).

Schools must also be sensitive to non-educational needs which include health and safety issues. Before children can learn, they must be healthy and well-fed. It may be advantageous for
schools to join with health service organizations to provide for medical and dental needs of the youngest of learners (Bredekamp & Copple, 1997; Roth, Carter, Ariet, & Resnick, 2000; Rothstein, 2004).

*Developmentally Appropriate Practices in Early Childhood Educational Settings*

Non-educational issues aside, much research has been devoted to quality instructional programs in early childhood settings, and much of that research relates to developmentally appropriate practices (DAP). It is understood that knowledge of print concepts, letters and sounds, and words and sounds are prerequisites to learning how to read. For many, these literacy skills must be learned through instruction; they do not just happen. (Bodrova, Leong, & Paynter, 1999).

Prior to 1987, early childhood programs advocated more traditional curricular format models. Instruction for early childhood students was very similar to that presented to older elementary children. Teachers became concerned because they saw that teaching certain content and skills amounted to “hurrying” the educational process which could be dangerous as it could damage students’ abilities to learn in later years (Bodrova, Leong, & Paynter, 1999). Many educators saw preschool experiences as a means of pushing down academic curriculum intended for children in elementary grades (Bevilacqua, 1997).

Additionally, as early childhood programs grew in number and in type, the need for a shared vision of what early childhood standards of practice should look like developed. Because of the trend to more formal education and schools placing rote learning and whole group instruction ahead of more active learning engagement, the National Association of Education of Young Children put out its position paper on developmentally appropriate practices (DAP) in
early childhood education in 1987. It identified the developmental needs of children as individuals and in groups (Bredekamp & Copple, 1997). This paper gives examples of both appropriate and inappropriate practices and implies there was only one correct way to work with young children.

Beginning in 1987, and following the lead of Piagetian theory which taught that education is to produce “creative, inventive discoveries to form minds which can be critical, can verify, and not accept everything that is offered,” educators began rethinking the process of teaching the youngest of children. Emphasis was on the invariable of acquiring concepts and an explanation of how children interact with the environment as a means of constructing meaning to their world (Waqar, 2000, p.6). As a result, many preschool classes became more than child-centered, they became child-dominated. Clear goals were missing and there was a lack of structure, boundaries, or limits. Children were encouraged to pursue only their own inclinations as a means of constructing knowledge independently. Helping children to function in a class setting was not a priority. Traditional paper and pencil activities were ignored in favor of hands-on play activities.

Unfortunately, this led to a great deal of polarization about educational practices as well as a larger gap between pre-kindergarten and elementary experiences for most children. Many believed that if a teacher waited until a child expressed a true interest in a skill or concept, instructional time would be lost, as would the “teachable moment” (Bodrova, Leong, & Paynter, 1999).

Kagan and Scott-Little (2004) believe that early childhood is a transitional stage for children who are learning the skills necessary for formal training beginning in the elementary grades. This training includes how to make their actions more purposeful and deliberate.
Appropriate stimulation and support at this age ensures that children do not fall behind their peers in later grades. Emphasizing the role of language development and social interactions in cognitive development, Vygotsky (1978) explained that children operate in a “zone of proximal development” describing the level where children can function with the help of adults or more capable peers. American educators were also at this time seeing the levels of success their counterparts in countries like France, Korea, and Japan, who were able to achieve more based on higher expectations of the children (Bevilacqua, 1997).

In 1997, NAEYC revisited its position to address both content and process within a curricular framework. In this new statement, the teacher takes on the roles of facilitator as well as an active participant in learning and provides a powerful context for learning and development. Teachers must recognize that instruction includes choices as well as definitions of limits, structure as well as spontaneity, and challenging experiences as well as those that reinforce previously learned skills (Bevilacqua, 1997).

Developmentally appropriate practices (DAP) are not curriculum models. DAP “was created not as a fully developed curriculum, but as a tool to help practitioners and policy makers distinguish between appropriate and inappropriate teaching practices with young children, regardless of the curriculum approach under review” (Goffin, 2000, par.9). DAP theory examines curricular issues. Curriculum is child-initiated, child-directed, and should meet the age-specific needs of both the individual child as well as the group (Waqar, 2000). Learning occurs through play, projects, and learning centers using children’s interests and ideas. Children are seen as sponges ready to soak up knowledge. DAP theory recognizes that children learn at different rates, particularly because learning is maturation driven rather than by age (Bowman, 1996). Considerable gains in learning are made when concepts and skills being introduced are
somewhat ahead of what the child can do independently. No developmental steps are skipped, and the level of instruction is not too high to frustrate the child, nor does it slow down the progress of a child.

Using developmentally appropriate practices, providing an emphasis on multicultural experiences in a supportive environment and gaining parental and community support help make academics more child-centered. Katz (1993) asserts:

If teachers want their young pupils to have robust dispositions to investigate, hypothesize, experiment, conjecture, and so forth, they might consider making their own such intellectual dispositions more visible to children. The list of potential ways that teachers of young children could exhibit the intellectual dispositions to be strengthened and supported in the early years is potentially very long and deserves serious attention in the course of curriculum planning and teacher education. (p. 19)

The other aspect of developmentally appropriate practices is that of the teacher, whose role is to provide a supportive environment and appropriate, warm interactions with each child. The Iowa DE/AEA Early Childhood Network (1998) explained that DAP was the process of professionals making decisions based on what is known about child development and learning “which allows for predictions within ranges about meaningful, relevant, and respectful activities, materials, experiences and interactions which are safe, healthy, interesting, attainable, and challenging to students”(par.1).

Along with using developmentally appropriate practices, early childhood educational settings establish and maintain appropriate learning standards which articulate expectations for young children’s learning and development (Bredekamp & Copple, 1995). Additional emphasis has been placed on learning and literacy standards because of No Child Left Behind, which requires states to have achievement and content standards in reading/language arts, math, and science for grades 3 through 12. Many states have also defined expectations for Pre-K through second grade, making a complete curriculum continuum. These standards, which include
physical and motor development, social and emotional development, and cognition and general
development and language and literacy, are used for teacher preparation, promotion guidelines,
state assessment, and improvement of an instructional program.

Standards for what children in early childhood settings should know are changing
Currently 46 states have such standards in place. However, as late as May, 2002, only 27 states
had adopted standards for young children, and many are voluntary and solely serve as a basis for
pedagogical curriculum, rather than a mandate (Kagan, Britto, & Engle, 2005; Kagan & Scott-
Little, 2004). Illinois and Louisiana use their standards for curriculum alignment. California,
Maine, Washington and New Mexico use their standards for data collection. Other states, such as
New Jersey and Arkansas, use their standards for professional development planning.
Connecticut uses standards in their demonstration programs. However, according to Banks
(2002), only a few states have chosen a particular curricular approach which must be used.
Regardless of how used, literacy and child development standards should receive primary focus.

There are numerous curriculum alignment and pedagogical challenges to maintaining
quality learning and teaching standards, including an understanding of effective models of
support as this involves a change for many early childhood educators. Rasmussen (2004)
believes that children must be able to communicate properly, respect others, make rational
decisions, retrieve information through an assortment of methods, and continue to discover
innovative skills and awareness as situations and requirements arise. States are still developing
standards promoting developmental and organizational continuity. The goal of standards is to
ensure horizontal alignment. However, early childhood standards among districts and states are
too fragmented with different programs having different curriculum, assessments, and standards
(Kagan & Scott-Little, 2004). In a recent survey of educational standards for early childhood education among all 50 states, Jackson (2004) reports:

Texas ranked roughly in the middle of all states. The state ranked last in a category that measured ‘quality standards’. Within that category, the state fell short on requiring college degrees for teaching assistants, minimum teacher-to-children ratios and limiting preschool size classes, the report said (p.1B).

Curriculum Models

Curriculum models are defined as “a conceptual framework and organizational structure for decision making about educational priorities, administrative priorities, instructional methods and evaluation criteria. They provide well-defined frameworks to guide program implementation and evaluation” (Goffin, 2000, par. 4). An appropriate curriculum results in high-quality products by presenting good processes about rich content (Katz, 1999). Achievement standards can be raised through consistent implementation of curriculum models and allowing children to make meaningful use of the academic skills they are taught during the instructional part of the curriculum. Curricular components provide for all areas of child development, including cognitive, physical, emotional and social growth, and the acquisition of meaningful and useful academic skills. (Bredekamp & Copple, 1997; Katz, 1999).

At the early childhood level, there is great discussion about what a curriculum model should look like and what it should include. Preschool children in the United States continue to find a diverse and competing interpretation of curriculum and pedagogy. Some programs are based on child-centered play; others are characterized by direct instruction and behavioral modifications. New (2002) explains that “such program diversity is directly linked to the pluralistic nature of U.S. society and associated judgments about children’s needs as a function of race, income, language and ability” (p. 247).
Curricular models also vary in the amount of freedom given to teachers as they interpret implementation of the model’s framework. Some emphasize principles and allow teachers to determine how to best implement these principles. Others provide detailed scripts for teacher behaviors in a highly structured format. Great differences exist among actual curriculum as well. Some models reflect variances in values about what is important for young children to learn as well as the process by which it is believed they learn and develop (Goffin, 2000).

Theorists have differing views of curriculum. Tyler (1949) believed that the goals of curriculum should be determined by looking at the interests and needs of the student and recommendations from subject matter experts. He looked more at the “how” of curriculum, rather than on what should be taught. Curriculum developers should select a type of “organizing element appropriate to their task and then begin to use each element to build continuity, sequence an integration into the curriculum” (Waqar, 2000, par.12).

Dewey (1956) emphasized three factors in the instructional course of action. These include the learner, subject matter, and society. He saw children as social beings with the curriculum promoting social problem-solving processes. Dewey, as an advocate for an integrated early childhood curriculum, stressed the integration of knowledge and experience with the teacher as the facilitator of learning for young children. He criticized the classical curriculum for memorization and recitation and stressed that curriculum should “not be an external annex to the child’s present life” (Waqar, 2000, par.10).

Waqar (2000) further explained that several factors are causing early childhood curricula to become more widely used. These included the effects of Goals 2000 whose first goal is that all children will enter school ready to learn. However, these goals made note of wide-spread evidence revealing the overall low-quality of center-based and family-child care, brain
development research, and increased concern about the low academic achievement of children from low-income families. State, local and federal officials promoted curricular models as a means to ensure dependable quality in early childhood programs by providing the ability to deliver consistent outcomes, and to provide accountability to the public for investments in early childhood education (Goffin, 2000). Well-known models included the High/Scope Curriculum, Montessori Method, Creative Curriculum, and Developmental Interaction Approach/Bank Street Approach (Goffin, 2000). Other approaches were based on state or local decisions or curriculums.

NAEYC’s position closely followed Dewey’s belief that curriculum be based on experiential activities with learning as the byproduct of the activity. Bredekamp and Copple (1997) listed the components of a developmentally appropriate curriculum:

- Provides for all areas of a child’s development: physical, emotional, social, linguistic, aesthetic and cognitive;

- Includes a broad range of content across disciplines that is socially relevant, intellectually engaging, and personally meaningful to children;

- Builds upon what children already know and are able to do (activating prior knowledge) to consolidate their learning and to foster their acquisition of new concepts and skills;

- Plans frequently integrate across traditional subject matter divisions to help children make meaningful connections and to provide opportunities for rich conceptual development;

- Promotes the development of knowledge and understanding, processes and skills, and the dispositions to use and apply skills, and to go on learning;

- Has intellectual integrity. Children directly participate in study of the disciplines-science experiments, writing, performing, collecting, and analyzing data;

- Supports children’s home culture and language while developing abilities to participate in the culture of the community;

- Goals are realistic and attainable for most children in the designated range for which they are designed.
Curriculum models were not without their critics. Waqar (2000) revealed that some see curriculum models as lowering expectations for early childhood educators by diminishing the responsibilities of early childhood teachers. Teachers served more as technicians who implement the educational ideas of others. There was a disparity between classroom practices and teacher beliefs. Some disputed the necessity of literacy instruction in an early childhood classroom. (New, 2002) There existed no single comprehensive theory appropriate for the entire curriculum field. (Waqar, 2000). Theorists agreed, however, that curriculum, a value-laden activity, was of fundamental importance to both students and society.

Two distinct approaches exist to curriculum development (Waqar, 2000). This curriculum debate shows differences dealing with political positions, philosophical thoughts, and values, and divides theorists between a developmentally appropriate approach and a curricular or academic theory. In the academic approach, formal academic instruction is considered appropriate or even essential for those young children whose early environment may provide sufficient experiences for informal learning of the basics such as letters of the alphabet, colors and numbers. Children are put into a passive-receptive role of internalizing the knowledge presented to them and methodically practice the skills of literacy and numeracy presented.

An academic approach is carefully structured with sequenced, small bits of information. It often involves children sitting at tables and engaging in whole-group instruction and activities. Such rigorous academics require teachers of preschool and kindergarten to maintain rigorous standards because they keep goals in mind as they continually interact with children (Gronlund, 2001; Katz, 1999; Whitehurst, 2001).

Those who favor this approach see the increasing demand and expectations for a preschool program that will ensure a child’s readiness for kindergarten. This is particularly true
with a tendency to push down curricular expectations from older groups to younger children.
Likewise, the importance of play in early school years is less urgent than 50 years ago. (Katz, 1999). Elkind (2001) also reports that an academic program helps anxious parents give their children an advantage in an increasingly competitive environment. Politicians look favorably toward such a system as it advocates accountability, standards and testing as much or more than at actually improving schools (Jacobson, 2005). The Early Childhood Longitudinal Study (Whitehurst, 2001) revealed that children with a more academically oriented preschool experience had significantly higher scores in reading, math and general knowledge when tested in the fall of their kindergarten year than children in early childhood settings with little academic content.

The academic curricular model has its critics as well. Schweinhart (1997) stated that this type of approach was teacher-directed and discouraged children’s emotional and social development and creativity. Bodrova, Leong and Paynter (1999) reported that there is a certain level of wisdom in following the academic lead of a child, but waiting for a child to express a need to learn something wasted valuable time and prevented some children from learning when they needed. A more academic, elementary school philosophy and pedagogy brought to an early childhood setting could do more harm than good to a child, particularly with literacy skills. Katz (1999) adds,

the risk of early instruction in beginning reading skills is that the amount of drill and practice required for success at an early age seems to undermine children’s disposition to be readers. It is clearly not useful for a child to learn skills, if in the process of acquiring them, the disposition to use them is lost. Those who cannot relate to the tasks required are likely to feel incompetent. Students who repeatedly experience difficulties leading to feelings of incompetence may come to consider themselves stupid and behave as if they are stupid and bring their behavior in line accordingly.
Schweinhart (1997) further reports,

preschool programs based on child-initiated learning activities contribute to short-and long-term academic and social development while preschool programs based on teacher-directed lessons obtain a short advantage in children’s academic development by sacrificing a long-term contribution to their social and emotional development. On this basis, research supports the use of a curriculum approach by preschool programs based on child-initiated learning activities rather than on teacher-directed lessons (par.14).

The NAEYC, through its explanation of developmentally appropriate practices (DAP), give emphasis to the whole child including physical, cognitive, social and emotional needs. Learning environments allow the child and the teacher to interact and contribute. At this age, learning occurs through play related themes and projects allowing children to attain skills over a period of time. Small group and individual instruction is the preferred method of instruction. This instructional method takes shape from the theories of Piaget (1967) who argued that children learn best from their own exploration of things.

Young children of preschool ages are active doers and learners. They learn casually and naturally through instruction and through play (Bodrova & Leong, 2005). Teachers, therefore, work with the variety of learning and developmental styles of the class. An experience-centered curriculum adapts to the environment and the needs of the children (Askew & Fountas, 1998; Nissani, 1993). High quality programs use age-appropriate activities such as counting, singing, and projects rather than direct instruction as with workbook activities. They encourage children to complete activities in a print-rich environment and to build knowledge at their own pace by doing and discovering (Bredekamp & Copple, 1997). Elkind (2001) reports, “the guiding principle of early childhood education is, then, the matching of curriculum and instruction to the child’s developing abilities, needs and interests” (par.7).

Bowman (1996) reminds teachers of young children to continually remember the emotional needs of children in the planning of instructional activities. Early childhood education
allows children to develop attitudes about themselves as learners, and about school, and feel more confident in their cognitive skills. A child who feels good about himself or herself as a learner, “will have a lasting appetite for the acquisition of skills and knowledge” (Elkind, 2001, par. 28).

While the child directs instruction, the teacher is still responsible for the planning of high quality lessons (Gronlund, 2001). Each child’s individuality and skill level is considered. Children, regarded as capable of learning, are able to experience activities in art, music, and motor skills as well as in language arts. Through this, children learn to work together with others and extract meaning from these experiences. Children are given opportunities to utilize a variety of materials and experience open-ended questions, modeling, demonstrating, and working with direct instruction. A developmentally appropriate curriculum allows for uninterrupted time to explore both intellectual skills and social and emotional skills. Readiness skills do not just occur when a child begins to benefit from contact with an instructional strategy, but also when such techniques are no longer appropriate to the child (Smrekar & Hansen, 1998).

DAP is not a curriculum, but it does describe the how and when children learn and develop and sets appropriate expectations for young children (Goffin, 2000). For children to be successful, they must learn skills to both decode and encode words. They must also develop an understanding of concepts of both reading and writing. “The mastery of these concepts and skills is what distinguishes children who read easily from those who develop later reading skills” (Bodrova, Leong, & Paynter, 1999, p.43).

A DAP-based curriculum has proven to be successful. Children in these programs have better language and verbal skills, and better social development. Success with reading and math skills through second grade have been documented, as have short- and long-term academic
development (Banks, 2001). It is especially appropriate for limited English speakers and children from low socio-economic families. They tend to have higher reading achievement scores in first grade than children attending non-DAP classrooms. (Bredekamp & Copple, 1997; Dunn & Kontos, 1997).

Critics and supporters of academic and DAP practices need not exclude the other ways of thinking. Both approaches are compatible and can be used together. Children explore and build their own meanings from instruction, but they also benefit from direct instruction and from distinct boundaries. They need to be able to work on their own and develop their own self-identity, but also need to interact with peers and learn respect for others (Bredekamp & Copple, 1997).

It is well documented that reading acquisition is a process that begins early in the preschool period. Children enter school having acquired vastly differing degrees of knowledge and skill pertaining to literacy (Bedrova, Leong, & Paynter, 1999; Bowman, Donovan & Burns, 2000).

**Literacy**

Literacy development is a foundation of a curriculum utilizing developmentally appropriate practices. But, literacy instruction is tailored to the intellectual needs of the early childhood student rather than diminishing standards from higher grades. Bedcover, Leong and Paynter state:

The precursor of successful reading and writing is often not even called reading and writing. A young child’s ability to draw and represent actions symbolically in dramatic play, for instance, is not writing at all, but it is an important step in early literacy development” (1999, p.42).
Attention has focused on how preschool differences in language and literacy development are reliable predictive indicators of success. Verbal skills that tie into the “word recognition” strands, especially letter identification and phonological awareness are among the best predictor measures of future success. Likewise, early differences in the sorts of verbal strands that make up the “comprehension: strands- most notably vocabulary, sentence/story recall, and concepts of print, have also been reliable predictors of later reading (Scarborough, 2002, p.100).

Goswami (2002) explains that children with a rich linguistic background before formal schooling begins will gain a larger vocabulary at a quicker rate than those children with a more limited linguistic environment. Poorer children are generally not exposed to the same quality and quantity of vocabulary development, book reading and exposure to libraries. Vocabulary size and rate of attainment are both important in a child’s development. Greater vocabulary knowledge has been shown to be related to reading comprehension in school-age.

Children with stronger abilities in phonological processing, print awareness, and oral language profit from early reading instruction, learn to read sooner, and read better than children with less of these skills (McConnell & Rabe, 1999). Many children, particularly those from low-income families are not prepared for the reading instruction they will receive in first grade.

Another factor in literacy development is oral reading fluency, defined as the ability to read a text accurately, and with proper expression. It incorporates the development of foundation skills of beginning reading such as phonemic awareness, alphabetic understanding, and phonological recoding and the need for a high criterion level of proficiency of each (Good, Simmons, & Kame’enui, 2001).

Whitehurst and Lonigan (2002) report that implementing an integrated curriculum makes
a more successful child. Coordinating the cognitive-linguistic skills in learning to read before formal schooling begins helps ensure that those with weaker verbal abilities and literacy knowledge are able to experience fewer difficulties in learning to read during the primary grades (Scarborough, 2002). For these reasons, Parke and Agness (2002) believe that an integrated curriculum featuring emersion in language, reading and writing must be implemented in order to make a successful transition from preschool to kindergarten.

**Parent and Community Involvement**

Parent and community involvement is another critical factor in a high-quality developmentally appropriate practices early childhood program. Incorporating parents in every phase of instruction, from planning to supervision, helps ensure a successful program. A primary characteristic of successful early childhood programs is “a successful track record of creating strong partnerships to implement and to evaluate large-scale programs” (Ramey, Ramey, Phillips, Lanzi, Brezausek, Katholi, Snyder, & Scott, 2000).

A good DAP-based program recognizes and works with the needs of parents by keeping them informed of class activities and their children’s progress, and also helping them to understand the nature and value of a DAP program. In doing this, potential tensions between parents and teachers over instructional methods are averted. (Dunn & Kontos, 1998)

Parent and family participation is encouraged and should be solicited. The Harvard Family Research Project (Bohan,-Baker & Little, 2004) recommends several key elements to ensure a family-friendly program. Family members are welcomed to participate in programs, activities, and as volunteers in the classroom with guidelines and training in early childhood instructional content and strategies for volunteers. Family involvement is also addressed through
written materials in the parent’s native language. Through scheduling meetings to accommodate work schedules, family needs are better met. Family members are considered to be valuable advisors and true partners in learning by providing opportunities for parents to participate in curriculum decisions and in all decisions regarding their young child’s education. “while parent involvement may not be sufficient to produce long-term benefits for children, it is certainly an important, if not necessary, contributor of program success” (Musumeci, 1997, p.4).

Many states have mandated parental involvement in their early childhood programs. Massachusetts requires an annual parental evaluation, and involvement of parents in decision making (Massachusetts Cost and Quality Study, 2001). South Carolina’s Goals for First Steps gives parents needed support to strengthen families and to support child development. California includes in its focus literacy and parenting skills (U.S. Department of Health and Human Services, 2003).

“Parent involvement is the goal, but outreach to parents and guardians is the element of program quality needed to reach this goal” (Schweinhart, 2001, par.23). Formal and informal meetings with parents help build a bridge of communication. Home conferences and parent training sessions allow parents to become true teaching partners. Many early childhood schools have established parent centers where parents come to volunteer or participate in learning readiness skills. Two unique such programs are the University of Minnesota’s Hospitals and Clinics’ Project Read and Health Partners’ Reading Rx, both providing literacy activity ideas and books to young children while parents are at the pediatrician’s office (McConnell & Rabe, 1999).

Home libraries support classroom instruction, encourage quality reading time as a family, and encourage children to read on their own. The Family Book Loan Program in Los Angeles, which began in 1998, is one such program which supplies books for parents to read to their
children at home (Yaden et al, 2000). Using a coaching approach to home reading provides parents with support and specific skills and strategies to use at home with their child. In working with the home, school personnel are also better able to understand the culture and customs of each family.

**Cultural Diversity**

Understanding cultural diversity is the third key element is successful DAP programs. Cole defines culture as language, beliefs, morals, customs and ways of life passed on from one generation to another by family, social groups, neighborhoods, and religious or ethnic groups (Carnegie Corporation of New York, 2002).

Students from diverse cultures and linguistic backgrounds are entering public schools in increasing numbers. Often, immigrant and limited English proficient children and their families enter school with misconceptions about American educational practices and expectations. They often show more errors in spoken language. Developmental targets and expectations vary among cultures. Without understanding how cultural beliefs and practices play a role in a child’s academic development, teachers fail to foster the necessary social and learning environments. Teachers and programs show responsiveness to both linguistic and cultural differences as well as individual differences, because doing so promotes healthy self-concepts and validates each child’s family (Bredekamp & Copple, 1997; Nissani, 1993; U.S. Department of Health and Human Services, 2003; Yaden, et. al, 2000).

Ideally, in order to most effectively meet the needs of young children, the home language should be spoken by the teacher. This, of course, is often not possible, but teachers can and should have a solid background of the social and cultural contexts in which children live. This
would include examining teachers’ expectations and biases and ensuring that materials and activities have distinctive value to the children. In 1989, the Head Start Multicultural Task Force reported, “multicultural programming incorporates approaches that validate and build upon the culture and strengths of the child and family” (Nissani, 1993, par.6).

Lowey’s research reveals that positive learning outcomes are most likely to occur with immigrant Latino/a children when tasks are meaningful and challenging, when children are able to participate and dialogue in their home language, and when teachers respect children’s ability and cultural backgrounds. Bowman (1996) reminds us that content may have different meanings for different cultures. For example, when teaching about Smokey the Bear, it is important to remember that bears are portrayed as wicked in the Navajo culture. Teachers cannot necessarily use the same curriculum for all students, but can use the curriculum as a conceptual framework which can be followed by culturally sensitive teachers (U.S. Department of Health and Human Services, 2003).

**Student Needs and Classroom Environment**

Non-educational needs must also be addressed in DAP-based classrooms, not only for the culturally diverse, but also for students with unique needs. Students with special learning styles or students with disabilities may find learning inhibiting without a specific plan of action. This is particularly true with students in special education. Two federal laws, Americans with Disabilities Act (ADA) and the Individuals with Disabilities Education Act (IDEA) now mandate that services and reasonable accommodations be provided for children with developmental delays or with disabilities. Full inclusion of children with disabilities is seen in more schools
each year, particularly in early childhood schools offering Preschool Program for Children with Disabilities, PPCD (Bredekamp & Copple, 1997).

Bredekamp & Copple (1997) and Nissani (1993) believe that quality programs addressing cultural, linguistic and academic needs are often lacking. Many programs are not including culturally diverse materials such as books, posters, and decorations, in their daily program. Support must also include phonemic awareness as well as meaningful literacy events. Thornburg, Cable, Scott, Mayfield, and Watson (2002) recommend using a variety of culturally diverse materials including books, toys, pictures, and music, and sharing cultural traditions. Taking class time to display and discuss art work and displays helps students develop positive views of people from differing races, abilities, and family structures.

In a DAP-based program, creating an environment conducive to exploration is another key factor (Bredekamp & Copple, 1997). The learning setting should have adequate ventilation and light, age-appropriate furniture and play equipment. Ample space, both indoor and outdoor, allows students to move around without restraint. Classrooms utilize long tables in place of desks to support cooperative work among students. Furniture, including desks, art easels, sand and water tables, and shelves, must be low enough for student to use independently (Massachusetts Cost and Quality Study, 2001; Schweinhart, 2001; Smrekar & Hansen, 1998).

Young children have special needs and require additional attention during instruction; therefore, NAEYC and Head Start have recommended that class size be no more than 16 to 20 students with a teacher-student ratio of 1:10 (U.S. Department of Health and Human Services, 2003). Many states, however, do not regulate class size for early childhood programs. Only New York and Louisiana limit class size to 16 students in four-year-old programs. Seventeen other states require a maximum of 20 students in each class. In Texas, no mandated class limit exists;
however, Head Start classes in the state usually have a teacher/student ratio of 1:7.5 (Mitchell, 2001)

The arrangement of the classroom and the learning day facilitates active and interactive instruction and investigation with teachers planning for centers areas that provide organized play and work areas as well as quiet areas for reading and seat work. These areas, along with daily routines, allow students to experience interesting and mentally challenging, and enjoyable activities, and decision making, practice previously learned skills, and learn new skills. The learning environment includes child-centered activities using a predictable schedule which provides ample learning time (Massachusetts Cost and Quality Study, 2001; Schweinhart, 2001).

Safety and health issues in each classroom involve a clean room providing a home-like, nurturing, pleasant learning environment. Structured guidance activities cultivate emotional growth and positive self-esteem. Personal care routines and activities, including mealtime procedures, toileting skills, hand-washing and school safety, are an integral part of the school day. Support services also address safety and health concerns. Transportation, meals and extended day care are among the most common services provided. Early childhood programs need to ensure children have access to health care, vision and hearing screening and immunizations, speech, and language, and cognitive screening. Often, these ancillary services are conducted in conjunction with outside agencies working with the school (Massachusetts Cost and Quality Study, 2001; National Education Goals Panel, 1998; Smith, Kleiner, Parsad, & Farris, 2003).

*Assessment*

Assessment, the final key component of a program utilizing a developmentally
appropriate practices approach, is receiving increased attention by all stakeholders in the field of early childhood. It is seen as critical in building and keeping support of taxpayers, and as a means of justifying standards and increasing expenditures. Much attention is drawn to the poor quality of some early childhood school settings.

The purposes of assessment of young children should benefit children through direct services to the child or through improved services and educational program quality. It should be used for the specific assessment purposes it was designed and should address physical well-being, language, social, emotional, and motor development, and cognition and general knowledge. Assessments must also be linguistically appropriate, taking into account each child’s first- and second- language development (Bowman, Donovan, & Burns, 2000; National Education Goals Panel, 1998). In primary grades, according to the research of Good, Simmons, and Kame’enui (2001), assessments document growth in foundational reading skills, predict success on high stakes testing, and provides an educational foundation for promoting reading success. Together with a system of intervention, assessment decreases the chance of early reading difficulties.

Assessment supports learning, identifies special needs children, and evaluates programs and monitors trends in education. It has been driven by public demand for high quality child outcomes (Smith, Kleiner, Parsad, & Farris, 1998). Early childhood education models are being advanced as a means of ensuring that public money is being wisely spent and that children are academically ready to enter school. Assessment at this level involves careful observation, anecdotal documentation, collecting and reviewing student work samples, and on-going, informal assessments with these assessments tailored to the needs of young children, and tied to a developmental curriculum. Age-appropriate and linguistically-appropriate assessments also
recognize that parents are a respected source of assessment information (Grounlund, 2001; Smith, Kleiner, Parsad, & Farris, 1998).

Rettig, McCullough, Santos and Watson (2003) report:

The power of formative assessment increases when teachers of the same content area design and administer common assessments. As teams of teachers analyze the results of common assessments, the progress of students becomes a school-wide concern- the process becomes more systematic and less variable. When teachers review data from shared assessments, they talk with one another about how their students are doing. This analytical thinking about student performance helps teachers stay focused on teaching well and meeting student needs, even in an environment of mandated accountability. (p. 73)

Early Childhood Programs and Projects

*International Programs*

Research reports that American children, particularly those living in poverty, need early childhood learning experiences to be better prepared for future education. This is true of children throughout the world. Many countries focus their attention on teaching parents and building coalitions with families and communities. Columbia’s PROMESA program provides education for parents, especially mothers, on health issues. Families help plan and implement the early childhood program and assist in the program’s evaluation. These parents are trained on how to undertake a major role in the educational process of the children in the community. Likewise, China offers parent schools which teach about child development, communication and socialization. The home is linked with the community and the school. Women in Nepal join literacy groups addressing chills care needs as well as improving the local economy. In the country of Mali, schools for parents are available. Additionally, grandparents who no longer work in the fields provide child care (Faccini & Combes, 1998; Wood, 1998).

A family allowance is available in Hungary, providing financial support for maternity
benefits, child care leave, and assistance arrangements for families with children under the age of 4. Centers for child care and kindergarten are public entities with full time care and education. Ninety percent of the children between the ages of 3 and 6 are attending kindergarten with attendance being compulsory beginning at age 5. Families pay a small fee which covers the cost of food for the children. All quality standards, legal frameworks, quality standards, funding, and training for staff are regulated by the government.

Early education interventions have increased in number and intensity throughout the world. In third world countries, organizations such as UNICEF are helping to provide the services needed. Between 1968 and 1984, enrollment in Kenyan preschool jumped from 180,000 to 500,000 children. Brazilian early childhood program enrollment jumped to over 3 million children, while in Peru, more than 500,000 children are being served.

National Interest in Early Childhood Programs

Similarly, the United States has seen an increase in early childhood program enrollment. However, the United States, according to the American Association of Colleges for Teacher Education (2004, p. 3), “lags behind many other developed countries in providing equitable learning opportunities for its younger children. This early disparity of learning opportunities has not only future academic implications for America’s children, but also serious social and economic repercussions for our society.” Kagan and Stewart (2005) feel certain that one way the United States can catch up with other countries is through comparative education studies and “strategies for accelerating the improvement of our own education systems by examining those of other nations” (p. 187).

Pre-kindergarten interventions were minimal through the early 1960s. As part of his War
on Poverty, President Lyndon B. Johnson saw passage of the Economic Opportunity Act of 1964 and the creation of Head Start as part of the Community Action Programs. Initially, Head Start’s goal was to ensure that children of low income families were better prepared to enter school and to offer parents access to early childhood services. Originally begun as a summer program, 561,000 children participated in its first summer with parent and child centers opening in 1967. The program expanded to include school readiness programs, as well as medical, dental, mental health, nutritional and social services. It was the most effective and comprehensive intervention in the lives of children and was accomplished through family and community involvement. Each community was encouraged to develop a Head Start program based on the needs of the community.

In its 40 years of existence, Head Start has served over 21 million children and their families. Head Start has expanded its services from summer programs to school year programs as well. Funding for Head Start has tripled over the last decade, with fiscal year 2002 funding levels at $6.5 billion. Most Head Start programs, however, are part-day programs and are not able to meet the needs of working families who need full-day, full year programs. Currently, nearly 850,000 students are served by Head Start, taught by over 50,000 teachers by public and private nonprofit agencies (Mitchell, 2001b).

Head Start provides a program which enables many of the participants to master readiness skills such as vocabulary development, number, color, and letter recognition and pre-reading skills. Social skills are also taught in order that children learn to follow directions and social rules, and how to get along with each other (Zigler & Styfco, 2001). Parents are also considered an integral part of the Head Start program and they are encouraged to participate in preschool activities and in adult education and training. In fact, many parents find themselves
working in the Head Start program as a result of training received (Barnett, 1997).

Another concern related to Head Start is its teaching staff which could be considered under-qualified. Improvements in teaching quality are underway and ongoing. Approximately 30% of its teachers in the 2001-02 school year had at least a bachelor’s degree, although these qualifications vary greatly among the states. Current requirements are for at least 50% of teachers to have an Associate in Arts (A.A.) degree. Teacher salaries and compensation are also of concern. While public school kindergarten teachers earn an average of $43,152, Head Start teachers earn an average of $21,287. To make the salary of Head Start teachers comparable to kindergarten teachers, it would cost nearly $1 billion a year, with fringe benefits adding about 25% (National Institute for Early Education Research, 2005). With the current salary and benefit schedule, it is understandable that the turnover rate of teachers is high. Teachers get experience in the classroom and are able to move to better paying jobs as teachers or aides in public school settings.

Two other national initiatives complement the Head Start program. Even Start is a family literacy program providing parenting education and skills as well as providing early literacy skills to children. While these are state-administrated programs, local districts and other public and private agencies may apply for grants (Barnett, 2002). Early Reading First, authorized by the No Child Left Behind Act of 2001 and administered through the U.S. Department of Education using Title 1 funds, is designed to promote reading readiness in preschool aged children before entering school. By providing research-based high quality, coherent skills based on instruction and on-going professional development, young children will be better prepared to enter kindergarten with necessary language, cognitive and early reading skills.
State Programs

In addition to federal interventions, most states are investing heavily in some sort of preschool education program although there is great variation in programs across the nation. Regulating early childhood programs includes funding, regulations, standards, accountability, curriculum, teacher certification and professional development and varies greatly among state agencies. While each state’s program is different, there are commonalities that enhance the quality of early care and education. Comprehensive early childhood services focusing on quality preschool education linking children to needed services, promotes school readiness and higher levels of cognitive and language development.

Several states provide services for teens. Illinois’ Teen Responsibility, Education Achievement, Caring, and Hope (REACH) provides services to at-risk teens, including tutoring, promoting outlets to try new skills, and academic enrichment. Adult mentors are also integral to this program. Ohio’s program includes home visits to young mothers to encourage them to stay in or return to school as well as to provide training in parenting skills (Stebbins, 1998).

Working with families is part of many states’ programs. California’s First Steps program provided needed support for parents to strengthen families and support their children’s development (U.S. Department of Health and Human Services, 2003). Washington’s Families that Work is a literacy model which builds literacy skills of families through basic education courses, parent education and support and the creation of a bridge between parent education curriculum and real life situations (Stebbins, 1998). A major component of Missouri’s program is Parents as Teachers (PAT). Home visits, parent education, and screenings for children are included. Parents in the program see schools as trusted partners in providing quality education for their children (Council of Chief State School Officers, 2002). The program results indicate
that children of PAT families show higher verbal and language abilities, higher academic achievement, and greater social development.

In many early childhood settings, parents serve as volunteers in the classroom or serve on policy making boards. Massachusetts and Minnesota are two states who take collaboration a step further by mandating collaboration with parents and community members. Still other states require collaboration among agencies in the areas of funding, instructional delivery, and accountability and program evaluations. (McGhee, Benner, Dill, 1999; Stebbins, 1998). Mitchell (2001a) reports that “the federal government should promote system integration and be itself a model for the collaboration across sectors that is needed to create a unified system of preschool education in every state”.

Each state develops and maintains standards for schools and teachers. Delaware uses multiple agencies to oversee their schools. Kentucky, Nebraska and Florida are three states which have developed their own standards. Nebraska sets a self-certification process for schools every two years with requirements to improve licensing standards. Other states, such as Connecticut and Vermont, encourage schools and centers to meet certification standards as prescribed by the National Association for the Education of Young Children (NAEYC). (Council of Chief State School Officers, 2002; Roth, Carter, Ariet, Resnick, & Crans, 2000; Stebbins, 1998; U.S. Department of Health and Human Services, 2003).

Professional development and training standards vary among states. Tennessee Early Childhood Training Alliance (TECTA) provides systematic early childhood training for teachers and administrators. Thirty hours of basic training is required for someone who is entering the early childhood field. Montana requires teachers to get training for certification, to address community needs, and to address special interest areas. North Carolina’s Teacher Education and
Certification Help (TEACH) program provides scholarships to teachers in their pursuit of certification. West Virginia provides an apprentice program, while Delaware has established a career ladder system to meet the varying needs of the teaching staff. ECELS, Pennsylvania’s Early Childhood Education Linkage System, provides health and safety training for child care providers. A free audio visual library of health materials is available for consultants and child care providers (Stebbins, 1998).

Head Start is a half-day program. Many states see the value of providing full-day programs for its preschoolers, and therefore look to coordinate efforts among agencies to improve access to care. In 1998, Connecticut used state funds and CCDF funds to create an additional 4,000 pre-kindergarten slots. Oregon is one of many states that partner with Head Start for enhanced, full-day services. Hawaii’s Good Beginnings program pairs private and public partnerships to provide regional planning. Similarly, Nevada’s Family-to-Family Connection establishes regional services for children to one year of age. Missouri’s Caring Communities works to ensure healthy, safe children who are prepared and successful in school through community and state agencies. Creating a single voice for children is a priority in Minnesota where there is a coordinated access to data and integrated funding (Council of Chief State School Officers, 2002; Mitchell, 2001a; Roth, Carter, Ariet, Resnick, & Crans, 2000; Stebbins, 1998; U.S. Department of Health and Human Services, 2003).

New Jersey is in a unique situation as it is the only state where pre-kindergarten services are mandated by the courts. In 1990, the New Jersey Supreme Court required the state to offer pre-kindergarten services in 30 urban district districts as a means of improving the skills of the state’s most disadvantaged students. The Abbot v. Burke decision calls for at least a half day, well-planned, high quality program. The curriculum must be developmentally appropriate and
aligned to the state’s curriculum. Facilities, health and social services, teacher quality, and class environment were also addressed in this decision. More than 40,000 children are currently enrolled in “Abbot” districts (Council of Chief State School Officers, 2002).

Texas Preschool Efforts

Governor Mark White, seeing the need to improve instructional delivery in schools, signed into law in 1985 the establishment of half-day pre-kindergarten services in Texas. Students who are unable to speak and comprehend the English language, who are economically disadvantaged (free or reduced lunch status) or who are homeless qualify for pre-kindergarten services. When a district has at least 15 such four-year olds, it must offer pre-kindergarten. When the same number of three year-olds meet the same qualifications, districts may offer pre-kindergarten services. Teachers must be certified and hold early childhood or kindergarten endorsements and may also hold an bilingual endorsement. Pre-kindergarten is now offered in 925 districts. Enrollment in the 2002-03 school year was 143,074 students. Another 13,662 three-year olds were enrolled in the same school year. In the 2001-02 school year, schools spent $2,133 per pre-school child. This ranks Texas a dismal 29th among all states.

Challenges in providing these services include more than funding issues. There are no formal assessments of program services or student readiness and a lack of facilities and adequate transportation exist. Curriculum guidelines are voluntary and vary among the districts, and there is an insufficient number of teachers, particularly for bilingual classrooms. Because of budget cuts, there is an insufficient number of staff at the Texas Education Agency, resulting in a lack of monitoring and oversight (Council of Chief State School Officers, 2002; Jackson, 2004).

The Texas Education Agency conducted a longitudinal study in the early 1990’s to
evaluate the results of its pre-kindergarten programs with nearly 2,000 pre-kindergarten students. Results showed that students who attended pre-kindergarten in the state had lower rates of retention and special education referrals and were better able to meet the grade-level expectations and were able to read at or above grade level in future grades (TEA, 1995).

Irving Independent School District

Along with other districts in the state, the Irving Independent School district began its pre-kindergarten program in the fall of 1985 by adding pre-kindergarten classes to its elementary schools. As the program grew and matured, the district looked at ways to provide a more effective pre-kindergarten program. In 1998, the district commissioned Michael Bell to do a comprehensive review of its early childhood programs. His overall comments were positive. “The Irving Independent School District provides young learners with a good foundation for later school success” (p.11). Bell’s (1998) report did include numerous observations and recommendations for improvement:

- A disparity exists among pre-kindergarten equipment. The district should take note of its classroom equipment and replace worn equipment.

- Learning materials differ in both quality and quantity. Additional math, science and literacy equipment should be purchased.

- Technological needs of students are not able to be met due to inadequate hardware and pre-k specific software. Each classroom should have at least three desktop computers and the appropriate software for student use.

- Facilities for social and physical development are lacking for specific pre-k needs. Additional teacher-directed activities are needed, as are adequate indoor and outdoor areas and learning environments.

- A need exists for uniform curriculum and assessment. Most evaluation is done through teacher observation, an issue because of “teaching styles, professional experiences, and individual understandings of early childhood education” (p. 17). A district-wide standard assessment and evaluation program for early childhood programs is needed.
• Paraprofessionals were assigned to some classrooms, but not all rooms. Additional teacher aides are needed to decrease student-teacher rations, to provide a stronger instructional program, and to provide a safer environment.

• The curriculum should include additional programs and instruction addressing art, music, drama, and physical movement. Mathematics, and science curriculum need to be strengthened.

• Staff development for pre-kindergarten teachers and paraprofessionals should include questioning strategies, learning styles, technology integration, and use of learning materials specific to pre-kindergarten student needs.

Using this information, Irving Independent School District planned for three early childhood centers to open in August 1999. The three campuses were designed using the same specifications and architectural design. Much care was taken in ensuring that the schools were very student friendly. The playground equipment emphasizes gross motor skills, as does the motor skills room with occupational therapy equipment used by all students. Each classroom includes an oven, a range top, and a refrigerator for experiential learning. One-fourth of the classroom flooring is tiled rather than carpeted for wet-area experiences. The facilities were built for students at their level. For instance, sinks, restroom facilities, door knobs, cafeteria tables, and desks are small and low to the ground. Windows throughout the building are at a four-year old’s eye level, as are marker boards and bulletin boards. The library and counseling suite are small with shelves low to the ground for easy access by all students. The main office has low counters and is open to the main corridor, making it feel warm and welcoming to students and parents alike. Although each of the early childhood campuses is home to over 600 students, care was taken to make sure the school did not feel as large as a typical elementary school.

Unlike many day cares or private schools, the three early childhood centers in Irving hire only persons who are certified and must meet Highly Qualified statue as established through No Child Left Behind. This includes both teachers and paraprofessionals. Staff training is on-going
and is developed specifically for pre-kindergarten teachers and curriculum. Staff development sessions include discussing literacy, making center time more meaningful than just play, and extending centers to include more academic content, discipline, and developmentally appropriate research-based practices for instructing four-year-olds.

The curriculum used by the district and its early childhood staff follow guidelines established by the Texas Education Agency (TEA) and it correlates with the Texas Essentials of Knowledge and Skills (TEKS). Curriculum includes language arts, mathematics, science, social studies and fine arts and social skills, all which help students make the transition into an elementary curriculum. Concrete manipulatives such as real vegetables rather than plastic are used. Because many of the parents do not have the means to take their children on learning experiences outside the home, many field trips are taken to the public library, the zoo, and the farm are taken each year so that students not only see what is being taught, but also get to experience what is taught.

Special services are also provided at each center. Program for Preschool Children with Disabilities (PPCD) classes are available for those who qualify through special education as very delayed academically or for those with minimal communication skills. This program begins at age three. Head Start is a full-day program with two classes at each campus. In addition to academics, it provides medical, dental and counseling services to qualifying families. Home visits and conferences are part of the intensive parental program. Parents are expected to contribute a specific number of community hours, preferably in the child’s school. Classes on child-rearing, discipline, health and reading are also required.

Parental involvement is also an integral part of the pre-kindergarten program. Between 15% and 20% of parents are active volunteers in the schools. Parent training classes are on-going.
with topics recommended by the parents. These include discipline and at-home instruction on counting, reading, letters and sounds.

Program evaluation at the district level is also on-going. In 2001, another program evaluation was conducted. Curriculum, assessments, staff development opportunities, parental participation, and technology were evaluated. In her report, Bush (2001) noted strengths of the early childhood programs in Irving to be in the use of technology, parental involvement, staff training, and in its curriculum which “emphasizes the development of pre-kindergarten students’ emergent literacy skills through curriculum that is appropriate for economically disadvantaged students of diverse backgrounds” (2001, p. 15). Assessment was still seen as lacking, and recommendations were made to add a test of oral proficiency to the curriculum. Bush also recommended a longitudinal study to evaluate the success of the pre-kindergarten program through examination of comparison groups who attended the program with those who were eligible to but did not attend pre-kindergarten. This study has not been conducted.

An assessment component was added in the 2003-2004 school year. In addition to teacher observation, each student is tested at the beginning and the end of the school year using the Learning Accomplishment Profile-revised (LAP-R) which tests for readiness skills on a scale from 36 to 72 months of age. Plans of action are written for those scoring above and below the expected norms.

In the 2006-2007 school year, each of the three early childhood campuses was allocated an additional position, that of an assistant principal/instructional specialist. Student registration procedures were also streamlined to make the process more user-friendly. In addition to registration paperwork, parents were also able to verify income, and have their children tested for language proficiency and receive all necessary immunizations.
Like the pre-kindergarten programs, the bilingual program in Irving Independent School District continues to grow in size and in program effectiveness. Currently, approximately 13,000 students are classified as Limited English proficient (LEP), about 65% of which is in bilingual classes in pre-kindergarten through grade 5. Beginning with sixth grade, services for English language learners are provided through English for Second Language (ESL) classes rather than through bilingual classes. While the district continues to grow in size, the population of Spanish-speaking LEP students grows at a much faster rate. Irving ISD has the largest percent of LEP students, 36%, among all school districts in Dallas County (Hernandez & Jacobson, 2008). Since the opening of the early childhood schools, Irving ISD has implemented a “Time and Teaching Model” of teaching bilingual students. This addressed both vertical and horizontal planning issues to ensure a more consistent teaching plan from one grade to another as well as across all campuses.

The term “bilingual education” means many things to many people. Those opposed to any form of bilingual education feel it hinders the cognitive growth of these children, that immigrants will not see the need to learn English, the cost involved, and that it challenges the country’s national pride. They often see it as unnecessary because children acquire a second language quickly, even without formal training in that language (Crawford, 1998). Others are opposed to bilingual education because it unnecessarily segregates students from their peers (Cummins, 1998). California, Massachusetts, and Arizona have all recently faced referendums requiring all-English instruction as a result of this type of thinking.

The National Association for Bilingual Education (NABE), one of the strong proponents of bilingualism, cites the goals of bilingual education as a means of improving instruction. These goals include “acculturating immigrants to a new society, fostering academic
Cummins adds, “Strong promotion of students’ primary language literacy skills not only develops a conceptual foundation for academic growth but also communicates clearly to students the value of the cultural and linguistic resources they bring to school” (1998, 2).

For Spanish-speaking students, the research has shown a strong, positive correlation between learning to read in a native language and future reading achievement in English (Collier & Thomas, 1992; Ramirez, Yuen, & Ramey, 1992). Several models of bilingual education exist in the United States (Roberts, 1995). The most common form is a transitional or early-exit bilingual education. This program teaches students in their native language and provides English as a second language, usually over a three-year period. This program has its opponents. Cummins feels that transitional programs “aspire to monolinguals rather than bilingualism. Such programs also generally do little to address the causes of bilingual students’ underachievement which are rooted in the subordination of the community in the wider society” (1998, p.5).

A second bilingual model is developmental or late-exit bilingual education. Oral fluency and strong literacy abilities in both English and the speaker’s native language are primary goals. These programs expect student enrolment between three and five years. Cummins (1998) sees the significance of a developmental program as it generally requires most of the elementary school years to bridge the gap between themselves and native speakers of English” (p.4).

The final model, the two-way bilingual education, dual-language, dual immersion program, allows native English speakers to learn in the same classroom as English Language Learners. Instruction is in both languages, so all students have the opportunity to learn both. Students learn, but also teach vocabulary and language to their peers. There is less segregation
among students and it promotes a true sense of bilingualism. Enrollment in a dual-language program may be for up to five years.

Research supports late transitional and dual language programs citing programs of five to six years in length to see sustained achievement gains. Thomas and Collier (2002) assert that greater English achievement is attained with a greater number of years of instruction in a child’s primary language. In fact, “bilingually schooled students outperform comparable monolinguals schooled students in academic achievement in all subjects after 4-7 years of dual language schooling” (Thomas & Collier, 2002, p. 334).

Beginning with the 2005-2006 school year, the Irving Independent School District implemented a transitional model time and teaching plan. The program calls for bilingual instruction for a certain percent of the day. Pre-kindergarteners receive instruction in Spanish for 90% of the day and English 10% of the day. The percent of Spanish instruction is decreased and English instruction increased so that by fifth grade, only 10% of instruction is in Spanish. These times do not include fine arts or physical education time which is normally taught in English.

Early Childhood Projects

Although most early childhood programs are funded through federal or state money, other privately managed projects exist and are considered high quality as a result of long-term studies with positive results. The Title 1 Chicago Child-Parent Center Program began in 1965, funded through the Elementary and Secondary Education Act of 1965 and run through the Chicago Public Schools. After Head Start, it is the nation’s oldest early-childhood federally funded program. Facilitating parental involvement in their children’s education, and promoting academic success are the goals of this program. Studies found that by age 20, children who
attended the program had a 50% higher graduation rate, compared with those who did not attend. Students were less likely to be placed in special education, retained and arrested. At a cost of approximately $7,000 per child per year, the benefit to society was $48,000 (Gordon, 2004; National Institute for Early Education Research, 2005, Wetzstein, 2001).

The principles of the Perry Preschool Project include active learning, creating a supportive climate, and working with families as a team. Encouraging and supporting children’s initiatives and active learning experiences through music, language and literacy, movement, and creative representation and are expected is built into all facets of the program. A longitudinal study examined participants at age 19 which showed they maintained significant gains from the project. At age 27, 71% of participants graduated from high school or received the General Equivalency Diploma certificate, compared to 54% of non-participants. Twenty-nine percent of these participants earn $2,000 or more per month compared with only 7% of non-participants. Nearly three times as many owned their own homes (36% vs. 13%), only one-third as many were arrested for drug dealing (7% vs. 25%), and 41% reported never being on welfare, compared to only 20% of non-participants. It is estimated that for every dollar invested in the Perry project, the program returned $7.00 to society because of fewer grades in school and lifetime earnings for the child (Gordon, 2004; NIEER, 2005).

The Abecedarian Project of North Carolina is a more rural project with a majority of participants being poor African American children. The program provides an individualized education plan consisting of games and activities addressing cognitive, social and emotional development. Its main focus is language development. The program differs from others in that it begins with infancy rather than at age two or older. Children in the program have five years of exposure to high quality instruction in a child care setting. Its longitudinal study reveals that
those who attend preschool are less likely to drop out of school or repeat grades. The cost of the program is expensive, $33,000 per child, yet the benefit to society is calculated at $123,000 per child. Employment rates were higher for the participants (65% vs. 50%), and enrollment in higher education programs were higher (40% vs. 20%). Compared to non-participants, adults in the program were generally two years older when the first child was born. (Bailey, 2000; Gordon, 2004; Starr, 2002; Vernon-Feagans, Scheffner Hammer, Miccio, & Manlove, 2003). In a study conducted on the level of success of the Abecedarian Project, Campbell and Ramey found that, “for impoverished children, the earlier in the life span education occurs, the greater its benefit is likely to be” (2001, p. 694).

Universal Prekindergarten Services

Whereas most pre-kindergarten programs are for specific groups of children, there is a movement in certain parts of the country for a more inclusive and more comprehensive program. Former Georgia Governor Zell Miller has called preschool “the most important grade” (Barnett & Hustedt, 2003). Although early childhood services are offered to many students who are labeled as disadvantaged, there are many students who either do not meet the standards for qualification, or the services are not available for all children. Increasing numbers of children are qualifying for services for disadvantaged students, and more households are finding the need for both parents to work outside the home meaning more families are in need day care or educational opportunities for their preschool aged children.

States and districts seek out creative approaches to meet these needs by developing options for children of middle- and upper-income families to receive free pre-school education. One such alternative is through the offering of universal pre-kindergarten services for all
students. While much more expensive, the added benefits from serving more children could be far-reaching. Barnett and Yaroz (2004) report, “In addition to reaching previously disadvantaged children, newly served children from families that are not currently eligible also would benefit in ways that can contribute to the public good, such as increased school readiness and achievement” (p.13).

Many questions need to be answered before such a program can be implemented successfully. States need to define “universal” as it pertains to early childhood. One definition can be that it is required for all students of the state, while another definition is that all students have the opportunity to attend, but the program is not mandatory. States should realize that a universal pre-kindergarten program can meet the needs of working parents, so the program should be full-day or it must coordinate with other agencies. Academic and logistical challenges also exist. With the increase of students enrolling in a universal program, facilities may be difficult to secure. Also, there is a need for greater accountability which will result in higher standards. A coordination of private and public programs should take place before beginning such an undertaking.

Providing high quality educational services for all students involves the use of public and private funds mixed with local, state and federal money. One source of funding could be through Head Start. However, it would be difficult to integrate because of federal regulations. Barnett and Hustedt (2003) suggested several possible solutions. Head Start could be offered for children up to the age of 3, rather than age 4. Head Start and state universal pre-k programs could be merged which would reduce costs to states and maximize resources for both. This would improve Head Start standards as they merge with state standards. Similar to vouchers, Head Start money could follow the child to any universal pre-k program. Another option would be to allow
Head Start to provide supplementary services to eligible students.

Mitchell (2001a) recommended steps toward organizing and implementing universal pre-k services.

- Establish one set of regulatory standards for all early childhood programs. This includes length of day, class size, and staff qualifications;
- Raise staff qualifications to be equivalent to kindergarten certification;
- Establish program standards such as national accreditation or Head Start performance standards;
- Demonstrate better ways to increase and combine local, state, public and private sources to finance all types of programs to meet higher standards;
- Set per-child funding at sufficient levels to ensure quality education and school readiness;
- Ensure that the necessary infrastructure, including personnel preparation and professional development, is funded. (p. 22)

Georgia became the first state to offer universal pre-kindergarten to all four year olds regardless of income or any other criteria (Raden, 1999). It remains the only state committing sufficient funds to reach universal access and could be used as a model for other states. The program, begun in 1993, and funded through a state lottery, was cited by former Secretary of Education Richard Riley as one of the most progressive programs in the country. Its creator, former Governor Zell Miller, said, “We do not regard pre-kindergarten as a baby-sitting service. Nor is it a watered down version of kindergarten. Georgia’s pre-k programs use quality educational curricula that were specifically developed for four-year-olds” (Porch, 2002). Georgia’s program operates in schools and child care centers on a school day and school year system. One of the requirements is for teachers to hold two parent conferences each year and to send information home to parents on a regular basis. Coordinating comprehensive services for families who need them is funded appropriately, and classes get $8,000 per year for materials.
Teacher qualifications are examined carefully, with over 80% of the pre-k teachers having four-year degrees. Before- and after-school child care, child care subsidies, and school meal services are coordinated with appropriate agencies. Universal pre-k services have an on-going evaluation system in place which examines student performance on cognitive, behavioral, and social skills, promotion, parental expectations, referrals to special education, and attendance (Porch, 2002).

New York State enacted its universal pre-kindergarten program, Winning Beginnings, in 1997 for children of low-income families. One of the components is that programs must collaborate with community-based organizations. These services can be offered in public schools, Head Start centers, and through child care programs. However, Stebbins (1998) maintains that good programs:

- must be educationally based; promote literacy; meet the social cognitive, linguistic, emotional, cultural, and physical needs of children; integrate preschool children with disabilities; and provide continuity with elementary grades. Programs must provide support services, establish learning centers, ensure parental involvement, provide meals and snacks, and establish an assessment process to determine pupil progress and program effectiveness. (p. 51)

An additional requirement is that the needs of the working families must be taken into consideration in the planning of local programs.

Although this is only a half-day program, the program has continued to grow from 18,000 students in 1998 to more than 55,000 students in 2000-2001. Yet, this is only about one-fourth of the students eligible for the program. While the program is still fairly new, some studies have been conducted on program effectiveness. In one study, eighty-three percent of the Rochester universal pre-k students scored above average in both academic skills and social skills (Center for Early Care & Education, 2001).

At this time, Florida and Oklahoma are also implementing universal pre-kindergarten programs. There are those who would agree with Smith’s assertion that education leaders must
“have the courage and determination to provide all children, especially those at risk, with better education opportunities at the time in their lived when it matters most” (2004, p39).

Early Childhood Teachers

Regardless of the type of program offered, quality teachers are the key to quality programs (AACTE, 2004; Jacobson, 2003; Jones, 2001). They enable children to develop positive relationships with teachers as well as with classmates. Four professional preparation factors identified by the Cost, Quality and Outcomes Study in 1999 can influence program quality. Teachers should have a credential system similar to K-12 teachers. Professional development and technical assistance must be expanded and ongoing. Due to low salaries, there is a high turnover rate among early childhood educators. Improvements in compensation issues need to be long-term as a means of retaining qualified, quality staff. With this information, federal and state agencies should be able to set standards which are beneficial to teacher abilities and which promote quality instruction and learning. In an article published in Education Week, Whitebrook writes that, “the evidence to date suggests that the most effective teaching in center-based settings and the skill and knowledge that defines it, are best achieved through a four-year college degree, which includes specialized content in early-childhood education or child development” (Jacobson, 2003, p.17). Teachers with greater education levels produce greater levels of age-appropriate stimulation. In fact, a teacher’s level of education is more significant to achievement than most other factors including class size (Massachusetts Cost and Quality Study, 2001). The American Association of Colleges for Teacher Education (AACTE) (2004) reports that while teacher preparation is correlated with teacher quality, teacher preparation is lacking. Some teachers have bachelor’s or master’s degrees, yet some only have a General Equivalency
Diploma (GED). Further, 87% of public school preschool teachers have at least a bachelor’s degree, but only 39% of teachers in for-profit centers are degreed. This number is even smaller, 30%, for Head Start teachers.

College training for early childhood teachers can be described as erratic at best. Early childhood programs are housed in such departments as home economics, child development, and family studies. Often, only an associate’s degree or certificate of completion is awarded. These programs often have an inadequate faculty to meet the needs of the students, particularly in the current era of student accountability. On average, the faculty to student ratio is 61 to 1, with much of the faculty being part-time. The college faculties tend to be predominately white, thereby offering diversity challenges (Early & Winton, 2001). Without the necessary training, early childhood teachers may not fully understand the developmental continuum associated with early childhood education. Without adequate training for teachers and staff, the need for children to develop social skills, self-awareness, and interests and abilities are therefore not considered a prerequisite for academic learning.

Starr (2002) reveals that less than half of the states have requirements for teachers and child care providers. She also cites low salaries for early childhood teachers.

Day care employees earn about $16,000 a year, often less than a parking lot attendant. The result: a 30-plus % annual turnover rate, vs. 13% or so for K-12 teachers, who are paid more than twice as much. A universal preschool system would make more money available for instructor pay. (p. 98)

Each state sets its own set of minimum standards for teachers and these qualifications vary widely from state to state and can have a profound influence on reading development. In more than half of the states, teachers do not need to have any training in early childhood studies. Many require only minimal training. Only Rhode Island, New Jersey, and New York City require teachers to have a bachelor’s degree. (Mitchell, 2001a; Toppo, 2004). Florida requires
teachers to be certified in early childhood education or to hold a two-year Child Development Associate credential (Roth, Carter, Ariet, Resnick, & Crans, 2000).

Jacobson (2003) asserts: “The best action policymakers can take is to foster high-quality pre-kindergarten programs and to make sure classrooms are led by teachers with four-year degrees, preferably with a concentration in teaching young children” (p.17). Work is in progress by lawmakers and policymakers to develop a common set of standards for teacher qualifications. Federal legislation is calling for Head Start centers to have a staff of which at least 50% holding bachelor’s degrees by the year 2010, and that all Head Start teachers have at least an associate’s degree in an early childhood-related field by 2007 (AACTE, 2004). The National Research Council has recommended that each teacher hold at least a bachelor’s degree with specialized training in early childhood (Bowman, Donovan, & Burns, 2000). Education programs should provide foundational knowledge of child development, including social and affective behaviors, language and thinking and mastery of early childhood pedagogical information which includes providing rich conceptual experiences, assessment procedures, subject matter content, and working with families. Student teaching is a critical component of pre-service preparation, as is on-going professional development.

Many early childhood teachers are in the process of meeting certification standards set forth by the National Board for Professional Standards. While this does not replace state certificates, it does set rigorous standards for teacher practices. However, the cost involved in this certification is often prohibitive, especially for teachers in private settings where salaries are especially low. Since 1994, the National Association of Education for Young Children (NAEYC) recommends a teacher preparation program which includes the acquisition of knowledge and skills necessary to practice specialized preparation in early childhood education through college
level programs. Specialists must be available to assist and consult and to provide quality on-going professional development, and administrators must also hold appropriate professional qualifications and must provide opportunities to work collaboratively with staff. NAEYC is also recommending an incremental improvement in teacher qualifications with all teachers having a minimum of an associate degree by 2010 (McGhee, Benner, & Dill, 1999).

The American Association of Colleges for Teacher Education (2004) recommends that as a means of improving inconsistent early childhood teacher certification and a lack of standards for such preparation in many states, all teachers should be credentialed and prepared and that establishing “greater portability of teaching credentials across institutions and states” would be advisable (p.10). Such training includes teacher skills which are specific for early childhood programs, incorporating knowledge of child development and an understanding of what is developmentally appropriate. Literacy and numeracy foundations must be understood as well as ways to foster students’ development in these areas. Teachers need training in proper and varied methods of assessing learning. An important component of early childhood training includes developing an understanding of children and their families, particularly in a multicultural society. Walker, discussing African American teachers, believes that teachers must focus on caring about the entire child, rather than in interpersonal ways. They must be able to provide honest feedback to students about their work. High expectations of students is not only a means of student success, it is a requirement (Irvine, 2004). Although Walker was referring to African American teachers, her beliefs could be true for all teachers.

Understanding the proper teaching and learning environment in which preschoolers learn is important for teachers. Bodrova, Leong, and Paynter (1999) claim that:

- teachers may find their roles broadening to include guiding and even directing learning, a role many view with certain wariness. With good reason, early childhood teachers are
concerned about trading practices that contribute to the long-term growth and development of young children for the short-lived successes of teaching narrowly defined literacy skills. (p.43)

Whitehurst (2001) concurs by stating that the teacher’s role is to provide materials and experiences which are engaging and which cultivate preschoolers’ natural developments. This can be accomplished by sharing control with the students. Early childhood teachers also need supportive supervision by professionals who are trained in and understand the needs of preschoolers.

In tandem with teaching skills, teachers must have a curriculum that is child-centered, promotes thinking skills as well as other academic skills. Porch (2002) reports that there is not a consensus about a specific curriculum or instructional practices which should be utilized. There is, however, a strong belief that there is “an intricate relationship between play and learning” (p.6).

Initial certification is not enough for teachers to continue to provide quality instruction. On-going professional development activities are an integral part of a teacher’s career and training. Because many students in early childhood programs are minorities or limited English speakers, training in cultural and linguistic needs of children is important for teachers. This would also include training which promotes home, school and community relations and allow classroom teachers to become skilled in training parents to be effective teachers at home (Nissani, 1993). High quality early childhood teachers have the potential for preventing later school failure with those teachers having thorough knowledge about language and ways to help develop language and literacy skills. Therefore, a strong professional development emphasis would include language development, developmentally appropriate practices, multiculturalism, and advances in early childhood curriculum (Stebbins, 1998).

There are many forms of quality professional development. Teachers can be involved in
school-based training, book studies, and area meetings with other pre-school teachers. Credit courses are available, as are non-credit courses and stipend training. Distance learning opens the world of training to a variety of learning opportunities. Area colleges and universities that support research and training in early childhood practices often offer seminars, courses and workshops. For instance, Montana offers workshops, classes and projects which, in addition to providing needed training, also assist teachers in obtaining credentials and to address community issues. Since 1989, West Virginia’s Apprentice for Child Development Specialist (ACDS) program provided a comprehensive program in early childhood care and education. This program includes classroom instruction with on-the-job training. Upon completion of 4,000 training hours, teachers receive a Child Development Specialist certification from the U.S. Department of Labor.

With additional training, experience, and certification, a fair and equitable compensation plan should also be in place. Nearly 50% of center-based preschools are privately run. These schools often hire less prepared teachers willing to work for a lower salary. The National Institute for Early Education research finds that preschool teachers in such school settings generally earn about 50% of kindergarten teachers’ salary. Head Start teachers in 2002 earned an average salary of $21,287. Public school kindergarten teachers’ salaries for the same period were over $43,000. Private school preschool teachers earned even less than Head Start teachers. With increased accountability and increased push for greater teacher certification, teacher salaries and benefits must rise to meet current conditions. Doggett of the Washington-based advocacy group Trust for Early Education stated, “You have to pay people what they’re worth- and when you have a person who has a college degree, specialized training in early childhood, they’re worth it” (Toppo, 2004, p.5D).
Low wages and benefits, along with poor working conditions and low morale are reasons for teachers leaving early childhood centers at an alarming rate. Centers in Massachusetts, for instance, reported that on average, 26% of their teaching staff leave each year (Massachusetts Cost and Quality Study, 2001). Most take jobs outside of the field of early childhood education. Others leave to take a position at another center with better working conditions and/or higher salaries exist. A stable, quality staff is important at any school, but it is more important at an early childhood center where the teacher-student relationship influences a child’s social development. Additionally, a large turnover rate makes team building among a faculty a difficult task. It may also force the center director to reduce the size of the program, raise class sizes or hire staff with even fewer qualifications.

Program Evaluation

As a result of increased focus on the benefits of a quality early childhood program, there is also an increased focus on what makes these programs effective. State governments are increasingly proposing rating systems to improve early childhood services and to give parents the information needed in the selection of high-quality school environments. Jacobson (2005) reports that while most states providing pre-kindergarten programs have specific kindergarten standards, only 16 states have some type of quality rating system, and most of these states use NAEYC’s criteria for accreditation. Along with limited regulation, many states are faced with budgeting issues preventing the allocation of funds to adequately build a staff to evaluate programs throughout the state. Without such an evaluation of programs and student outcomes, according to the Council of Chief State School Officers (2002), “policy makers and program
providers will not know how to approach making program improvements and or plan budgets” (p. 6).

Documentation of student results in early childhood settings is vitally important to program improvement and accountability. States and educational institutions are utilizing a wide variety of methods in order to begin new initiatives and to evaluate program outcomes. However, much additional documentation of early childhood programs is necessary, with the focus being on what educators need in order to ensure that students are ready to enter school. Research is difficult in early childhood programs because of the many variables involved. No two classes are alike, making comparable studies difficult or impossible. Additionally, the instruments used to assess are less reliable at this age level (Elkind, 2001; Mitchell, 2001; United States Department of Health and Human Resources, 2003).

Despite the difficulties associated with assessment and documentation, high quality early childhood programs have proven success. Mitchell (2001) reports that:

Quality preschool education means operationally a program that promotes growth in the complementary areas of cognitive, social-emotional and physical development necessary for children to be ready to succeed in the primary grades. Such a program has a well-designed and delivered curriculum, teachers who are qualified and well-prepared for teaching young children, and small class sizes that foster the close teacher-child relationships through which children learn. Intensity matters, too. Children make greater gains when they participate in programs that are longer both in hours per day and length of year and in number of years of attendance. (p. 8)

Barnett and Hustedt (2003) and Shaul (2000) report high quality early childhood programs produce many benefits. Such programs are responsive to children, their families, and the communities they serve, and effectively utilize and coordinate community resources (Mitchell, 2001). According to the National Research Council, young children who are at risk of school failure have a greater probability of success if they attend a high quality early childhood program (Smith, Kleiner, Parsad, & Farris, 2003). High quality preschool programs dramatically
raise children’s abilities upon entering kindergarten, increase early and later achievement test scores, reduce grade retention and referrals to special education, and boost graduation rates (U.S. Department of Health and Human Services, 2003). Porch’s (2002) research reveals that a well-planned, high-quality education with specific curricular aims allow children to learn more and are better prepared to meet the demands of formal schooling. Children at ages two and three participating in Early Head Start programs earn higher assessment scores on tests of cognitive and language development as well as being less aggressive than those who were non-participants.

Schweinhart’s (1994) research explains that high quality early childhood schools empower stakeholders. Encouraging children to initiate their own learning activities helps them to assume a level of control over their environment and helps them solve educational, social and physical problems. Parents are empowered to become true partners in the learning process. They learn to see their children as active learners needing parental support. Job training and educational activities also help parents gain self-sufficiency (Barnett & Hustedt, 2003). Teachers are provided on-going professional development and curriculum supervision which help them become empowered to make the necessary quality decisions in the classroom.

High quality programs have long-lasting effects as well (Smith, 1988; Smith, Kleiner, Parsed, & Farris, 2003; Wetzstein, 2001). Children in these programs are less likely to need remedial help, less likely to be retained, and less likely to break laws or ask for welfare assistance. Graduation rates are higher compared to children who did not participate in high quality early childhood programs. These benefits have a significant financial impact on society as well with reduced needs for additional services and higher taxes paid as a result of better
employment opportunities (National Institute for Early Education Research, 2005; Schweinhart, 1994; Stebbins, 1998).

Conversely, poor quality early childhood programs have a negative effect. As reported in Porch (2005), Denton reports, “There is solid evidence that preschool can make a big difference, and the evidence is growing steadily. But it is also increasingly clear that programs must be of high quality to make a difference” (p.5). Too little instruction at too slow a pace for too short of a time is characteristic of poor quality schools. Rather than instruction, time is spent on transitions and discipline issues. Instruction is not sufficient to have a significant effect in overcoming the large knowledge and vocabulary differences seen in children from poverty (Neuman, 2003).

Research reveals that evaluation of early childhood programs, while not easy, results in higher academic and economic benefits throughout the participant’s life. “Evaluation can be a challenging endeavor, particularly in states that have taken a local approach to assessing needs and planning programs, resulting in wide variations in program structure, content, philosophy, and resources” (Chief Council of State School Officers, 2002, p. 7). Evaluation provides accountability mechanisms and key issues on developmentally appropriate practice in assessment of early childhood programs. Neuman (2003) asserts, “accountability means that the process of learning and teaching must remain a dynamic one, engaging all those involved in continuous improvement” (p. 290). State educational data can provide information allowing for longitudinal effects, but funding is an issue. Mitchell (2001a) recommends that the federal government fund evidence-based curricula promoting competencies of young children. The Early Learning Opportunities Act of 2001 is one such source of providing the financial incentives for communities and states to develop and create a unified system of curriculum and evaluation.
Developmentally appropriate practice in early childhood education has both significant long term and short-term results. Many programs provide immediate gains in IQ, reading achievement, language acquisition, vocabulary development, and self-concept. Early school years produce long-term effects as well, as seen in reduced referrals to special education programs, higher graduation rates and lower drop out rates, and employment with higher incomes (Banks, 2001; Barnett, 2002).

Among the most prominent studies in early childhood education conducted are the Abecedarian Project and the High/Scope Perry Preschool Project. Both studies reveal positive long-term effects on adults who participated in their early childhood programs. “These studies are the strongest with respect to internal validity and provided measures of reading from the early primary grades to the early adult years” (Barnett, 2002, p.436). Reading gains were sustained until age 21 in the Abecedarian Project research, while the High/Scope Perry Project shows gains through age 27.

Through longitudinal research, Florida State University and State University of New York at Stony Brook identified predictors of elementary school reading success. Vital to reading success in elementary grades was the acquisition of pre-reading skills such as phonological awareness, concepts about print, and writing skills. “These effects were much stronger than the influence of children’s vocabulary and general cognitive abilities in the preschool period” (Whitehurst, 2001).

Studies have also compared the academic and developmental approaches to instruction in early childhood settings. In studies conducted by Hyson, Hirsh-Pasek and Rescorla (1990), little or no academic differences resulted between the two types of instruction. However, higher levels of creativity and divergent thinking resulted in child-initiated classrooms, as did language
outcomes and verbal skills. Also, these children exhibited less test anxiety and appeared to be more confident in their cognitive skills. Children in developmentally appropriate classrooms, particularly those with lower socioeconomic status, have better reading achievement in first grade. Sherman and Mueller (1996) and Marcon’s (1992) studies also support a developmentally appropriate practices approach, finding better reading, mathematics and science achievement in future grades (Banks, 2001; Dunn & Kontos, 1997; Elkind, 2001).

Questions arise about the sustainability of gains from preschool education, particularly in developmentally appropriate practices programs. Some believe these results do not continue after children enter elementary school, nor do the levels of IQ scores (Barnett, 2002). There is considerable research on the “fade-out effect”. Studies such as those conducted by Louisville Head Start, University of Illinois and High/Scope Perry Preschool Curriculum Comparison Study, find that direct instruction programs show higher academic gains initially, but these gains fade after about one year after the preschool program (Banks, 2001; Bohan-Baker & Little, 2004; Chall & Jacobs, 2003). Barnett adds:

A simple interpretation of the results would be that most preschool programs for disadvantaged children produce initial gains in reading achievement as part of a general pattern of increased cognitive abilities, but that these gains generally do not last through the primary grades. However, a closer look at the evidence indicates that the apparent fadeout in effects of reading achievement may result from problems with research design and produces that bias estimated effects toward zero and attrition in achievement test data that decreases statistical power” (2002).

Summary

This chapter explored the literature regarding early childhood programs through the following sections: (a) historical background, (b) purposes of early childhood education and populations served, (c) early childhood principles, (d) early childhood programs and projects, (e) funding options, (f) early childhood teachers, (g) program evaluation, and (h) the summary. With
continued state regulations and the federal mandates of No Child Left Behind, early childhood Spanish-speaking bilingual children and those living in poverty. Pre-kindergarten programs work to close the achievement gap and provide the necessary skills which enable a child to be more successful not only in kindergarten, but as a life-long learner. More and more school districts are providing an academic-based program with highly qualified teachers using developmentally appropriate practices. Successful programs are responsive to both child and parents, to celebrate cultural diversity, to focus on pre-reading skills, and to improve a child’s vocabulary. While the costs of such programs are high, there is a strong return on investment in the children. There is abundant literature on early childhood programs and principles, particularly regarding developmentally appropriate practices, parental involvement, and the training of teachers of the youngest learners. But there is a gap in the literature on early childhood schools. This study adds to the body of knowledge vacant in chapter 2 and provides relevant information that will contribute to the body of literature. The following chapter will describe the methods and instruments used in the study.
CHAPTER 3
RESEARCH METHODOLOGY AND PROCEDURES

This chapter explores and describes the methodology used to gather and analyze data and to test the hypotheses posed in this research study. It is organized into the following sections: a) purpose of this study, b) context, c) research design, d) population, e) data collection, f) data analysis, and g) summary.

Purpose of this Study

In the state of Texas, one method of assessing student achievement is through the Texas Assessment of Knowledge and Skills Test, more commonly known as the TAKS test. TAKS is a criterion-referenced test administered to all students in grades 3 through 12. Third grade students are required to pass the reading portion of the TAKS test in order to be promoted to the fourth grade. Student, campus, district and state-level results are reported annually. Campus and district accountability ratings are derived in large part from the results of these tests.

In 1999, to meet the unique needs of a diverse population with a large number of students living in poverty, the district under study built three early childhood centers to house the district’s pre-kindergarten classes, as well as Head Start classes and Preschool Programs for Children with Disabilities (PPCD) classes. In order to qualify for the pre-kindergarten program, students must either meet economic disadvantaged criteria or be identified as limited English proficient (LEP). The ultimate goal of these centers is to offer these students a developmentally appropriate learning environment which significantly narrows the academic gaps among students.

Two research questions have been examined in this process.
1. As measured by the third grade TAKS reading test, what is the relationship between those Limited English proficient (LEP) Spanish-speaking children who attended a pre-kindergarten program and those who did not attend a pre-kindergarten program?

2. As measured by the third grade TAKS reading test, how do the test scores of those LEP Spanish-speaking third graders who attended the district’s pre-k program in 2000-2001 and testing in 2005, differ from those who attended the district’s pre-k program in 2001-2002 and testing in 2006?

This study determined the academic impact of the pre-kindergarten program in the district as measured by the third grade reading TAKS test. The information compares bilingual Spanish-speaking students who qualified and attended the district’s pre-kindergarten program, with those who qualified but did not attend the bilingual pre-kindergarten program. With approval from the district’s superintendent and from the University of North Texas Institutional Review Board, all data relating to student achievement and demographics will be collected from district records.

Context

This study was conducted in the Irving Independent School District, a large suburban North Texas school district. This district’s enrollment is 33,124, of which 15,237 students are in one of 20 elementary schools (grades K through 5). Another 1,925 four-year old students are enrolled in one of three early childhood centers. The ethnic composition of the district is 65.4% Hispanic, 17.7% White, 12.6% African American, 4.1% Asian, and .03% Native American. Seventy-one percent of the students qualified for free or reduced lunches (IISD 2006).

Strict guidelines for qualifying for the early childhood program are in place. Students qualify based on economic disadvantaged status, because of limited English proficiency, or because their families are homeless.

Parents of pre-kindergarteners are strongly encouraged to contribute a specific number of community hours, preferably in the child’s school. Classes on child-rearing,
discipline, health and reading and literacy instruction are also required. Parental involvement is also an integral part of the pre-kindergarten program. Between 15% and 20% of parents are active volunteers in the schools. Parent training classes are on-going with topics recommended by the parents. These include discipline, at-home instruction on counting, reading, letters and sounds.

Rather than just examine the passing rates of each of the students involved in this research, additional research examined results by gender, by scale score, and by Commended Performance.

Population

The population for this study involved 160 third graders who have continuously attended the district schools from pre-kindergarten through third grade or kindergarten through third grade. The sample groups were comprised of third graders who met specific criteria. Eighty bilingual students in third grade during the 2004-2005 school year were part of this study. Forty of these students have attended pre-kindergarten in the district, while 40 of them did not as they were recent immigrants to the United States prior to entering kindergarten in 2001. Another 80 bilingual students in the third grade during the 2005-2006 school year were also a part of this study. Again, 40 of these students attended pre-kindergarten in the district, while the other 40 immigrated to the United States just prior to enrolling in kindergarten for the 2002 school year. Because of the unique instructional accommodations and interventions involved, particularly the additional year of instruction, no student who has been retained was part of this study, nor was any special education student. All students have been continuously enrolled in the district since either pre-kindergarten or kindergarten. In order to maintain confidentiality for the students,
students will be listed numerically by the student identification number assigned to each student when he/she enrolled in the district.

Research Design

Based on this context and population, the study compared group differences on the March 2005 and 2006 administrations of the Reading portion of the TAKS test for each of the groups under study. Students are given three opportunities to take and pass the Reading portion of TAKS in third grade before their retention is considered. This study only looked at the first administration of TAKS reading because each campus develops special academic interventions to help students meet the passing standard once they have failed. Only the Spanish version of the test is used for this study. This research project utilized quantitative methodology and was designed as causal-comparative research using independent $t$-tests. Gall, Borg, and Gall (1996) explained that a $t$-test is “a test of statistical significance that is used to determine whether the null hypothesis that two sample means coming from identical populations can be rejected” (p. 772). T-tests are affected by the size of the sample, also known as degrees of freedom, the variable of each of the two groups, and the size of the mean difference. Through independent $t$-test design, each subject serves in only one group.

Gall, Borg, and Borg (1996) further explain that the “causal-comparative method is the simplest quantitative approach to exploring cause-and-effect relationships between phenomena” (p. 380). The first research question of this study is, “As measured by the third grade TAKS reading test, what is the relationship between those limited English proficient (LEP) Spanish-speaking children who attended a pre-kindergarten program and those who did not attend a pre-kindergarten program?” The second research question asks, “As measured by the third grade
TAKS reading test, how do the test scores of those LEP Spanish-speaking third graders who attended the district’s pre-k program in 2000-2001 and testing in 2005, differ from those who attended the district’s pre-k program in 2001-2002 and testing in 2006?” With the results from this question, it will become evident whether the pre-k program is becoming a more effective intervention for English language learners. Both questions examine group differences on the reading achievement of the students in the study comparing the collection of existing data and both attempt to draw causal relationships.

One disadvantage to using a causal-comparative research design is the difficulty in controlling other variables that may influence cause-effect interpretation. This is true for this study. While the curriculum taught is the same for all district schools, other variables include teacher experience, staff development opportunities, school expectations, leadership, student mobility, parental support, and availability of supplemental materials and programs. Equal corresponding variances occur throughout each population and do not differ significantly from each other.

The relationship between two variables and the importance of these results is known as an effect size. When using a t-test design, Cohen’s $d$ is one of the most commonly used. In examining the differences between two groups under study in a t-test, Cohen (1998) defined $d$ as the difference or effect size between the two means divided by the standard deviation of either group. Effect size, measured as small, moderate or large, is the average percentile standing of the average treated participant group relative to the average untreated participant group. An effect size of 0.2 indicates that the mean of the treated group is at the 58$^{th}$ percentile of the untreated group. An effect size of 0.8 indicates that the mean of the treated group is at the 79$^{th}$ percentile of the untreated group. In interpreting $d$, it is generally considered that anything below
0.5 is considered a small effect, between 0.5 and 0.8 is considered a moderate effect, and anything above 0.8 is considered a large effect.

Subjects were chosen randomly by the school district mainframe from the total number of bilingual students who are enrolled in the third grade during the 2005-2006 school year and from the total number of bilingual students who were enrolled in the third grade during the 2004-2005 school year. No students enrolled in special education or who have been retained are part of this study. The compelling interest of this study is to examine the effects of bilingual pre-kindergarten on reading achievement as defined by TAKS standards.

Data Collection

With approval from the district Division Director of Research and Evaluation and the district Superintendent, the district’s results for the third grade March 2005 and March 2006 administrations of the reading portion of the TAKS exam were gathered. From this information, and working with the Executive Director of Technology and her staff, data were collected and organized in order to compare the reading achievement scores of the students in the samples to determine if there are any significant differences in the scores of the students among the groups under study. A program was written to compare those students who attended bilingual pre-kindergarten in the district with those who qualified for bilingual pre-kindergarten but did not attend. Only those students with continuous enrollment from pre-kindergarten through third grade or kindergarten through third grade are included in this study. Students in this study must have remained in the bilingual program. No students receiving special education services were included. In total, 160 students were part of this study. Eighty students have completed third grade in the 2004-2005 school year, of which 40 attended the district’s pre-kindergarten
program. Another 80 students have completed the third grade in the 2005-2006 school year, 40 of whom attended the district’s pre-kindergarten program. Only those attending the district’s pre-kindergarten program were part of the study for research question 2.

Data Analysis

An examination of the responses of the $t$-tests was conducted to compare reading achievement scores of the students in the samples to determine if there are any significant differences in the scores of those bilingual students who attended pre-k and those who did not. Additionally, comparisons of reading scores between those testing in third grade in two different years- 2005 and 2006 were made. The data for both hypotheses were analyzed using independent $t$-tests. The University of North Texas Center for Interdisciplinary Research and Analysis (CIRA) assisted in analyzing the data using the Statistical Package for the Social Sciences (SPSS) software. A level of significance of .10 was used for all tests.

The independent variable for this study was the school district’s early childhood program and which groups of students attended. The scores for the first administration of the third grade TAKS reading test scores served as the dependent variables.

Summary

This chapter described the procedures that used in the implementation of this study, including research design, selection of participants, instrumentation, data collection, and data analysis procedures. The study involved testing two hypotheses, both related to TAKS reading scores. One population of interest included bilingual students who attended pre-kindergarten and took the TAKS reading test in third grade. The other population involved bilingual students who
did not attend pre-k but would have been eligible if they had been in this country at that time, and who took the TAKS reading test in the third grade. Data from the school district’s mainframe computer was collected and analyzed using Statistical Package for the Social Sciences (SPSS) Testing of individual hypotheses include the use of t-tests. A level of significance of .10 was used for all tests. The following chapter will present results obtained from implementation of these procedures.
CHAPTER 4
ANALYSIS OF DATA

Introduction

Data presentation, data analysis and interpretation of data are provided in this chapter. First is a description of the participants of the study is included. Next, a review of the two research questions and the hypotheses as well as the procedures is offered. The following section presents and analyzes the data. This chapter concludes with a summary of the results and the analysis of the study.

Participants

This research study is designed to determine if pre-kindergarten is an effective intervention on future TAKS (Texas Assessment of Knowledge and Skills) Reading scores for Spanish-speaking bilingual students. TAKS is first administered to third graders in the state of Texas. The population of this study consists of 160 students, 80 of whom attended pre-kindergarten, and another 80 who did not attend pre-kindergarten. This study focused on native Spanish-speaking bilingual third grade students continually enrolled in the same district from the start of their educational career through third grade; examining students enrolled in third grade in the 2004-2005 and the 2005-2006 school years.

Research Questions and Procedures

The presentation and analysis of the data collected for this study are provided in this section. The first research question asks: As measured by the third grade TAKS reading test, what is the relationship between those limited English proficient (LEP) Spanish-speaking
children who attended a pre-kindergarten program and those who did not attend a pre-
kindergarten program?" To effectively analyze the data for these hypotheses, and to get a clear
picture of all participants the information was examined using the following information.

- Comparing those students who attended pre-kindergarten with those who did not
  attend pre-kindergarten.
- Comparing by gender those who attended pre-kindergarten with those who did not
  attend pre-kindergarten.
- Comparing by scale score those students who attended pre-kindergarten with those
  who did not attend pre-kindergarten.
- Comparing by both gender and scale score those who attended pre-kindergarten with
  those who did not attend pre-kindergarten.
- Comparing those earning Commended Performance of those who attended pre-
  kindergarten with those who did not attend pre-kindergarten.
- Comparing by gender those who earned Commended Performance of those who
  attended pre-kindergarten with those who did not attend pre-kindergarten.

The second research question asks: “As measured by the third grade TAKS reading
results, do the scores of Spanish speaking LEP students who attended the district’s pre-
kindergarten program in 2000-2001 and tested in 2005 differ from those who attended the
district’s pre-kindergarten program in 2001-2002 and tested in 2006?”

Descriptive Statistics

Throughout this research, independent \( t \)-tests were utilized to analyze the effects of pre-
kindergarten on the Spanish-speaking LEP students involved in this study. These \( t \)-tests group
mean differences. Practical group means differences were interpreted through the Cohen’s \( d \) test.
The statistical significance of differences in observed frequencies was measured through Chi
Descriptive statistics were conducted on the reading scores from the third grade TAKS reading test administered in 2005 and 2006.

Presentation and Analysis of Data

Research Question 1

Research Question 1 asks, As measured by the third grade TAKS reading test, what is the relationship between those limited English proficient (LEP) Spanish-speaking children who attended a pre-kindergarten program and those who did not attend a pre-kindergarten program? The first information examined was the number of students overall who passed the Reading portion of the TAKS.

Table 1

<table>
<thead>
<tr>
<th>Did Not Meet Passing Standard</th>
<th>Did Not Attend Pre-Kindergarten</th>
<th>Attended Pre-Kindergarten</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>17</td>
<td>14</td>
<td>31</td>
</tr>
<tr>
<td>Female</td>
<td>9</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>Met Passing Standard</td>
<td>54</td>
<td>61</td>
<td>115</td>
</tr>
<tr>
<td>Male</td>
<td>23</td>
<td>26</td>
<td>49</td>
</tr>
<tr>
<td>Female</td>
<td>31</td>
<td>35</td>
<td>66</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>80</td>
<td>160</td>
</tr>
</tbody>
</table>

As shown in Table 1, of the 80 students who attended pre-kindergarten, 61 met the passing standard, equating to a passing rate of 76%. Of the 80 students who did not attend pre-kindergarten, 54 or 67% met the passing standard. While there is a difference in the number of students passing between those attending pre-kindergarten and those who did not, group means
differences were not statistically significant ($\chi^2 = .858$, $p = .354$, $F = -.240$, $p = .625$, $t = -.248$, $p = .805$).

The study was expanded to examine the passing rates on TAKS reading based on gender. There was a statistically significant difference in passing rates between boys, 26 of 40 who attended pre-kindergarten, or 65% and girls 35 of 40 attending pre-kindergarten or 87.8%. However, results of comparisons between those males attending pre-kindergarten and those who did not, do not show any statistically significant difference between those who attended pre-kindergarten and those who did not ($t = -.144$, $p = .856$). Assumption of the equality of variances was met through the Levene’s test ($F = 2.752$, $p = .101$). Of the 40 boys in this study attending pre-kindergarten, 26 (65%) passed TAKS reading, while 23 of the 40 (57.5%) male students not attending pre-kindergarten passed. Similar results were revealed for female testers in this study. Thirty-five of 40 (87.8%) of those girls attending pre-kindergarten passed the test while 31 of 40 (78%) not attending pre-kindergarten passed. Again, no statistically significant difference was noted ($t = -.253$, $p = .801$).

It is important to examine not just how many passed, but also how well students did on the TAKS reading test. Therefore, the second segment of this research deals with actual scale scores, comparing mean scores of those attending pre-kindergarten with those who did not attend. A passing scale score on the TAKS reading test is 2100 or above. As seen in Table 2, of the 80 students who attended pre-kindergarten, the mean scale score was 2170.39, while the mean scale score for those who did not attend was 2161.26. The assumption is the equality of variances was met through Levene’s test ($F=.240$, $p=.625$) and with the Pearson Chi-Square value ($\chi^2 = .858$, $p = .354$). This information reveals that the group means differences are not statistically significant ($t = -.248$, $p = .805$).
TAKS reading results for the same two-year period were also examined based on gender. The mean scale score for those 80 boys who attended pre-kindergarten was 2109.73. The score for those 80 boys not attending pre-kindergarten was 2100.95. Levene’s test verifies that the assumption of equality for variances was met ($F = 2.752, p = .101$). Group mean differences were not statistically significant ($t = -.144, p = .886$). Although mean scale scores for females were higher than for males, similar results comparing pre-kindergarten status were noted. Those girls attending pre-kindergarten had a mean scale score of 2231.05; those not attending pre-kindergarten had a mean scale score of 2221.57. The assumption of equal variances was met through Levene’s Test ($F = 3.181, p = 0.078$). The independent t-test shows the mean differences were not statistically significant ($F = -.253, p = .801$).

Table 2

*Scale Score Statistics of Those Testing in 2005 and 2006*

<table>
<thead>
<tr>
<th>Attending Pre-Kindergarten</th>
<th>Number</th>
<th>Mean Scale Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did Not Attend</td>
<td>80</td>
<td>2161.26</td>
</tr>
<tr>
<td>Male</td>
<td>40</td>
<td>2100.95</td>
</tr>
<tr>
<td>Female</td>
<td>40</td>
<td>2221.57</td>
</tr>
<tr>
<td>Attended</td>
<td>80</td>
<td>2170.39</td>
</tr>
<tr>
<td>Male</td>
<td>40</td>
<td>2109.73</td>
</tr>
<tr>
<td>Female</td>
<td>40</td>
<td>2231.05</td>
</tr>
</tbody>
</table>

$\chi^2 = 0.858, p = 0.354$

*Independent Samples Tests*

<table>
<thead>
<tr>
<th>Levene’s test for Equality of Variances</th>
<th>$t$-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levene’s test for Equality of Variances</td>
<td>$t$-test for Equality of Means</td>
</tr>
<tr>
<td>$F$</td>
<td>Sig.</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>Total</td>
<td>0.240</td>
</tr>
<tr>
<td>Male</td>
<td>2.752</td>
</tr>
<tr>
<td>Female</td>
<td>3.181</td>
</tr>
</tbody>
</table>
In addition to the number of students passing the TAKS reading test and the mean scale score for the test, Texas schools are also scrutinized based on the number of students earning Commended Performance, a score equating to missing less than two questions on the test. To receive Commended Performance, a student must receive a scale score of at least 2400. Table 3 reveals twelve students who attended pre-kindergarten earned Commended Performance as compared to nine students who did not attend pre-kindergarten who made Commended Performance. The Chi Square test showed that no statistically significant differences were observed in frequencies ($\chi^2 = .493, p = .482$).

In narrowing the study by examining gender, four males attending pre-kindergarten earned Commended Performance while two boys who did not attend pre-kindergarten received the same distinction. The difference is not statistically significant. More girls than boys made commended performance; seven girls who did not attend pre-kindergarten, eight girls who did attend. However, this again reveals that no statistically significant difference exists.

Table 3

\textit{Commended Performance Results of TAKS-testers in 2005 and 2006}

\begin{tabular}{|l|l|l|l|l|l|l|}
\hline
\textbf{Gender} & \textbf{Commended Performance} & \textbf{Did not Attend Pre-kindergarten} & \textbf{Attended Pre-kindergarten} & \textbf{Total} \\
\hline
Male & Did Not Earn & 38 & 36 & 74 \\
Male & Earned & 2 & 4 & 6 \\
Total & & 40 & 40 & 80 \\
Female & Did Not Earn & 33 & 32 & 65 \\
Female & Earned & 7 & 8 & 15 \\
Total & & 40 & 40 & 80 \\
\hline
\end{tabular}

In conclusion, while examining the difference between those who attended pre-kindergarten and those who did not, the statistical research explains repeatedly that no difference
exists in the TAKS reading scores of the two groups.

The first research question is examined over the two year period of the study. Further examination explores the results of the subject students during the 2004-2005 school year only. Hypothesis 2 states, “As measured by TAKS, there is no significant difference in the third grade Spanish reading achievement of LEP students who attended pre-kindergarten in 2000-2001 and those LEP students who did not attend pre-kindergarten.” Results for this are similar to the results found in Tables 1, 2 and 3.

Table 4

*Passing Statistics for Students Testing in 2005*

<table>
<thead>
<tr>
<th>Did Not Meet Passing Standard</th>
<th>Did Not Attend Pre-Kindergarten</th>
<th>Attended Pre-Kindergarten</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>15</td>
<td>6</td>
<td>21</td>
</tr>
<tr>
<td>Female</td>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Met Passing Standard</td>
<td>25</td>
<td>34</td>
<td>59</td>
</tr>
<tr>
<td>Male</td>
<td>9</td>
<td>16</td>
<td>25</td>
</tr>
<tr>
<td>Female</td>
<td>16</td>
<td>18</td>
<td>34</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>40</td>
<td>80</td>
</tr>
</tbody>
</table>

*Independent Samples Tests*

<table>
<thead>
<tr>
<th></th>
<th>Levene’s test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>Total</td>
<td>0.513</td>
<td>0.476</td>
</tr>
<tr>
<td>Male</td>
<td>0.094</td>
<td>0.761</td>
</tr>
<tr>
<td>Female</td>
<td>0.199</td>
<td>0.658</td>
</tr>
</tbody>
</table>

Eighty students were studied for Table 4 which reveals the number of students who
passed the TAKS reading test in the 2004-2005 school year. Six of 40 students who attended pre-kindergarten, 15%, did not meet TAKS reading passing standards while 15 of the 40 students, 37%, who did not attend pre-kindergarten did not meet passing standards. No statistically significant difference was noted in Levene’s Test for Equality of Variances nor the t-test for Equality of Means (F = .513, p = .476, t = -2.739). However a difference was noted in the p value of the t-test (.008).

Table 5

*Group Statistics of Those Testing in 2005*

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Mean Scale Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did Not Attend Pre-Kindergarten</td>
<td>40</td>
<td>2131.32</td>
</tr>
<tr>
<td>Male</td>
<td>20</td>
<td>2058.40</td>
</tr>
<tr>
<td>Female</td>
<td>20</td>
<td>2204.45</td>
</tr>
<tr>
<td>Attended Pre-Kindergarten</td>
<td>40</td>
<td>2228.13</td>
</tr>
<tr>
<td>Male</td>
<td>20</td>
<td>2213.80</td>
</tr>
<tr>
<td>Female</td>
<td>20</td>
<td>2242.45</td>
</tr>
</tbody>
</table>

Table 5 reports a mean TAKS reading score of 2131.32 was earned by the 40 students testing in 2005 who had not attend pre-kindergarten. In that same year, of the 40 who had attended pre-kindergarten, a mean TAKS reading score of 2228.13 was earned. No practical group differences were noted in the Cohen d value (d = 0.680). The assumption is the variance was met through Levene’s test (F = .513, p = .476), and the statistical mean group differences were not statistically significant (t = -2.739). A difference was noted in the p value of the t-test (.008).

These results were similar for the male population studied. The mean scale score for those not attending pre-kindergarten was 2058.40, while the mean scale score for the 20 attending pre-kindergarten was 2213.80. Results of comparisons between those males attending
pre-kindergarten and those who did not in 2000 do not show any statistically significant differences except in the p value of the t-test (F = .094, p = .761, t = -3.045, p = .004).

The results were different for the 40 females tested in 2004-2005. The mean scale score for those not attending pre-kindergarten was 2204.25, while the mean scale score for those attending pre-kindergarten was 2242.45. No statistically significant difference was reported for the girls tested during this year. (F = .199, p = .658, t = -.867, p = .391).

As revealed in Table 6, five of 40 students not attending pre-kindergarten (12.5%) made commended performance while 17.5% (7 of 40 students) who attended pre-kindergarten made Commended Performance. Commended Performance results for the 2004-2005 school year reveal no statistical difference exists between those attending pre-kindergarten and those who did not (χ² = .864, p = .352).

Table 6

**Commended Performance Results of TAKS-testers in 2005**

<table>
<thead>
<tr>
<th>Commended Performance</th>
<th>Did Not Attend Pre-Kindergarten</th>
<th>Attended Pre-Kindergarten</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did Not Earn Commended Performance</td>
<td>35</td>
<td>33</td>
<td>68</td>
</tr>
<tr>
<td>Earned Commended Performance</td>
<td>5</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>40</td>
<td>80</td>
</tr>
</tbody>
</table>

χ² = 0.864  p = 0.352

As seen in Table 7, of the 80 students examined in this segment of the study, a total of 21 students, 26%, did not meet the passing expectations. Of those 21 students, 71% did not attend pre-kindergarten. No statistically significant difference was noted (F = .884, p = .350, t = 1.237, p = .220).
Table 7

*Passing Statistics for Students Testing in 2006*

<table>
<thead>
<tr>
<th>Did Not Meet Passing Standard</th>
<th>Did Not Attend Pre-Kindergarten</th>
<th>Attended Pre-Kindergarten</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>6</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td>Female</td>
<td>5</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Met Passing Standard</td>
<td>29</td>
<td>27</td>
<td>56</td>
</tr>
<tr>
<td>Male</td>
<td>14</td>
<td>10</td>
<td>24</td>
</tr>
<tr>
<td>Female</td>
<td>15</td>
<td>17</td>
<td>32</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>40</td>
<td>80</td>
</tr>
</tbody>
</table>

Table 8 represents the mean scale scores of those 80 students who took the Reading portion of TAKS in 2006. Of the 80 students involved in this segment of the study, the scale score of those not attending pre-kindergarten, 2191.20, was actually higher that for those attending pre-kindergarten, 2112.65. However, a statistically significant difference is not evidenced through Levene’s test ($F = .513$, $p = .476$). Likewise, the Cohen $d$ value did not reveal a statistically significant value ($d = .195$)

Table 8

*Group Statistics of Those Testing in 2006*

<table>
<thead>
<tr>
<th>Pre-Kindergarten</th>
<th>Number</th>
<th>Mean Scale Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did Not Attend Pre-Kindergarten</td>
<td>40</td>
<td>2191.20</td>
</tr>
<tr>
<td>Male</td>
<td>20</td>
<td>2143.50</td>
</tr>
<tr>
<td>Female</td>
<td>20</td>
<td>2238.90</td>
</tr>
<tr>
<td>Attended Pre-Kindergarten</td>
<td>40</td>
<td>2112.65</td>
</tr>
<tr>
<td>Male</td>
<td>20</td>
<td>2005.65</td>
</tr>
<tr>
<td>Female</td>
<td>20</td>
<td>2219.65</td>
</tr>
</tbody>
</table>
Independent Samples Tests

<table>
<thead>
<tr>
<th></th>
<th>Levene’s test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>Total</td>
<td>0.884</td>
<td>0.350</td>
</tr>
<tr>
<td>Male</td>
<td>2.438</td>
<td>0.127</td>
</tr>
<tr>
<td>Female</td>
<td>4.141</td>
<td>0.049</td>
</tr>
</tbody>
</table>

Similar results were observed for both male and female scores, again with no statistically significant differences between those who attended pre-kindergarten and those who did not (Male: F = 2.438, p = .127, t = 1.295, p = .203; Female: F = 4.141, p = .049, t = .314, p = .756).

Table 9 details the results of the students earning Commended Performance on the Reading portion of TAKS in 2006, revealing that 11 students, 7 who attended pre-kindergarten and 5 who did not attend, made Commended Performance. There is no statistical difference between those attending pre-kindergarten and those who did not attend (χ² = .125, p = .723).

Table 9

<table>
<thead>
<tr>
<th>Commended Performance</th>
<th>Did Not Attend Pre-Kindergarten</th>
<th>Attended Pre-Kindergarten</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did Not Earn Commended Performance</td>
<td>36</td>
<td>35</td>
<td>71</td>
</tr>
<tr>
<td>Earned Commended Performance</td>
<td>4</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>40</td>
<td>80</td>
</tr>
</tbody>
</table>

χ² = 0.125, p = 0.723

Research Question 2

The second research question asks: “As measured by the third grade TAKS reading results, do the scores of Spanish speaking LEP students who attended the district’s pre-
kindergarten program in 2000-2001 and tested in 2005 differ from those who attended the district’s pre-kindergarten program in 2001-2002 and tested in 2006? Table 10 reports the test results of each of the two years in this study, showing the mean scale score for the 2005 test year, 2179.73, was actually higher that for the 2006 test year, 2151.93. The mean difference between the 2005 and 2006 test scale scores was 27.8. However, the difference is not seen as statistically significant ($F = 1.387$, $p = .241$, $t = .756$, $p = .451$)

Similar results were evidenced for the mean difference for girls tested in 2005 and 2006 showed a scale score difference of 5.93. Again, this difference is not seen as statistically different ($F = 1.972$, $p = .164$, $t = -.158$, $p = .875$)

Table 10

| Comparison of Scale Scores of Those Testing in 2005 and in 2006 |
|---------------------------------|-----------------|-----------------|
| Year                           | Number Tested  | Mean Scale Score |
| Tested in 2005                 | 80              | 2179.73          |
| Male                           | 40              | 2136.10          |
| Female                         | 40              | 2223.35          |
| Tested in 2006                 | 80              | 2151.93          |
| Male                           | 40              | 2074.57          |
| Female                         | 40              | 2229.28          |

<table>
<thead>
<tr>
<th>Levene’s test for Equality of Variances</th>
<th>$t$-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>$F$</td>
<td>$t$</td>
</tr>
<tr>
<td>Total</td>
<td>1.387</td>
</tr>
<tr>
<td>Male</td>
<td>0.965</td>
</tr>
<tr>
<td>Female</td>
<td>1.972</td>
</tr>
</tbody>
</table>

Table 11 represents the numbers of students testing in 2005 and in 2006 who earned
Commended Performance. Of the students testing in 2005, five boys and seven girls earned Commended Performance, eight of whom attended pre-kindergarten, while in 2006, nine students, one boy and eight girls earned the same distinction. In 2006, four students did not attend pre-kindergarten; five did. Overall, in examining these results, there is no statistically significant difference between those who tested in 2005 and those who tested in 2006 ($\chi^2 = .493$, $p = .482$).

Table 11

Students Earning Commended Performance in 2005 and 2006

<table>
<thead>
<tr>
<th></th>
<th>2005 Did Not Attend Pre-Kindergarten</th>
<th>2005 Attended Pre-Kindergarten</th>
<th>2006 Did Not Attend Pre-Kindergarten</th>
<th>2006 Attended Pre-Kindergarten</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Female</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>7</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

$\chi^2 = 0.493, \ p = 0.482$

In conclusion, there is no difference between the mean scale score between either of the years tested, nor is there a statistical difference between those earning Commended Performance between the two years.

Summary and Analysis of Study

Chapter 4 presented and analyzed the data related to both of the study research questions. This information addressed the pre-kindergarten program as an early intervention for Spanish-speaking bilingual students. While the $p$ value of several $t$-tests showed some isolated statistically significant differences between those who attended pre-kindergarten and those who did not, the data shows no significant differences in the test scores of these students. Students
attending pre-kindergarten during the two year period under study show a slightly higher passing rate than those who did not attend. Overall, more girls than boys passed the TAKS reading test.

Both boys and girls who attended kindergarten had a greater percent of passing. In each test, no significant difference was observed. Likewise, scale scores and commended performance rates revealed no significant difference between those attending and those not attending pre-kindergarten. When examining the difference between test results of the 2005 and 2006 testing years, there were no significant differences. Chapter 5 provides the summary, discussion, conclusions, and recommendations for future research.
CHAPTER 5

SUMMARY

A current reform in education is the implementation and improvement of a pre-kindergarten early childhood program using developmentally appropriate practices to meet the needs of young children. The National Association for the Education of Young Children believes “a high quality early childhood program provides a safe and nurturing environment that promotes the physical, social, emotional, and cognitive development of young children while responding to the needs of the family” (2001). The purpose of this study was to analyze the effectiveness of pre-kindergarten as an early intervention for the Reading section of the TAKS test for third grade Spanish-speaking LEP students. The methodology employed was a quasi-experimental design utilizing TAKS results.

The information is reported in the following ways: a summary and discussion of the major findings related to the research questions; discussion of the results, concerns and implications of the study; and recommendations for future practice and research.

Summary of Previous Chapters

Chapter 1 provided a background and an outline of the study, and described this study’s significance and limitations. The research questions were defined, terms used in the study were defined, and the assumptions of the study were described.

Chapter 2 provided the review of relevant literature related to pre-kindergarten. First, it reviewed the historical background of pre-kindergarten education, including the purposes of early childhood education and the populations served, and enrollment in early childhood programs. Next, the chapter detailed important early childhood principles. These include
curriculum models which provide not only for the acquisition of meaningful academic skills, but also provide for cognitive, emotional, physical, and social growth. Strong curricular models address cultural diversity, parent and community involvement, and the meeting of student needs through classroom environment. Next, the research explored early childhood programs at the international, national, and state levels, as well as examining prominent private programs. Universal pre-kindergarten programs are also being touted by many as a means of improving future learning. As with all educational initiatives, funding is a concern among governmental entities and these issues are explored. As the research indicates (AACTE, 2004; Jacobson, 2003; Starr, 2002; Waqar, 2000) the teacher’s role in a students’ success is paramount, so the need for qualified, certified teachers is equally important. No Child Left Behind requires public schools to hire highly qualified teachers. Additionally, on-going, high-quality staff development is a major component of any instructional program. Finally, school districts are faced with an ever-present and increasing demand to find new sources for funding early childhood initiatives.

Chapter 3 explained the methodology of this study. It began by restating the purpose of the study and the research questions. The chapter then detailed the methodology and research design. This study was both a descriptive and causal-comparative study. It described the relationship between the scores of bilingual Spanish-speaking students who qualified for and attended a pre-kindergarten program in the Irving Independent School District with Spanish-speaking bilingual students who qualified for or would have qualified for the pre-kindergarten program but did not attend.

An analysis of the data collected for this study was presented in Chapter 4. It began with a description of the characteristics of the study. A comparison of mean scale scores indicated no
Discussion of Results

Throughout the United States, researchers have provided evidence that high quality early childhood programs are beneficial (Mitchell, 2001; Porch, 2002; Schweinhart, 1994; Smith, Kleiner, Parsad, & Farris, 2000; U.S. Department of Health and Human Services, 2003). However, the findings of this study do not concur with that research.

Research Question 1

Research Question 1 asked: “As measured by the third grade TAKS reading test, what is the relationship between those limited English proficient (LEP) Spanish-speaking children who attended a pre-kindergarten program and those who did not attend a pre-kindergarten program?”

Fewer students who did not attend pre-kindergarten met passing standards than those who attended pre-kindergarten (76%-67%). These results were not statistically significant. Examining the scores based on gender, more girls passed the test than boys; however, again, no significant statistical differences were noted.

This study also looked at the scale scores of each group of students testing. A passing score is considered 2100 or above. The mean scale score for those attending pre-kindergarten was 2170.73, while the scale score for those not attending was 2161.26. No statistically significant difference was noted. The scale score for boys testing revealed a difference of 9 points, while a difference of 10 points existed for the girls tested. Again, no statistically significant difference was reported. The number of students earning Commended Performance,
a scale score of 2400 or above, was also examined. During this time, two boys not attending pre-kindergarten earned Commended Performance, compared to four boys who attended pre-kindergarten earning Commended Performance. Seven girls who did not attend pre-kindergarten and eight girls who attended pre-kindergarten earned Commended Performance. No statistically significant differences were noted.

A total of 15 students who did not attend pre-kindergarten did not meet the passing standard; 11 were boys and 4 were girls. Six students who attended pre-kindergarten, four boys and two girls, did not pass. Again, while more students who attended pre-kindergarten met standard than those who did not attend, there is no statistically significant difference between the groups of students testing.

Scale score results yielded similar results. The mean scale score for those not attending pre-kindergarten was 2131.32, while those attending pre-kindergarten was 2228.13. However, no statistically significant difference was noted. Likewise, there was no difference in scores between the girls who attended pre-kindergarten (2242.45) and those who did not attend pre-kindergarten (2204.45). Of the boys testing, while there was a difference of 155 points between the scale score of those who attended pre-kindergarten and those who did not, this did not result in a statistically significant difference. Five students who did not attend pre-kindergarten and seven who did attend pre-kindergarten earned Commended Performance. Again, no statistically significant difference was noted.

The final information examined as part of this research question was about the students who tested in 2006. The findings of this study indicate that no statistically significant differences exist between those attending pre-kindergarten and those who did not during the 2000-2001 and 2001-2002 school years. Eleven students not attending pre-kindergarten and 13 who attended
pre-kindergarten did not meet passing expectations. Interestingly, more boys who attended pre-
kindergarten, 10, did not meet passing standards than those who did not attend pre-kindergarten, 6.

Scale scores and Commended Performance for these students did not reveal statistically
significant differences. However, scores for students not attending pre-kindergarten are higher
that those attending pre-kindergarten for both genders. Nearly an equal number of students
earned Commended Performance. Four students who did not attend pre-kindergarten while five
students who attended pre-kindergarten earned Commended Performance.

Research Question 2

Research Question 2 asked: “As measured by the third grade TAKS reading results, do
the scores of Spanish-speaking LEP students who attended the district’s pre-kindergarten
program in 2000-2001 and tested in 2005 differ from those who attended the district’s pre-
kindergarten program in 2001-2002 and tested in 2006?”

The data collected and analyzed for Research Question 2 indicated no statistically
significant difference between the two years tested. Students testing in 2005 actually had a
higher scale score average than those testing in 2006. Higher scale scores were reported for boys
testing in 2005 than in 2006. Girls in 2006, however, had higher a scale score average than girls
testing in 2005. As with other results, there were no statistically significant differences in the
number of Commended Performance students testing in 2005 (7) than those testing in 2006 (5).

Concerns of the Study

It may be disheartening to an educator to be unable to see significant differences in
TAKS reading scores between those Spanish-speaking students who attended pre-kindergarten and those who did not. The literature suggests that pre-kindergarten has a positive impact on students, particularly on economically disadvantaged and Limited English proficient students. This researcher believed the three early childhood schools would have been able to provide quality instruction producing higher achievement in later academic years because students had early interventions in a developmentally appropriate program.

There are several factors which can be taken into consideration when looking at these study results. The three early childhood schools in Irving ISD opened in August of 1999. Students in this study attended the pre-kindergarten schools during their second and third years of operation. The three campuses were relatively new with many programs being put into place incrementally. Opening a new program, such as early childhood schools, cannot be expected to have all components in place and operating successfully from the start. This type of program takes time to develop, to mature, and to grow. A strong program requires teachers to work together, and when one teacher joins a team, it takes time for the team to restructure and reorganize. When a school opens, it takes even longer for that team to bond, to grow, and to share practice.

The early childhood program in Irving ISD has grown and developed in many ways over the years. The program has moved to a program of greater academic focus including a standard curriculum, and specific guidelines for bilingual classrooms. Balanced literacy training is ongoing at all levels of elementary instruction, training teachers on pre-reading skills, small group instruction, and curriculum integration. Due to these developments, future studies may reveal stronger academic gains in those who attended the pre-kindergarten programs.

Parents obviously play an important role in educating even the youngest (AACTE, 2004;
Bohan-Baker & Little, 2007; Jones, 2001; McGhee, Benner & Dill, 1999. However, student attendance rates at the early childhood schools are below that of elementary schools. While part of this is due to additional illnesses, parents at times do not see the importance of consistent attendance.

It is difficult to use pre-kindergarten exclusively as a means of intervention, as other factors may have influenced the findings. With the increased attention on achievement, particularly with the TAKS results, the district has developed and implemented numerous interventions for all students. This includes tutoring during the school day as well as after school, technology, and teacher training. As a result of this training, teachers are better prepared to assess student learning and to develop additional lessons to address learning gaps. Districts must also examine teacher experience as a factor in intervention. Teachers with more experience have a greater wealth of teaching skills to use with their students. More and more, school districts are hiring new teachers who are enrolled in an alternative certification program, particularly for bilingual positions. These teachers do not have the college background in education and receive training in a modified program. They do not come to the classroom with the knowledge and experiences of those who have been through a traditional degree program.

While these are not the results a district prefers to see, there are various unintended results. Numerous kindergarten teachers report those students who attended pre-kindergarten are better prepared for kindergarten, show more emotional stability, are better able to solve problems, and have a better awareness of school. Kindergarten students who attend pre-kindergarten know most of their letters and sounds, have a good knowledge of concepts of print, and are more proficient at oral language and math skills. These students understand school rules,
following directions, using school tools and equipment, and cooperative learning. This would be a topic for future study.

Implications of the Study

This study examined the third grade Reading TAKS scores of groups of Spanish-speaking students who attended pre-kindergarten with those who did not attend. Even though there were no statistically significant differences in test scores, there were some practical implications that emerged.

The Irving Independent School District chose to move all pre-kindergarten and Head Start classes into three campuses resulting in many positive implications. Having all pre-kindergarten students in one building has numerous advantages. It helps provide a research-based developmental program as well as providing those attending with safety and without interference from older students. There is no real or perceived intimidation from older students. Pre-kindergarten students and teachers are not lost in an elementary setting. The atmosphere provides a safer and more professional atmosphere for all members of the learning community as it allows for teachers and staff to focus on programs and instruction which are age appropriate. Funds are focused on one campus so materials are more plentiful. Early childhood schools allow for better communication among teachers and are easier for elementary administrators as there is one less grade on which to focus.

Negative factors concerning pre-kindergarten schools include not having older primary-level students in the same building serving as role models. Children learn from prescribed curriculums, but they also learn from each other and from older students. Pre-kindergarten students at a separate campus miss the opportunity to participate in special programs and
assemblies at an elementary school. Also, putting four-year olds on a school bus twice each day without the help of older students or parents is scary for such young children. Pre-kindergarten buildings do not allow teachers of older students to see what and how the youngest of students learn. Horizontal teaming, for example all pre-kindergarten teachers working and learning together, is a natural consequence of all good schools. However, vertical teaming, pre-kindergarten teachers meeting with kindergarten teachers, is difficult and would need to be deliberately scheduled. This learning configuration causes students and parents to go through an additional orientation when moving to an elementary school.

Implications for Policy Recommendations

This section presents policy recommendations that emerged from this study. These recommendations represent this particular study and are the following implications for future research have been formulated based on the literature review, results, and conclusions of this study.

- Provide schools with the necessary funding to continue implementing and sustaining comprehensive reform at the pre-kindergarten level over several years.
- Provide a comprehensive program for pregnant teens which includes training or providing a healthy environment, child rearing, and literacy skills at home.
- Team with health agencies to provide health services and training.
- Design a short- and long-term staff development program exclusively for pre-kindergarten staff which includes developmentally appropriate practices, literacy instruction, child development, ESL and bilingual strategies, and assessments.
- Maintain necessary support staff including counselors, technology, and media services.
• Develop a comprehensive plan to provide pre-kindergarten to all four-year-olds living in the district.

Recommendations for Future Research

This research study lends itself to several studies that could be proposed.

• How has the quality of the pre-kindergarten program in the Irving Independent School District changed? Through examining the curriculum, level of rigor of the instructional program, learning initiatives, and assessment results, determine if TAKS scores of those who attended pre-kindergarten in ensuing years after this study have improved.

• Conduct a further study of early childhood schools for pre-kindergarten students, examining intended and unintended results, strengths and weaknesses of this school configuration.

• Evidence has shown many pre-kindergarten programs have been successful. Examine which teaching strategies and programs are most beneficial for those students enrolled in pre-kindergarten program.

• A study that examines the social and emotional competencies of the pre-kindergarten child affects their academic success and their long-term educational experiences.

• How does half-day pre-kindergarten experiences compare with full-day pre kindergarten? Most programs are half-day, but Head Start programs are generally full-day. While the qualification criteria for both programs are different, the basic tenets for and beliefs of each program are similar. Examining which length of program is most beneficial should be explored.
• Examine the correlation between the amount of reading that occurring in the homes of pre-kindergarten students and achievement on reading tests such as TAKS.

Summary

Early childhood education continues to gain focus in American education, in both the academia and political arenas. This chapter has presented the summary of previous chapters, discussion of the results, concerns and implications of the study, and recommendations for future practice and study. The data presented in this chapter indicate no statistically significant differences in TAKS reading scores exist between those Spanish-speaking students who attended pre-kindergarten and those who did not. As a result of these findings, and to address the role of pre-kindergarten, it is recommended that districts continue to strengthen their pre-kindergarten program using developmentally appropriate practices and that future research focus on student achievement at this important level of education. A strong pre-kindergarten program, particularly for Spanish-speaking bilingual students, involves all stakeholders—teachers, parents, administrators, teacher preparation programs and communities. It involves specialized instructional strategies which are developmentally appropriate, rich in language experiences, and that address the social, emotional, physical and cognitive domains of students.
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