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An Analysis of Preschool Enrollment and Student Progress Measures Among Primary and
Elementary Students

A dissertation

presented to

the faculty of the Department of Educational Leadership and Policy Analysis

East Tennessee State University

In partial fulfillment

of the requirements for the degree

Doctor of Education

by

Charles David Freeman, Jr.

December 2010

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Keywords: Preschool, Early Childhood, At-Risk, DIBELS, Reading

ABSTRACT

An Analysis of Preschool Enrollment and Student Progress Measures Among Primary and Elementary Students

by

Charles David Freeman, Jr.

The purpose of this study was to determine if a difference in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores exists between students who attended Tennessee's Voluntary Preschool for All program, Head Start, private preschool, or daycare and those who did not attend any type of preschool program for students in grades kindergarten through fifth. The sample consisted of students who attended kindergarten through fifth grade during the 2009-2010 school year in one east Tennessee school system. Data gathered were from Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores obtained during the 2009-2010 school year and a survey. A two-way analysis of variance was used to identify any relationship between variables.

The investigation of the comparison between the type of preschool attended or no preschool and DIBELS scores will provide information to parents considering enrolling a child in one of the many state funded preschools, daycare, or preparing their child at home. The data will also assist with the implementation of new preschool programs and the improvement of existing programs within the public school setting.

Results of this study will be of immediate interest to preschool programs in the surveyed school

system. Other school systems interested in the efficacy of preschool education for increasing student achievement will benefit from the information as well.

Statistical analyses were conducted for DIBELS scores in Letter Naming Fluency (LNF), Phoneme Segmentation Fluency (PSF), and Nonsense Word Fluency for kindergarten students. Statistical analyses were conducted for DIBELS scores in Phoneme Segmentation Fluency (PSF), Nonsense Word Fluency, Oral Reading Fluency (ORF), and Retell Fluency (RF) for first grade students. Statistical analyses were conducted for DIBELS scores Oral Reading Fluency (ORF) and Retelling Fluency (RF) for grades 3, 4, and 5. The results of this study did not support a significant difference among DIBELS scores and the type of preschool experience and gender for students enrolled in Hamblen County schools. The results did support a significant main effect for type of preschool for students enrolled in Hamblen County schools. Students who attended private preschool scored better than students who attended the state program, Head Start, daycare, or did not attend a preschool.

DEDICATION

This study is dedicated:

To David and Elizabeth Doswell for inspiring me to study preschool so their education might be improved by my efforts.

To my mother and father Ella and Kenneth Doswell who have supported my educational endeavors since the beginning. They are my heroes. I could not have gotten this far without them. Mom, I told you when I was 10 years old that I would be a doctor someday. Someday is now.

To my grandmother Mae Windom who taught me you are never too old to learn.

To my sister Amanda Doswell for giving the gift of family.

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I would like to acknowledge the time and efforts of my graduate committee members: Dr. Pam Scott, Dr. Jim Lampley, Dr. Virginia Foley, and Dr. Cecil Blankenship.

I would also like to acknowledge the friendship, support, patience, enthusiasm, and sacrifices of my colleagues Tony Dalton, Donna Rasch, Tina Hale, and Tammy Atkins. A better group of professionals cannot be found.

I also acknowledge the contributions of Janet Dalton. She provided opportunities to flex my leadership muscles. She also provided guidance and leadership as well as listening to the many ideas and complaints that arose during the pursuit of this degree.

Finally, I would like to acknowledge the Director of Schools, Dr. Dale Lynch of Hamblen County, for opening his system to me for data collection.

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CHAPTER 1

INTRODUCTION

Tennessee preschool programs are considered by the National Institute of Early Education Research (2008; 2009) to be among the best in the country. A focus of the Tennessee Voluntary Preschool for All program is to provide early childhood education opportunities to students at-risk of academic failure for little or no cost to the family. The current federal and state definition of at-risk is: any primary or secondary grade student who is at-risk as a result of substance abuse, teen pregnancy, recent migration, disability, limited English proficiency, juvenile delinquency, illiteracy, extreme poverty, or dropping out of school (United States Department of Education, 1992). Tennessee State Representative Susan Lynn (2007) defined academically at-risk as those students who qualify for the free and reduced-price lunch program based on family income.

Since the voluntary preschool program's inception, there has been much disagreement among political leaders as to the effectiveness of the program. Johnson (2009) quoted Tennessee Congressman and Republican Caucus Chairman Glen Casada on the Memphis Daily News website:

Pre-K kids do well from kindergarten through first grade, but then that money we've invested seems to be lost from second grade on. I'm wondering if we shouldn't keep those children at home that one more year and then put that money in K-12. (<http://www.memphisdailynews.com/editorial/Article.aspx?id=45791>)

Opponents to Governor Phil Bredesen's voluntary preschool program say that any progress gained because of preschool is soon lost and, therefore, not worth the high cost of funding. Tennessee spent a total of \$80 million dollars on preschool programs in 2008 according to The National Institute of Early Education Research or NIEER (2008).

Even detractors like Glen Casada had a difficult time convincing educators that preschool has no benefit for children who are at-risk. According to McGee and Richgels (2003), three factors correlated highly to limited performance in literacy. These factors were minority status, speaking limited English, and being a member of a low-income home. Growing up in a low socioeconomic environment was one of the highest predictors of poor academic performance. Students from low socioeconomic families often lack the vocabulary and life experiences vital for school readiness (Marzano, 2004). Few research studies have controlled for family income when looking at the effectiveness of early intervention programs such as the voluntary preschool program. Focusing on the probability of preschool and other early intervention programs as a viable means of closing the achievement gap among at-risk students is a critical first step in intervening, before students forever change their futures by dropping out of school.

Statement of the Problem

The purpose of this study was to determine if a difference in DIBELS scores exists between students who attended Tennessee's Voluntary Preschool for All program, Head Start, private preschool, or daycare and those who did not. Gender was also investigated.

Research Questions

The focus of this study is defined by the following research questions:

Research Question 1: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for kindergarten grade students for Letter Naming Fluency (LNF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 2: Are there differences in DIBELS scores for first grade students for Letter Naming Fluency (LNF) between male and female students?

Research Question 3: Do the differences in DIBELS scores for kindergarten students for Letter Naming Fluency (LNF) among the four types of preschool programs vary as a function of gender?

Research Questions 4: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for kindergarten students for Phoneme Segmentation Fluency (PSF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 5: Are there differences in DIBELS scores for kindergarten students for PSF between male and female students?

Research Question 6: Do the differences in DIBELS scores for kindergarten students for PSF among the five types of preschool programs vary as a function of gender?

Research Questions 7: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for kindergarten students for Nonsense Word Fluency (NSF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 8: Are there differences in DIBELS scores for kindergarten students for NSF between male and female students?

Research Question 9: Do the differences in DIBELS scores for kindergarten students for NSF among the five types of preschool programs vary as a function of gender?

Research Questions 10: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for first grade students for Phoneme Segmentation Fluency (PSF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 11: Are there differences in DIBELS scores for first grade students for PSF between male and female students?

Research Question 12: Do the differences in DIBELS scores for first grade students for PSF among the four types of preschool programs vary as a function of gender?

Research Questions 13: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for first grade students for Nonsense Word Fluency (NSF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 14: Are there differences in DIBELS scores for first grade students for NSF between male and female students?

Research Question 15: Do the differences in DIBELS scores for first grade students for NSF among the five types of preschool programs vary as a function of gender?

Research Question 16: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for first grade students for Oral Reading Fluency (ORF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 17: Are there differences in DIBELS scores for first grade students for ORF between male and female students?

Research Question 18: Do the differences in DIBELS scores for first grade students for ORF among the five types of preschool programs vary as a function of gender?

Research Questions 19: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for first grade students for Retell Fluency (RF) among the five types of

preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 20: Are there differences in DIBELS scores for first grade students for RF between male and female students?

Research Question 21: Do the differences in DIBELS scores for first grade students for RF among the five types of preschool programs vary as a function of gender?

Research Question 22: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for second grade students for Oral Reading Fluency (ORF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 23: Are there differences in DIBELS scores for second grade students for ORF between male and female students?

Research Question 24: Do the differences in DIBELS scores for second grade students for ORF among the five types of preschool programs vary as a function of gender?

Research Questions 25: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for second grade students for Retell Fluency (RF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 26: Are there differences in DIBELS scores for second grade students for RF between male and female students?

Research Question 27: Do the differences in DIBELS scores for second grade students for RF among the five types of preschool programs vary as a function of gender?

Research Question 28: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for third grade students for Oral Reading Fluency (ORF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 29: Are there differences in DIBELS scores for third grade students for ORF between male and female students?

Research Question 30: Do the differences in DIBELS scores for third grade students for ORF among the five types of preschool programs vary as a function of gender?

Research Questions 31: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for third grade students for Retell Fluency (RF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 32: Are there differences in DIBELS scores for third grade students for RF between male and female students?

Research Question 33: Do the differences in DIBELS scores for third grade students for RF among the five types of preschool programs vary as a function of gender?

Research Question 34: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for fourth grade students for Oral Reading Fluency (ORF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 35: Are there differences in DIBELS scores for fourth grade students for ORF between male and female students?

Research Question 36: Do the differences in DIBELS scores for fourth grade students for ORF among the five types of preschool programs vary as a function of gender?

Research Questions 37: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for fourth grade students for Retell Fluency (RF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 38: Are there differences in DIBELS scores for fourth grade students for RF between male and female students?

Research Question 39: Do the differences in DIBELS scores for fourth grade students for RF among the five types of preschool programs vary as a function of gender?

Research Question 40: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for fifth grade students for Oral Reading Fluency (ORF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 41: Are there differences in DIBELS scores for fifth grade students for ORF between male and female students?

Research Question 42: Do the differences in DIBELS scores for fifth grade students for ORF among the five types of preschool programs vary as a function of gender?

Research Questions 43: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for fifth grade students for Retell Fluency (RF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 44: Are there differences in DIBELS scores for fifth grade students for RF between male and female students?

Research Question 45: Do the differences in DIBELS scores for fifth grade students for RF among the five types of preschool programs vary as a function of gender?

Significance of the Study

The high rate of unemployment in the United States has led many families to curb expenditures. State residents who are unemployed cannot spend money they do not have. A recent report issued by Johnson, Oliff, and Koulish (2009) of The Center on Budget and Policy Priorities (CBPP) explained how a lack of spending translated to less income for state governments that rely on sales tax to fund initiatives such as preschool.

With tax revenue declining as a result of the recession and budget reserves largely drained, the vast majority of states are making spending cuts that hurt families and reduce necessary services. These cuts, in turn, will make the recession worse because families and businesses have less to spend in their local economies. (<http://www.cbpp.org/cms/?fa=view&id=1214>)

The CBPP report also described how many state governments, including Tennessee, elected to eliminate programs in the areas of public health, elderly and disability services, K-12 education, higher education, and in the state workforce as a means of trimming their budgets to prepare for looming fiscal shortfalls. State-funded preschool was one area that has led to much debate and countless threats of dissolution from lawmakers. Lawmakers cited previous research studies such as the Perry Preschool Project of 1962 (Schweinhart, 1994, 2002) and the work of Ramey and Ramey (2004) to support arguments against funding preschool initiatives. The most common claim was that any effects that preschool may have in the early years of education fade by the end of second grade (Johnson, 2009). This limited view of the successes of preschool programs has been somewhat twisted to justify the proposed cuts and fails to account for other

positive developments that occur. Based on his work with the Perry Preschool Project, Schweinhart (1994, 2005) posited that preschool participation does have positive and lasting effects on one's quality of life in later years.

In a statement that is appropriate for the state of the economy, Ramey and Ramey (2004) also weighed in on the debate.

In times of limited economic resources and many demands on states, it is important that these findings be considered when deciding whether to provide universal free preschool education or whether to selectively invest in programs that reach those who truly are high risk and who will likely demonstrate measurable gains. Our position is that universal pre-K is highly desirable. (p. 484)

The overlooked or underappreciated results of longitudinal research studies such as those of The Perry Preschool Project (Schweinhart, 1994) and the Rameys (2004) suggested that more research be conducted to support preschool participation as a preventative for school failure.

Definitions of Terms

1. *At-Risk* - A student who is likely to fail at school (United States Department of Education, 1992).
2. *The National Center for Educational Statistics* - The National Center for Education Statistics (NCES) is the primary federal entity for collecting and analyzing data related to education in the U.S. and other nations. NCES is located within the U.S. Department of Education and the Institute of Education Sciences (<http://nces.ed.gov/about/>).
3. *National Assessment of Educational Progress (NAEP)* - The National Assessment of Educational Progress is the only national representative and continuing assessment of what America's know and can do in various subject areas (<http://nces.ed.gov/nationalreportcard/about>).
4. *National Institute for Early Education Research (NIEER)* - The National Institute for

Early Education Research is an organization that supports early childhood education initiatives by providing objective, nonpartisan information based on research (National Institute for Early Education Research, 2009).

5. *The National Education Longitudinal Study (NELS: 88)* - A research study that can be used for policy-relevant research about educational processes and outcomes, for example: student learning; early and late predictors of dropping out; and school effects on students' access to programs and equal opportunity to learn (<http://nces.ed.gov/surveys/NELS88/>).
6. *Tennessee Voluntary Preschool for All Program* - An academic program open to all 4 year olds in the state of Tennessee with priority given to struggling students from low-income families (Tennessee Department of Education, 2008).
7. *Standardized Tests* - A test that uses uniform procedures for administration and scoring to ensure that results from different people are comparable (The U. S. Congress, Office of Technology Assessment, 1992).
8. *Dynamic Indicators of Basic Early Literacy Skills (DIBELS)* - The Dynamic Indicators of Basic Early Literacy (DIBELS) are brief but powerful measures of the critical skills that underlie early reading success (Moats, Good, & Kaminski, 2003).

Limitations and Delimitations

This study was delimited to the following characteristics. The population consisted of students enrolled in kindergarten through fifth grades during the 2008-2009 school year who attended an elementary school in Hamblen County. The study was also limited by a 35% return rate on the surveys.

Overview of the Study

This study was quantitative in nature and divided into five chapters. The introduction, a statement of the problem, the research questions, explanation of the significance of the study, useful definitions, and the delimitations of the study were provided in Chapter 1. Chapter 2 included a review of the literature related to the study and covered the following information: (a) a historical perspective of preschool and early childhood education; (b) the definition, characteristics, and predictors of school failure, (c) the effectiveness of early childhood programs; (d) the types of early childhood education available to parents in the target county and applicable statistics; (e) standardized testing; and (f) a summation of the information. The research methodology was outlined in Chapter 3. A description of the research design, the sample, student achievement measures, information about data collection, and the analyses used are also provided. The analyses of the data and a summation of the findings were presented in Chapter 4. Finally, Chapter 5 provided a summary of the study, the findings, and recommendations for further investigation.

CHAPTER 2

REVIEW OF THE RELATED LITERATURE

This chapter includes a review of the literature relevant to early childhood education and achievement. The chapter is divided into five sections: (a) a historical perspective; (b) the definition, characteristics, and predictors of at-risk students; (c) the effectiveness of early childhood programs; (d) a review of standardized testing; and (e) a summary.

Historical Perspective

From its inception early childhood education has been a two-tiered system: Daycare for the poor and preschool for the wealthy. The advent of early childhood education can be traced as far back as 17th century Europe. In the years that followed early childhood education took many forms including the charity school, the infant school, day nurseries, Head Start, private preschool, and most recently the universal preschool (Cahan, 1989; Kamerman, 2006; Vinovskis, 1993). Any historical perspective of early childhood education considered the philosophical, psychological, and educational attitudes of society at the time. The historical perspective presented here was not exhaustive and ignores many important contributions and influences on early childhood education. Instead, a chronological explanation of the major developments that have led to the creation of Tennessee's voluntary preschool program is provided. The purpose of this section was to illuminate the historical influences on early childhood education that persist today. A particular emphasis was placed on the education of the poor as befits the scope of this study.

The Infant Schools

The first efforts by a community to care for very young children began in England in 1698 (Cahan, 1989; Kamerman, 2006). The upper classes and clergy perceived a decay of

religious values attributed to a lack of education among the poor. The focus of early childhood education during this time was not on academic enrichment. Religious schools were created to teach the common religious and social values of the time, thereby ensuring the longevity of the church.

Eventually attitudes and beliefs moved from religious concerns to meeting the basic physical needs of the very young. A French Lutheran pastor, Johann Friedrich Oberlin, was credited with opening the first infant school in the early 1800s (Cahan, 1989). Cahan (1989) and Vinovskis (1993) also described the work of Scotsman Robert Owen, a businessman who lived during the Industrial Revolution. Owen was concerned that unattended children were being negatively influenced by their peers while mothers were working. He also argued that poor parents were incapable of raising children to contribute positively to society.

The infant school movement of the 1800s was a direct result of social changes caused by the Industrial Revolution (Cahan, 1989; Kamerman, 2006). The growing population of Europe changed from a primarily rural and agrarian culture to one of urban manufacturing. The enormous demand for labor meant mothers and able children went to work in factories. Infants and very young children were often neglected, resulting in an increase in the mortality rate of young children.

A public outcry for social reform resulted in the formation of the Infant School Society to care for the very young during the day while their mothers worked (Cahan, 1989). Character education for the very young was viewed as a means for children to rise out of poverty, thereby preventing crime and delinquency. Cahan (1989) reported that it was around this same time that society began to recognize the plasticity and educability of young children.

The first infant school in the United States opened in Boston, Massachusetts in 1828

(Cahan, 1989; Kamerman, 2006). Just as in England, the belief that poor, uneducated parents were unable to properly socialize their children became popular in the United States. The character development curriculum of the infant school was viewed as an alternative for meeting this need. Over time infant schools began to include academic enrichment as part of the curriculum. The wealthy recognized the importance of early enrichment and demanded that programs be provided for their own children (Cahan, 1989). The popularity of infant schools grew. Schools soon opened in New York City and Philadelphia. By 1840 approximately 40% of preschool aged children in the state of Massachusetts were enrolled in infant schools (Vinovskis, 1993). Despite its popularity the infant school movement did not last very long in the United States. Amariah Brigham's book, *Remarks on the Influence of Mental Excitement upon Health* (cited in Cahan, 1983; cited in Vinovskis, 1993) argued that schooling for preschool aged children could be physically and mentally harmful. Vinovskis (1993) identified three reasons for the ultimate dissolution of the infant school movement. First, attitudes among the affluent regarding the education and socialization of young children became focused on the family. Cahan (1989), Kamerman (2006), and Vinovskis (1993) posited that most Americans viewed the family as the best source for the care and socialization of the very young. Mothers who were forced to work outside the home left the factories and returned to their homes to care for their children. The second reason for the decline in popularity of the infant school was emphasis on the need for simultaneous mental and physical development of young children (Vinovskis, 1993). The cultivation of the mind was equally important as caring for the body. Finally, the public school systems wanted very young children out of their classrooms because the responsibility and cost were too great (Vinovskis, 1993). Poor families continued to struggle to meet the needs of their children. The Day Nursery movement developed to care for the children of these

families.

The Day Nursery

The day nursery concept originated in France in 1844 (Cahan, 1989). The day nursery or crèche as it was called cared for young children between the ages of 6 months and 6 years from poor working families. The decline of the infant school movement resulted in the institutionalization of very young children in almshouses and other organizations that removed them from the home for extended periods of time. The *Encyclopedia of Adoption* defined almshouses as institutions designed in the 1800s to house poor children, adults, the elderly, and the mentally ill, generally with no distinctions made between these groups in terms of services (Adamec & Peirce, 2000). The authors explained that poor families were unable to meet the needs of their children while working long hours for very little pay. Almshouses offered a place for these children to be cared for in the absence of other caregivers and were closed when reports of poor sanitation became public. Charitable organizations responded to the vast number of children being removed from their families by opening day nurseries to care for the basic needs such as the cleanliness and nutrition of children. Rose (2009) described the goals and purpose of the day nurseries.

Charitable day nurseries, which were established in many American cities around the turn of the century to serve poor mothers who needed to work outside the home, also aimed to reform families as well as children. Founders hoped that through contact with the nursery, mothers would learn better ways of caring for their children and homes, and American families would become Americanized. (p. 224)

The ultimate goal of the day nursery movement was to keep the family intact and prevent the institutionalization of children (Cahan, 1989). Rose (2009) explains that family reform was accomplished through mothers' clubs. The mothers of the enrolled children would attend social events, crafting opportunities, and lectures given by service providers including doctors and day

school personnel.

The first day nursery in the United States opened in New York City in 1854. In the early part of the 20th century the day nurseries began to offer education programs as well as job-hunting assistance to unemployed parents (Cahan, 1989). The rise of the social welfare system in the United States and attitudes toward familial responsibility for child-rearing influenced the day nursery's lack of popularity after the 1920s (Cahan, 1989; Kamerman, 2006).

The Nursery School

In 1905 the Board of Education of the United Kingdom acted on the recommendation of government-funded school inspectors to established nursery schools for children under the age of 5 (Brehony, 2009). The Board of Education concluded that children from poor families living in slum areas had the greatest need. The nursery schools were located in those areas where the affected students were in poor health and lacked the basic nutrition required for physical development. The Board of Education also concluded that children from wealthy homes should be excluded from the nursery schools because they were being raised correctly and did not require the social and medical services offered by the nursery schools. The Education Act of 1918 provided funding to local education agencies for the establishment and operation of nursery schools in exchange for the privilege of conducting inspections of the programs (Brehony, 2009). Funding for the building and operation of nursery schools was also provided by colleges and universities through monetary donations from the Astors, Henry Ford, Julius Rosenwald, and other wealthy philanthropists of the time (Brehony, 2009).

Nursery schools, unlike day nurseries, were guided by a trained teacher (Cahan, 1989). The teacher offered parenting advice on rearing children to become emotionally, socially, physically, and psychologically healthy (Cahan, 1989). Rose (2009) explained that many nursery

school teachers spent half of their day teaching and the other half visiting families to ensure that the skills and content being taught in school were being reinforced in the home. The Board of Education of the United Kingdom argued that services provided by nursery schools were effective only if they were being continued after school hours (Brehony, 2009).

Nursery schools in the 1920s came to resemble what is now considered preschool. This renewed emphasis on education and development became so popular that day nurseries unsuccessfully tried to emulate nursery schools (Cahan, 1989; Kamerman, 2006). Nursery schools began to emphasize the academic and social enrichment of children through interactions with their peers (Cahan, 1989). Children between the ages of 2 and 4 years were the most common attendees. The attitude of the wealthy toward preschool education began to change as many parents began to focus on the psychological development of children in addition to their basic physical needs (Brehony, 2009). Wealthy parents viewed raising children to be psychologically healthy as complex and difficult. Private nursery schools were formed to meet the demand for institutions that could provide for the social and psychological needs of the children from affluent families. Private nursery schools were fee-based rendering them beyond the means of the poor. Only the upper and middle classes could afford to send their children (Brehony, 2009).

The conflict between the attitude of the wealthy and the needs of the poor was the beginning of the two-tiered system of early childhood education that persists today. In the book *Savage Inequalities* author Jonathan Kozol (1991) posited that the middle and upper classes maintain tight control over sources of wealth and opportunity. The classes were open to sharing certain social services but were opposed to sharing the wealth and opportunities that would equalize education and eliminate class distinctions altogether. Rose (2009) provided additional

information to support Kozol's conclusions.

A different type of parent education marked private nursery schools, which served mostly middle- and upper-class children in the 1920s. Rather than worrying about mothers' physical care of children and their housekeeping skills, the nursery schools sought to guide mothers in the complex realm of children's psychological and social development...Parent education in nursery schools focused on providing information about child development and psychology as well as working individually with mothers to improve their parenting. (p. 225)

The public nursery school focused on educating parents in the correct way to meet the basic needs of their children. The private nursery school regarded more affluent parents as capable of meeting these needs and emphasized instead the mental and social development of children.

Project Head Start was the contemporary equivalent of the day nursery. Other programs both private and public are fee-based making them accessible only to those families that can afford them (O'Brien, 1993). The Head Start program is described in detail later in this review.

Cahan (1989) provided evidence that universities that provided funds for the nursery had the added benefit of using the schools as training facilities for students in education. The academic foundation of the movement added a new professionalism to teaching in general.

Emergency Nursery Schools

A report from the University of Washington (2009) provided a brief history of emergency relief efforts in the United States following the economic crash of 1929. Early in his Presidency Franklin Roosevelt proposed the Federal Emergency Relief Administration (FERA) of 1933. The goals of FERA were to bring about adequate relief to suffering families, provide work for employable adults, and diversify relief programs. The Emergency Work Relief Program was one such program that targeted out of work teachers. The Emergency Education Program was a product of the Emergency Work Relief Program. In 1933 the federal government created

emergency nursery schools to provide work for unemployed teachers and other service providers. In addition to providing work for families the purpose of the schools was to combat negative physical and psychological effects of the Great Depression. The program was available to children between the ages of 2 and 5 years inclusive from unemployed families. Some schools offered parent education programs. According to Cahan (1989) teachers were required to make home visits to ensure the services that were being provided by the school were carrying over to home life as well. Stoddard (1934, p. 194) reported that “[emergency nursery schools had] accomplished a great deal in improving the nutrition, health supervision, and medical service of the children enrolled.” The decline of the emergency nursery school was precipitated by (a) the narrowness in scope of the services provided, (b) the inequity of quality among schools, (c) the limited availability of schools and services, (d) ambivalent attitudes of the wealthy towards the poor and social welfare programs, and (e) a decrease in unemployment brought about by the beginning of World War II (Cahan, 1989; Kamerman, 2006).

Community Act Schools

The conflict in Europe and Asia during World War II resulted in 16.1 million American men leaving home to fight (Hull, 2006). Many women became the sole providers for the family and most worked in defense-related jobs (Cahan, 1989). Herrick and Stuart (2005) describe the situation in the book *Encyclopedia of Social Welfare History in the United States*.

The massive entry of women in the workforce raised the issue of childcare for working mothers. The federal government responded with the Community (Lanham) Act of 1941, which provided federal funds for the building of child care centers, hospitals, schools, and recreational facilities. (p. 425)

Chafe (1972) reported that among the total female population in the United States over six million women went to work during the war. According to Chafe the decline in emergency nursery schools and other childcare options after the Great Depression increased the rate of

absenteeism and job turnover as the first priority of mothers was the care and well-being of their children. Different forms of neglect also increased significantly during this time. Mothers without options were forced to abandon their children with strangers, lock them up at home, or take them to work (Cahan, 1989). A few industries recognized the need for child-care and supported facilities nearby. These programs were innovative but short lived because they could not support the large numbers of children who needed care. Innovations included an increase in the quality of facilities, longer hours of operation, and higher pay for trained staff members (Chafe, 1972).

The Roosevelt Administration addressed the need for extending child-care through a series of administrative decisions called the Community (Lanham) Acts in 1943 (Rose, 2009). Cahan (1989) explained that congress transferred some of the money that had been used to fund emergency schools to the building and operation of facilities to meet the child-care needs of women working in defense-related industries. The Lanham Acts were not successful in distributing the funds that were appropriated. More than seven different agencies were responsible for awarding funds. Cahan concluded that the excessive paperwork and numerous levels of approval required delayed funding and limited the services provided to only areas that relied on defense production. The inequity and poor quality of services, staff, and facilities were never remedied as federal funding for childcare initiatives ended with World War II. Some, but not all, mothers returned to the home to care for and educate young children (Cahan, 1989; Kamerman, 2006). Poor working mothers still needed to provide care for their children. At the request of various child advocate and parent groups, President Harry S. Truman recommended that the Lanham funds be extended until working mothers were able to find more suitable care for their children (Cahan, 1989).

The prevailing attitude among most Americans was young children were best reared in the home by the mother despite the fact that women continued to work even as the war ended (Cahan, 1989). Day care continued to be funded through social welfare services and state governments. In a direct contradiction of the popular opinion, the emphasis of these programs was to provide young children with appropriate care while the mother looked for work thereby reducing the strain in the welfare system. Nursery Schools continued to focus on the development of the children of middle and affluent families (Cahan, 1989; Kamerman, 2006; Rose, 2009).

Head Start

Dramatic changes began to occur in the national attitude toward childcare with the publication of works by Benjamin Bloom. Bloom (1964) provided empirical evidence that children had developed 50% of their cognitive abilities by the age of 4. There was a period of rapid growth that occurs during early childhood. As children age this period of growth begins to slow and finally reaches a plateau. Bloom also concluded “early childhood education can profoundly affect children’s general learning pattern” (p. 110). Bloom’s research showed that verbal ability, general intelligence, and school achievement were the areas in which the pattern of rapid development was the most pronounced.

The work of Bloom influenced public opinion about the education of young children. Politicians began to acknowledge the need for social reforms to combat juvenile delinquency resulting from poverty. Presidents John F. Kennedy and Lyndon B. Johnson regarded early childhood education as a major weapon in the war against poverty (Cahan, 1989). President Lyndon Johnson officially declared war on poverty in the 1964 State of the Union Address presented to the United States Congress.

Unfortunately, many Americans live on the outskirts of hope—some because of their poverty, and some because of their color, and all too many because of both. Our task is to help replace their despair with opportunity. This administration today, here and now, declares unconditional war on poverty in America. I urge this Congress and all Americans to join with me in that effort. It will not be a short or easy struggle, no single weapon or strategy will suffice, but we shall not rest until that war is won. The richest Nation on earth can afford to win it. We cannot afford to lose it. One thousand dollars invested in salvaging an unemployable youth today can return \$40,000 or more in his lifetime. Poverty is a national problem, requiring improved national organization and support. But this attack, to be effective, must also be organized at the State and the local level and must be supported and directed by State and local efforts. For the war against poverty will not be won here in Washington. It must be won in the field, in every private home, in every public office, from the courthouse to the White House. (Johnson, 1964)

According to Cahan the educated populace began to recognize that poor children lacked the same quality and quantity of opportunities and life experiences that characterized children from wealthier homes. The call to provide poor children with the same opportunities persists today in the work of Robert Marzano (2004). The Office of Economic Opportunity (OEO) was established by the Economic Opportunity Act (EOA) of 1964 (PL88-452), a federal initiative with the goal of equalizing opportunities through programs such as Job Corp, Adult Basic Education, Foster Grandparents, summer youth programs, and over a thousand others (Garson, 2009).

Cahan (1989) and Rose (2009) postulated that Project Head Start was the result of recommendations to the Office of Economic Opportunity (OEO) by doctors, psychologists, educators, and researchers. These groups saw a need to narrow the opportunity gap between the different socioeconomic classes (Cahan, 1983; Rose, 2009).

Vinovskis (1993) provided a historical account of Project Head Start. The program began as an 8-week summer program for disadvantaged children between the ages of 3 and 5 years inclusive. It initially focused on the 300 poorest counties in the United States. Ninety percent of

the applicants had to meet the poverty guidelines established by the OEO. Interest in the program grew and by 1972 Head Start was a year-round program. The program's funding was insufficient to meet the demand and many qualifying applicants were turned away. Project Head Start was unique among early childhood education attempts in that it combined all of the services that were addressed by earlier efforts into one program (Rose, 2009). Educational, health, nutrition, social, and psychological services are provided with no one service receiving a greater emphasis than another. Most notably the program encouraged parent involvement by hiring and training the parents as teachers, aides, cooks, and drivers (Rose, 2009). Ninety percent of the funding for Head Start originates with the federal government (Vinovskis, 1993). To date Project Head Start has served over 22 million children and their families (Pennsylvania Head Start Association, 2009).

Universal Preschool

Georgia became the first state to fund a universal preschool program in 1993 (Williams, 2006). The program was funded by income from the state's lottery program. The state partnered with public schools, private and nonprofit preschool programs, and Head Start agencies to ensure that programs were available for all 4 year olds who desired to attend. Eighty percent of eligible children were enrolled in universal preschool programs as of 2008 (Democratic Leadership Council, 2008). Oklahoma followed Georgia's example in 1998. Universal preschool in the state of Oklahoma is a part of the public school system (Williams, 2006).

Governor Phil Bredesen of Tennessee outlined his plan for voluntary preschool in January 2005. The governor's plan is available to all 4 year olds in the state of Tennessee with priority to children from low-income families. There is no charge to parents for the services, and participation is not compulsory. Funding came from the state of Tennessee. Individual districts

were expected to match state funds based on their ability to pay (Tennessee's Voluntary Pre-Kindergarten Program, 2005). The state's website for the Pre-Kindergarten program reports that 934 classes are serving over 18,000 children. Ninety-four of the state's 95 counties and 133 of the 135 school systems were participating in the program (Tennessee Department of Education, 2008). The program has received accolades from the National Institute for Early Education Research (2009) on the quality of the program.

Summary

The history of early childhood education has been driven primarily by public opinion and societal needs. The prevailing opinion among Americans has been that the mother is the first and best caregiver and teacher for very young children. Only during times of great national crisis such as the Great Depression, World Wars I and II, and the War on Poverty has this opinion been ignored in the interest of the national good. The earliest efforts at providing early childhood education outside the home were mainly for the poor and focused only on the most basic needs of children. The nursery school movement emerged to provide educational opportunities for middle and upper class families. This dichotomous childcare structure has persisted until the present. Only recently have Americans begun to recognize the important role that early childhood education plays in the cognitive development of very young children. Funding efforts have been multifaceted, yet the federal and state governments have been the primary sources and these efforts have been sporadic at best. Despite the research to suggest that early childhood education is important, there has never been a formal commitment from the federal government (Beatty, 2004). Table 1 summarizes the approximate chronology of early childhood education including the ages of enrollment, country of origin, and funding sources.

Table 1.

A Chronology of Early Childhood Education

Date	Movement	Ages of Enrollment	Country of	Funding Sources
1767	Infant Schools	2 to 4 years inclusive	Germany	Philanthropy
1844	Day Nursery	6 months to 6 years inclusive	France	Charities
1840s	Nursery Schools	2 to 4 years inclusive	United States	Universities, Grants, Philanthropy
1933	Emergency	2 to 5 years inclusive	United States	Federal Government
1943	Lanham Act Childcare Centers	2 to 4 years inclusive	United States	Federal Government (Lanham Acts)
1965	Project Head Start	3 to 4 years inclusive	United States	Federal Government
1993	Universal Preschool	4 years only	United States	State Government
2005	Tennessee Voluntary Pre- Kindergarten	4 years only	United States	State and Local Governments

Definition, Characteristics, and Predictors of At-Risk Students

Definition of At-Risk

According to Schargel, Thacker, and Bell (2007) “before we can explore the ways effective school leaders address the needs of at-risk learners, we must clearly define what at risk means and what factors put a student at-risk” (p. 15). This task was not an easy one to accomplish because multiple definitions exist depending on the researcher, the study, or the local education agency.

The United States Department of Education (1992) defined at-risk as “a student who is likely to fail at school.” Students who ultimately drop out of school are considered to have failed at school. The United States Department of Education (1992) conducted the National Longitudinal Study of 1988 or NELS:88 to provide a definition of “at-risk” to help identify and assist students before they drop out of high school. The study also considered students to be in danger of failure if they lacked proficiency in basic mathematics and reading skills in the eighth grade.

The federal and state definition of at-risk is any primary or secondary grade student who is at-risk as a result of substance abuse, teen pregnancy, recent migration, disability, limited English proficiency, juvenile delinquency, illiteracy, extreme poverty, or dropping out of school (United States Department of Education, 1992). Tennessee State Representative Susan Lynn (2007) stated in her blog on Tennessee’s education plan that academically at-risk is defined as those students who qualify for the free and reduced-price lunch program based on family income.

At-Risk Factors

In the book *From At-Risk to Academic Excellence* Schargel et al. (2007) identified two broad areas in a student’s experience that can influence the decision to drop out of school or perform poorly in academic situations: individual factors and school factors. The individual factors were those areas specific to the student and cannot be directly addressed or controlled by the school. As explained in detail below, schools had some control over other variables that predict school failure. These two primary headings – individual and school factors – were used to classify the specific characteristics for failure found in the research.

Prior research in the area of academically at-risk students provided a list of seven

characteristics that can potentially be used to predict which students will most likely drop out before graduating from high school (Britt et al., 2006; Fairbrother, 2008; Harvest, 2008; Zapf, 2008). The individual factors were (a) demographic characteristics, (b) parent and family involvement, (c) academic history, (d) behavioral factors, and (e) school mobility. The school factors were teacher perceptions and school characteristics.

Individual Factors

The National Center for Educational Statistics (2009) or NECS examined the demographics of socioeconomic status, race or ethnicity, and gender and how they related to a student's at-risk status. The national average reading scale score for all fourth grade students in 2009 was 221 out of 500. The average scale score for the same group in the same year for the state of Tennessee was 217. The NECS reported a significant difference of four points between the nation and the state. The average reading score among fourth grade males across the nation in 2009 was 218. The average score for fourth grade females was significantly higher at 224. The average scale score for males in the state of Tennessee was 214. Females scored an average of 220. Females at both the state and national levels scored significantly higher than their male peers. A significant difference also existed between the national and state levels. The average scale score for all fourth grade students eligible for the National School Lunch Program was 205. A similar score of 205 was found for the students at the state level. At the national level a significant deficit of 26 scale points separated fourth grade students eligible for the National School Lunch program from those that were not eligible. Fourth graders participating in the National School Lunch program in the state of Tennessee also scored significantly lower than their ineligible peers.

The data gathered from the National Center for Educational Statistics (2009) also showed

significant differences in the average scale score for reading among ethnic groups. Across the nation white students in fourth grade scored an average 230 while black and Hispanic students had an average scale score of 205, a significant difference of 25 points. In the state of Tennessee, white fourth graders scored an average of 224, black students scored an average of 197, and the average score for Hispanic students was slightly higher at 202. The difference between the national and state levels was found to be significant for white and black students but not for Hispanic students. At both levels, the scale scores for white students were significantly better than blacks or Hispanics. The difference between the scores of blacks and Hispanics was not significant. The average scale score for white male fourth grade students eligible for the National Lunch Program was 212 at both the national and state levels. The national average scale score for white females eligible for the National Lunch Program was 218. The state average for the same group was 216. Black males earned a national average scale score of 195 and a significantly lesser state average of 187. The national average scale score for fourth grade black females eligible for the National School Lunch program was 205. The state of Tennessee was significantly lower at 199 for the same group. Hispanic male students eligible for the National School Lunch Program had a national average scale score of 198 while female students earned an average of 203. The reporting standards were not met for this group in the state of Tennessee; therefore, no comparison exists at this time. For males qualifying for free and reduced meals, there was a significant difference between the three ethnic (white, black, and Hispanic) groups and white males who did not qualify. No significant difference existed between eligible and ineligible black or Hispanic students in 2009. White fourth grade females eligible for the National School Lunch Program scored a national average of 218 out of 500. This number is significantly lower than the 238 averaged by white females and the 222 of Hispanic females

ineligible for free or reduced-price lunches. The difference between white females eligible for the program and black females (220) who were not eligible was not significant. Hispanic females on average scored significantly better than black females.

The data gathered from the National Center of Educational Statistics (2009) suggested that students who qualified for the National School Lunch Program were at-risk of school failure. The average scale scores for both gender and ethnicity were in most cases significantly different among the students who were eligible and the students who were not eligible. The lower than average scores implied that students from low-income homes were achieving at a far slower pace than their peers from middle and upper class homes. Compared to their white peers the average national and state scale scores for blacks and Hispanics were dangerously low and need to be addressed by policy makers, educators, community leaders, and parents.

Schargel et al. (2007) provided one plausible explanation for the low performance and high dropout rate among of minorities.

When children first come to school, their values essentially reflect the culture in their homes. If that differs from the school's culture, conflict may arise; a child may be punished or ridiculed for behaviors that parents value. Such situations marginalize the child's self-worth and tend to alienate the student from school, compromising performance. (Schargel et al., 2007, p. 16)

The family did have a significant influence on the academic success of their children. Students were more likely to experience problems if there is a lack of parental support in the home. Parental support and involvement can come in many forms (Britt et al., 2006). Schargel et al. (2007) concluded that children whose parents consistently set high standards work harder and do better in school. Results from the National Education Longitudinal Study of 1988 or NELS:88 conducted by the United States Department of Education (1992) supported this conclusion. Students were two to three times more likely to be nonproficient in mathematics and

reading if their parents did not expect them to get a high school diploma. The odds of a similar student dropping out were 13 times greater than a student who is expected to finish high school. The percentage of students likely to experience failure generally decreased as parental expectation increased. Britt et al. (2006) state, “a loving, supportive, and disciplined home environment is a critical aspect of school success and social mental health” (p. 4).

The quantity and quality of support that a student receives may be based on the educational experiences of the parents and other family members. The United States Department of Education (1992) found that students were more likely to lack basic proficiency in mathematics and reading if a parent or sibling dropped out of school. The odds of school failure increased as the number of family members who dropped out increased. A student was twice as likely to drop out of school before graduation if two or more family members had done so.

Students from single-parent homes were more likely to experience academic difficulties than children from two-parent homes (Britt et al., 2006; Schargel et al., 2007). The United States Department of Education (1992) reported that children who lived with a single parent were 35% more likely to lack basic mathematical skills, 24% more likely to lack basic reading skills, and twice as likely to drop out of school. Schargel et al. (2007) linked single parenting to poverty. “Families headed by a single parent are approximately five times more likely to live in poverty than families headed by two parents (Schargel et al., 2007, p. 17).

A student’s academic history has been identified as a predictive factor for school failure and includes achievement, homework habits, retentions, and attendance habits. Low achievement was the result of boredom and a lack of relevance (Britt et al., 2006). Students became disinterested in school when the curriculum has nothing to do with their lives. Younger students misbehaved, while older students lost interest in school and dropped out as soon as they were

able. Underperforming students were often disciplined harshly for misbehavior or not completing assignments. They felt like they were held to a double standard compared to other students and lack a voice in the daily routines of the school. Schargel et al. (2007) attributed low achievement to a feeling of alienation from school resulting in the desire to drop out.

Among the eighth graders studied during the National Education Longitudinal Study of 1988, the United State Department of Education (1992) reported a significantly higher risk for school failure for those students making grades below a C in mathematics and reading. The potential risk increased as achievement levels decreased. Similar results were reported for students repeating a grade level. The damage was significant but less dramatic if retention occurred during the span from kindergarten to grade 4. Students retained in grades 5 through 8 were twice as likely to perform poorly in mathematics and reading. The same students were six times more likely to drop out of school before graduation when compared to their peers.

The number of hours per day that students spent engaged in homework activities also contributed to performance on basic skills tests in mathematics and reading (The National Center for Educational Statistics, 2009). Nationally students spending more than 1 hour per day engaged in homework activities received an average reading scale score of 208 out of 500. Students who spend 1 hour each day on homework score significantly better (217). A national average score of 216 was recorded for students spending a half hour or less on homework. Students who received no homework at all performed only slightly lower than students who worked a half hour or less. The data showed a greater drop in scale scores for those students who received homework but did not complete it (193).

Barrington and Hendricks (1989) reported that students identified as at-risk attended school less often than their peers. Fourth grade students with perfect attendance received an

average scale score of 224 out of 500. The average scale score of 220 for the state of Tennessee was significantly lower than the national average. Students missing 1 or 2 days per month earned an average scale score of 221 nationally and a 217 at the state level. An absentee rate of 3 to 4 days per month resulted in a national scale score of 216 and a state score of 210. The difference between the groups was significant. Students missing more than 10 days per month earned an average scale score of 193. The state score was slightly higher at 195 (The National Center for Educational Statistics, 2009). The damage of poor attendance appeared to be somewhat reversible. Chin and Lin (2008) reported an average improvement of between 9.4% and 18% on exam scores for students with improved attendance.

A student's behavior can contribute to school failure. According to Britt et al. (2006):

Because of the fact that students felt they had no say, they rebelled against all the rules and authority in general. Such students had the opinion that they cannot be made to do anything they do not want to do. Authority means nothing to them and there is very little respect for anyone in positions of authority. (p. 3)

Britt et al. (2006) posited that students who were continually told that they are a problem and received poor grades on work they accomplish developed a sense of learned helplessness. They saw their efforts being heavily criticized and come to believe they were not capable of finishing school and drop out. Further reasoning for disruptive behavior was reported by Schargel et al. (2007). The researchers contended that students found little relevance in the curriculum they were being taught and saw no benefit from the effort. A lack of engagement in school activities left time available for misbehaviors. The United States Department of Education (1992) categorized the outcomes of some of these behaviors. Delinquency, truancy, suspension, and expulsion were common among at-risk students. Drug use, alcohol consumption, smoking, and teenage pregnancy were also prevalent in the same sample. According to the results of the NELS: 88,

Student misbehaviors – tardiness, smoking or any misconduct that requires being sent to the office – were all associated with poor student outcomes, even after controlling for SES, race – ethnicity, and sex. For example, in terms of the adjusted odds ratios, students who had been sent to the office once or twice in the previous semester were 82% more likely to perform below the basic math level and 59% more likely to perform below the basic reading level than student who had not been sent to the office. Students who had been sent to the office more than twice in the previous month were more than six and one-half times as likely to drop out as their peers who had never been tardy or been sent to the office. (United States Department of Education, 1992, p. 35)

School mobility has been positively linked to school failure in economically disadvantaged students. Temple and Reynolds (1999) used data from the Chicago Longitudinal Study to determine if achievement is affected by a frequent change in schools between kindergarten and grade seven. The researchers found that the frequency of school movement in a single year negatively influenced student achievement test scores. The more often a student changed schools the lower the student scored on the achievement battery. More than three moves in a single year resulted in an achievement gap in excess of 6 months when compared to students who had not moved at all. Earlier research by The United States Department of Education (1992) supported the results of Temple and Reynolds.

Family mobility, measured by the number of times a student had changed schools, was also associated with poor educational outcomes. Compared with students who had never changed schools, in terms of odds ratios students who had changed schools twice were almost two and one-half times as likely to drop out, those who had changed schools three times were three times as likely, and students who had changed schools four times were four times as likely to drop out. (United States Department of Education, 1992, p. 12)

It should be noted that the National Center for Educational Statistics was gathering data for a follow-up study to the National Education Longitudinal Study of 1988. The study is called the Education Longitudinal Study of 2002 or the ELS. Due to the significant differences in achievement scores among minority groups and students who are at-risk, the data from this study provided more current data for many of the variables addressed in this section of the review of

literature. Only rudimentary data is available for this study. The organization's website provides a deeper explanation of the study and the data collection process. The final round of collection is scheduled for 2012.

School Factors

Schargel et al. (2007) isolated factors promoting school failure that are propagated by school and district policies and behaviors. Teacher perception and the characteristics of the school including the climate and culture of the school, school connectedness, and school safety were all found to be contributing factors to school failure. In the article *Reaching the Fragile Student* author Sue Zapf (2008) described the effects of a school environment that were not inviting to students. According to Zapf (2008) punishing students, judging and grading accomplishments too harshly, excluding students, and betraying or forgetting to build trust between students and teachers all led to a disinviting environment. Many if not all of these experiences were the result of teachers' perceptions of students. Schargel et al. (2007) reported on the importance of school relationships with adults.

Research on teacher attitudes reveals that many view diversity of student backgrounds as a problem rather than an asset; many have negative attitudes about cultures and ethnic groups different from their own. Recognizing that a major facet of school connectedness is the relationships that students form with their teachers, a critical goal of any program to address the needs of the at-risk learner must be to strengthen the connections between teachers and all their students. (p. 21)

Sirota and Bailey (2009) warned that teachers often perceived minority and poor students as slow learners. These perceptions negatively affected the quality of the education minority and poor students received from their teachers. The work of Sirota and Bailey confirmed the findings of the National Education Longitudinal Study (NELS:88) of 1988. Students who were perceived

as being low achievers by their teachers were two and one-half times more likely to demonstrate a lack of ability in mathematics and reading (United States Department of Education, 1992).

Britt et al. (2006) further explained the disassociation between students and teachers as the result of a double standard.

Students consistently complained about the inconsistency of the school rules. They felt there was a double standard as far as they and the teachers were concerned. While they received tardies, several teachers came in late. (p. 3)

A teacher's behavior toward a student determined a student's behavior and achievement.

Students who were perceived by their teacher as being disruptive and inattentive in class were more likely than their peers to perform inadequately on basic skills inventories (United States Department of Education, 1992).

The culture and climate of the school was reported to be determined by its size, urbanicity, composition, problems, academic rigor, safety and security, and teacher engagement (Schargel et al., 2007; United States Department of Education, 1992). The quality and organization of teaching influences a teacher's engagement of the students. Of the characteristics that define a school's culture and climate, The United States Department of Education (1992) reported significant results only for composition, safety, and academic rigor. Students attending schools with heavy minority and low socioeconomic populations were more likely to experience academic problems than their peers in other situations. In schools where safety and security was an issue students had trouble focusing on the basic skills required for school success. Temple and Reynolds (1999) found that students who moved from a school with low academic expectations to one with high expectations experienced increases in achievement, thereby validating the results of the NELS: 88. Students enrolled in schools with high academic expectations were less likely to experience poor educational outcomes than students enrolled in schools with low to

moderate expectations (United States Department of Education, 1992).

Summary

The research was rich with empirical evidence to support both individual and school factors that result in school failure. Longitudinal studies such as the National Education Longitudinal Study (United States Department of Education, 1992) have provided a means to predict school failure and allow for interventions. The numerous studies and copious amounts of data could be distilled into a few significant characteristics. Children from minority families were more likely to experience school failure. Minority populations were usually the poorest because they lacked the same economic opportunities as prevailing races and ethnicities. Students from low socioeconomic backgrounds were also in danger of low performance and dropping out. Students who did not turn in homework, misbehaved at school, or felt disconnected from their school would most likely drop out before reaching graduation. Consequently, schools that eschewed high academic standards and expectations, did not provide a safe environment for learning, and failed to frequently monitor the quality of teaching and the curriculum, were also guilty of perpetrating a disservice to children.

Effectiveness of Preschool Programs

Two groundbreaking longitudinal studies provided most of the data that are currently used to justify funding and policy changes for preschool programs: the Highscope Perry Preschool Project (Schweinhart, 1994, 2002) and the Abecedarian Study or ABC Project (Ramey & Ramey, 2004). Both studies found scientific evidence to support the short- and long-term effects of preschool programs for at-risk youth. The work of these researchers has been distilled by Borman and Hewes (2002) into six principles that characterize the effectiveness of a preschool program: (a) developmental timing, (b) program intensity, (c) direct provision of

learning experiences, (d) program breadth and flexibility, (e) individual differences in program benefits, and (f) environmental maintenance.

According to Borman and Hewes (2002) developmental timing referred to providing interventions to at-risk children during the early stages of life before developmental paths have widened between at-risk children and more advanced students. The reasoning was to keep the achievement gap from developing by providing an intense educational program that is preventive rather than remedial and is unique to the individual needs of the child. The intensity of a program according to Ramey and Ramey (2004) was determined by the frequency of service delivery in terms of hours, days, and weeks. The more often a program met the more intense it was. Low intensity was found to be one reason that many preschool programs fail to produce results similar to those found in the Abecedarian Study.

Seven types of learning experiences that impact early development were identified by Ramey and Ramey (2004) as important to a successful program. First, very young children should be encouraged to explore their environment. Second, adults should mentor their charges in the basic skills. Third, toddlers should be allowed to practice newly learned skills. Fourth, celebrating developmental advances encourages children to continue to grow. Fifth, mistakes must be permitted and disapproval, teasing, and punishment used sparingly and only when appropriate. Sixth, adults should communicate richly and responsively to encourage conversation and vocabulary expansion. Last, a child's behavior should be guided and limited by setting boundaries.

An effective preschool program provides an educational program directly to the children while also providing services to the parents and families of the students. Borman and Hewes (2002) noted that both the Abecedarian Study and the Perry Preschool Project provided auxiliary

services to assist parents in meeting the nutritional and medical needs of the students.

Finally, an effective preschool program requires environmental maintenance (Boreman & Hewes, 2002). According to Schweinhart (2002) there is evidence to suggest that intellectual performance fades over time regardless of early childhood interventions. A system must be in place to ensure that students have support beyond their time in the program.

The Highscope Perry Preschool Project

In his historical account of the Highscope Perry Preschool Project Schweinhart (2002) explained the purpose of the program.

The HighScope Perry Preschool Study, which was initiated in the early 1960s, is now widely regarded as a landmark study establishing the human and financial value of high-quality preschool education. The purpose of the study was to evaluate the HighScope model, in which teachers help children plan, carry out, and review their own educational activities. (Schwienhart, 2002, p. 1)

The Perry Preschool program originated with David Weikart as a means to reduce the number of students referred for special education placement, school failure, and retention. The study included a sample of 123 African-American students from low income families and at risk of school failure. A treatment group received the Highscope Participatory Learning program while the control group received no special instruction (Schweinhart, 2002).

The Perry Preschool study has been positively linked to an increase in intellectual and socio-emotional performance. Seven percent of the students who received the treatment were retained or placed in special education while 38% of those who did not participate in the preschool program were retained or placed in special education (Schweinhart, 2002). While there was some evidence to support a decrease in intellectual performance over time, the Highscope team found a significant difference between the achievement test scores of the treatment group when compared to the control group 9 years after the program was introduced.

The researchers continued to follow the subjects of the study until the age of 40 in order to strengthen the results of the study. Schweinhart (1994) found that subjects exposed to preschool conditions reported job longevity, higher incomes, higher rates of home ownership, and fewer criminal offenses. Schweinhart attributed the high quality and success of the program to the empowerment of the students to choose and guide their education; the parents by inviting them to share in the education process; and the teachers by providing them with the preservice and inservice training required to meet the needs of the children.

The Abecedarian Project

Ramey and Ramey (2004) described the impetus to develop the ABC project:

The prevention of school failure and the promotion of children's cognitive and linguistic development cannot wait until kindergarten or until children show signs of developmental delay. Rather, the commitment to improving K-12 academic achievement must begin by providing children in the pre-K years with a rich array of effective learning opportunities. (p. 473)

Ramey and Ramey (2004) described the program in detail. One hundred eleven children of whom 98% were African-American were placed in two groups. One group received individualized preschool instruction and auxiliary while the other received only the supplemental services. The students were selected from low income homes headed by a single parent. All participants received nutrition, social, and medical services during the study. The program consisted of a full day of instruction 5 days a week for 50 weeks. The education component was based on developmental theory and scientific evidence of how young children learn. The students who received the treatment averaged 14 points higher on intelligence batteries than students who did not receive the program.

Summary

The effectiveness of preschool is debatable. Intellectual gains made as a result of attending preschool appeared to fade over time. However, longitudinal evidence existed supporting a long-term effect on the participants' quality of life.

Standardized Testing

Standardized testing is the primary method for determining student achievement in the grades beyond preschool. The regulations for assessment and accountability were outlined in the 2001 reauthorization of the Elementary and Secondary Education Act. A brief review of the legislation is in order due to its overwhelming importance to student assessment in the United States.

A Nation at Risk, the 1983 study by the National Commission on Excellence in Education, found America's education system lacking in many areas including content, standards, time, and teaching (National Commission on Excellence in Education, 1983). In response to the recommendations of the commission, the *Elementary and Secondary Education Act* of 1965, or ESEA, was reauthorized as the *Improving America's Schools Act* (IASA) of 1994. Combined with the *Goals 2000: Educate America Act* the IASA called for all students to be successful learners by requiring states to adopt content standards, assessments, and an accountability system (Jorgensen & Hoffman, 2003).

The ESEA was again reauthorized in 2002 as the now familiar *No Child Left Behind Act* or NCLB. NCLB focused on reforming four specific areas of education: accountability, local control, parental involvement and choice, and funding scientifically-based programs. The legislation required that states develop and implement assessment systems based on a common set of standards (United States Department of Education, 2004). Schools were expected to make

Adequate Yearly Progress or AYP. According to the Department of Elementary and Secondary Education (2009), Adequate Yearly Progress was defined as set of benchmarks determined by each state to describe the level of progress that students make annually. The benchmarks included measures for proficiency based on standardized students assessments, the number of students required to take the assessments, and attendance or graduation rates. These benchmarks increased gradually over a period of years. The results of the assessments were made public.

Most states administered some type of standardized test annually to determine if students were making Adequate Yearly Progress. A standardized test is one that “uses uniform procedures for administration and scoring in order to ensure the results from different people are comparable” (The U. S. Congress, Office of Technology Assessment, 1992, p. 3). Bond (1996) identified the two major types of standardized tests administered by most school districts. They are norm-referenced tests and criterion-referenced tests. The two differ in purpose, content selection, and scoring. Norm-reference results are used to classify students according to achievement. A norm group is given the assessment before it is administered in the classroom to determine a baseline of average performance data. All students’ scores are then compared to the data from this norm group. A percentile rank score is provided for each student to identify a placement among students in the norm group. Criterion-referenced tests results provide insight into what a student knows or can do with regard to a specific standard. Deno (1985) created an alternative to using a few items to assess a student’s mastery of a standard. Curriculum-based measures or CBMs are assessments that are given at specific times throughout the school year and indicate a student’s progress (Fuchs, 2004). The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) is a commonly used curriculum-based assessment that identifies three levels of student progress in reading: intensive, strategic, and benchmark.

The Dynamic Indicators of Basic Early Literacy or DIBELS track a student's progress in the areas vital to the reading success (Cook, 2003). Armbruster, Lehr, and Osborn (2001) identified these areas in *Put Reading First: The Research Building Blocks for Teaching Children to Read*. They are phonemic awareness, phonics, fluency, vocabulary, and comprehension.

Moats et al. (2003) provide an overview of the DIBELS assessment.

The Dynamic Indicators of Basic Early Literacy (DIBELS) are brief but powerful measures of the critical skills that underlie early reading success. Supported by two decades of sophisticated research, these simple assessments predict how well children are likely to be doing in reading comprehension by the end of third grade. Three or four short tasks at each grade level, K – 5, help teachers locate, monitor, and intervene with at risk students in Kindergarten through fifth grade. (p. 1)

Standardized testing has not been without its critics. Indeed, it seems there is no gray area among researchers with regard to their evidence for or against testing. Anti-testing advocates criticize standardized testing for

- the curriculum is narrowed when non-tested subjects or specific topics within tested subjects are not taught;
- tests are insensitive to minorities and females;
- test questions focus on lower-level thinking skills and the memorization of facts;
- excessive time is spent preparing students for the test instead of engaging them in meaningful instruction;
- the punishments that come from high-stakes testing often lead to a decrease in teacher morale;
- test scores are inaccurate and inflated because teachers teach the items that are on the test; and
- standardized tests are expensive to norm and distribute (Amrein & Berliner, 2002; Bond, 1996; Cizek, 2001; Mitchell, 2006; Phelps, 1999; Popham, 2003, 2004; Yeh, 2005).

The positive characteristics of standardized testing are

- teachers know what is important for students to learn;
- testing provides a level of accountability and motivates teachers to do their best;
- testing motivates students to work harder and learn more;
- testing provides an indication of how well the curricula are taught;
- students have the same opportunity to show what they know;
- teachers have a tool to help them improve their instruction;
- administrators can use results to plan professional development activities;
- parents are provided with clear information about their children;
- parents now have more educational choices for their children;
- accommodations can be made for students with special needs;
- teachers have more knowledge of testing practices; and
- pedagogical expertise is refined (Amrein & Berliner, 2002; Bond, 1996; Cizek, 2001; Mitchell, 2006; Phelps, 1999; Popham, 2003, 2004; Yeh, 2005).

Summary

Standardized testing is the primary method use by states to determine whether or not Adequate Yearly Progress or AYP has been achieved by each school. There is much debate about whether or not standardized testing is conclusive in determining a student's level of performance. The Dynamic Indicators of Basic Early Literacy Skills assessment is one example of a standardized assessment that can be used to determine a student's ability to reach a specific level of proficiency within a set period of time.

Summary

The review of literature included a brief history of early childhood education programs. Historically two different types of preschools have dominated. Government funded programs have served children from the poorest of families. Children from wealthier traditionally attended private preschool and daycare programs. The number and diversity of the programs available at any given point in history was based on the needs and attitudes of the society served.

The effectiveness of preschool remained unclear, but longitudinal studies support positive, long-term outcomes for students who were at risk of school failure. These students included minorities and children from socioeconomically disadvantaged homes.

Federal law required that students and others be assessed annually for progress. Standardized assessments were the primary method for determining if Adequate Yearly Progress or AYP was achieved. The Dynamic Indicators of Basic Early Literacy Skills or DIBELS assessment is a standardized instrument that can be used to predict the outcomes of student performance prior to taking the state-mandated assessment.

CHAPTER 3

RESEARCH METHODOLOGY

The purpose of this study was to determine if there are differences in DIBELS scores for kindergarten through fifth grade students who attended the state-funded Tennessee Voluntary Preschool program, the federally funded Head Start initiative, daycare, private preschool or had no preschool experience. This chapter is organized into the following sections: (a) research design, (b) population, (c) student achievement, (d) data collection, (e) data analysis, and (f) summary.

Research Design

This study was an archival quasi-experimental design using a two-way analysis of variance (ANOVA) to analyze the data in order to determine differences between attendance in state or federally-funded preschool programs, private preschool, daycare, or no preschool experience, gender (male or female), and the students' Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores. The purpose of this study was to determine if a relationship exists between early childhood education programs and successfully preparing students for elementary school (grades kindergarten through five). Such information is vital, for making future decisions regarding preschool funding, structure, and management.

Population

Data were collected for kindergarten through fifth grade students enrolled in 11 primary and elementary schools in one school system. The number of students enrolled in kindergarten through fifth grades in the target school system at the time of the study was 4,848. Eighty-six percent or 4,151 of the students were assessed with the DIBELS during the 2009–2010 school year, to determine their progress. Only data from the final assessment given in May of 2010 were

included in the final analysis. A survey (see Appendix A) was sent to parents of kindergarten through fifth grade students during the 2009–2010 school year. The students whose parents failed to return the completed surveys (see Appendix A) or were not given the DIBELS assessment were excluded from the study. A final sample of 1,541 students was attained.

Student Achievement

The *Administration and Scoring Guide, 6th Edition* (Moats et al., 2003) for The Dynamic Indicators of Basic Early Literacy (DIBELS) describes the frequency and type of test given in each grade level. All DIBELS assessments are given three times – beginning, middle, and end -- during a school year to students in kindergarten through 12th grade. Each district can choose whether or not to purchase and administer the assessments. Kindergarten students are assessed for nonsense word fluency (NWF), phoneme segmentation fluency (PSF), word use fluency (WUF), letter naming fluency (LNF), and initial sound fluency (ISF). Only four of these assessments are used at the end of the school year: (a) nonsense word fluency, (b) phoneme segmentation fluency, (c) word use fluency, and (d) letter naming fluency. Students in first-grade are assessed for letter naming fluency (LNF), word use fluency (WUF), phoneme segmentation fluency (PSF), nonsense word fluency (NWF), oral reading fluency (ORF), and retell fluency (RF). Only phoneme segmentation fluency, word use fluency, nonsense word fluency, oral reading fluency, and retell fluency are assessed at the end of the school year. Grades second through fifth are assessed only in the areas of oral reading fluency (ORF) and retell fluency (RF).

Data Collection

An initial meeting was held with the Director of Schools in the target county. The purpose of the meeting was to introduce myself and familiarize the Director with my plans for the collection of data and how they will be used when the study is completed. The Director

requested that I complete a specific form (See Appendix A) before permission could be granted. The form was completed and submitted to the Director of Schools for consideration on January 26, 2010. Included with the form were a brief description of the study (See Appendix A), a cover letter to the parents being surveyed, a cover letter to the teachers in the target county, and a copy of the survey (See Appendix B). After negotiation on the content of the survey and the design of the study, the director signed the form (See Appendix A). The East Tennessee State University (ETSU) Institutional Review Board (IRB) received the appropriate documents on February 18, 2010. Approval to conduct research was granted by the ETSU Institutional Review Board on April 13, 2010.

Each elementary, primary, and intermediate teacher in the target county received an envelope with 20 surveys (See Appendix B) and a cover letter (See Appendix B) with instructions for distributing and collecting the returned surveys. The surveys were printed in English and Spanish. An initial 20 surveys and cover letters (See Appendix B) were sent to each teacher in the appropriate grade levels. The teacher sent the surveys to the parents of 20 students from each classroom in kindergarten through fifth grade. Teachers were informed that they could request additional surveys from me if they were needed. The purpose of the survey was to collect information about the students' basic demographics including gender, ethnicity, and early preschool experience. The survey required a parent's signature for the student to be included in the study. I requested each student's name in order to match the correct DIBELS data from system records. The surveys were distributed on April 19, 2010, and collected from each school on April 23, 2010 and April 30, 2010. A pizza party was provided to the classroom that had the highest percentage of surveys returned. The teacher of the class was awarded a \$25 gift card from Wal-Mart as compensation for time and effort spent collecting surveys. Students whose

parents did not return the completed survey (See Appendix B) were excluded from the study as were students who did not take the DIBELS at the end of the 2009 school year. Data regarding the grade level, gender, ethnicity, and type of preschool attended in the county were obtained from the completed surveys. Participants were assigned a numerical code for the duration of the study to ensure privacy and discourage the identification of the subjects. All forms of collected data were shredded at the conclusion of the study. No student names were used in this document. The accumulated data were entered into the SPSS software. A two-way ANOVA was conducted to identify any significant differences between variables.

Data Analysis

A two-way analysis of variance (ANOVA) requires each participant to have scores for each of the dependent variables and a quantitative dependent variable (Green & Salkind, 2008). The independent variables included in this study were preschool attendance in a state- (Tennessee Voluntary Preschool Program) or federally funded (Head Start) program, private preschool, daycare, no preschool experience and gender. The dependent variables were the scores (Letter Naming Fluency, Phoneme Segmentation Fluency, Nonsense Word Fluency, Oral Reading Fluency, and Retell Fluency) on the Dynamic Indicators of Basic Early Literacy Skills (DIBELS). These five variables were chosen because they were the scores collected at the end of the school year.

All assessments were not given in all grade levels by design. Kindergarten students were assessed for Letter Naming Fluency (LNF), Phoneme Segmentation Fluency (PSF), and Nonsense Word Fluency (NWF) at the end of the school year. First grade students were assessed for Phoneme Segmentation Fluency (PSF), Nonsense Word Fluency (NWF), Oral Reading

Fluency (ORF), and Retell Fluency (RF). Second through fifth grades inclusive were assessed for Oral Reading Fluency (ORF) and Retell Fluency (RF).

Research Questions and Hypotheses

The study was guided by the following research questions:

Research Question 1: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for kindergarten grade students for Letter Naming Fluency (LNF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 2: Are there differences in DIBELS scores for first grade students for Letter Naming Fluency (LNF) between male and female students?

Research Question 3: Do the differences in DIBELS scores for kindergarten students for Letter Naming Fluency (LNF) among the four types of preschool programs vary as a function of gender?

Ho1: There are no differences in the DIBELS scores of kindergarten students for Letter Naming Fluency (LNF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool).

Ho2: There are no differences in the DIBELS scores of kindergarten students for Letter Naming Fluency (LNF) between male and female students.

Ho3: The DIBELS scores for kindergarten students for Letter Naming Fluency (LNF) among the five types of preschool programs do not vary as a function of gender.

Research Question 4: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for kindergarten students for Phoneme Segmentation Fluency (PSF) among the

five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 5: Are there differences in DIBELS scores for kindergarten students for PSF between male and female students?

Research Question 6: Do the differences in DIBELS scores for kindergarten students for PSF among the five types of preschool programs vary as a function of gender?

Ho4: There are no differences in DIBELS scores for kindergarten students for PSF among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool).

Ho5: There are no differences in DIBELS scores for kindergarten students for PSF between male and female students.

Ho6: The DIBELS scores for kindergarten student for PSF among the five types of preschool programs do not vary as a function of gender.

Research Questions 7: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for kindergarten students for Nonsense Word Fluency (NSF), among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 8: Are there differences in DIBELS scores for kindergarten students for NSF between male and female students?

Research Question 9: Do the differences in DIBELS scores for kindergarten students for NSF among the five types of preschool programs vary as a function of gender?

Ho7: There are no differences in DIBELS scores kindergarten students for NSF among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool).

Ho8: There are no differences in DIBELS scores for kindergarten students for NSF between male and female students.

Ho9: The DIBELS scores for kindergarten students for NSF among the five types of preschool programs do not vary as a function of gender.

Research Questions 10: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for first grade students for Phoneme Segmentation Fluency (PSF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 11: Are there differences in DIBELS scores for first grade students for PSF between male and female students?

Research Question 12: Do the differences in DIBELS scores for first grade students for PSF among the four types of preschool programs vary as a function of gender?

Ho10: There are no differences in DIBELS scores for first grade students for PSF among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool).

Ho11: There are no differences in DIBELS scores for first grade students for PSF between male and female students.

Ho12: The DIBELS scores for first grade students for PSF among the five types of preschool programs do not vary as a function of gender.

Research Questions 13: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for first grade students for Nonsense Word Fluency (NSF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 14: Are there differences in DIBELS scores for first grade students for NSF between male and female students?

Research Question 15: Do the differences in DIBELS scores for first grade students for NSF among the five types of preschool programs vary as a function of gender?

Ho13: There are no differences in kindergarten DIBELS scores second grade students for NSF among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool).

Ho14: There are no differences in DIBELS scores for first grade students for NSF between male and female students.

Ho15: The DIBELS scores for first grade students for NSF among the five types of preschool programs do not vary as a function of gender.

Research Question 16: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for first grade students for Oral Reading Fluency (ORF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 17: Are there differences in DIBELS scores for first grade students for ORF between male and female students?

Research Question 18: Do the differences in DIBELS scores for first grade students for ORF among the five types of preschool programs vary as a function of gender?

Ho16: There are no differences in DIBELS scores first grade students for ORF among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool).

Ho17: There are no differences in DIBELS scores for first grade students for ORF between male and female students.

Ho18: The DIBELS scores for first grade students for ORF among the five types of preschool programs do not vary as a function of gender.

Research Questions 19: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for first grade students for Retell Fluency (RF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 20: Are there differences in DIBELS scores for first grade students for RF between male and female students?

Research Question 21: Do the differences in DIBELS scores for first grade students for RF among the five types of preschool programs vary as a function of gender?

Ho19: There are no differences in DIBELS scores first grade students for RF among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool).

Ho20: There are no differences in DIBELS scores for first grade students for RF between male and female students.

Ho21: The DIBELS scores for first grade students for RF among the five types of preschool programs do not vary as a function of gender.

Research Question 22: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for second grade students for Oral Reading Fluency (ORF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 23: Are there differences in DIBELS scores for second grade students for ORF between male and female students?

Research Question 24: Do the differences in DIBELS scores for second grade students for ORF among the five types of preschool programs vary as a function of gender?

Ho22: There are no differences in DIBELS scores second grade students for ORF among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool).

Ho23: There are no differences in DIBELS scores for second grade students for ORF between male and female students.

Ho24: The DIBELS scores for second grade students for ORF among the five types of preschool programs do not vary as a function of gender.

Research Questions 25: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for second grade students for Retell Fluency (RF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 26: Are there differences in DIBELS scores for second grade students for RF between male and female students?

Research Question 27: Do the differences in DIBELS scores for second grade students for RF among the five types of preschool programs vary as a function of gender?

Ho25: There are no differences in DIBELS scores first grade students for RF among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool).

Ho26: There are no differences in DIBELS scores for first grade students for RF between male and female students.

Ho27: The DIBELS scores for first grade students for RF among the five types of preschool programs do not vary as a function of gender.

Research Question 28: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for third grade students for Oral Reading Fluency (ORF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 29: Are there differences in DIBELS scores for third grade students for ORF between male and female students?

Research Question 30: Do the differences in DIBELS scores for third grade students for ORF among the five types of preschool programs vary as a function of gender?

Ho28: There are no differences in DIBELS scores third grade students for ORF among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool).

Ho29: There are no differences in DIBELS scores for third grade students for ORF between male and female students.

Ho30: The DIBELS scores for third grade students for ORF among the five types of preschool programs do not vary as a function of gender.

Research Questions 31: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for third grade students for Retell Fluency (RF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 32: Are there differences in DIBELS scores for third grade students for RF between male and female students?

Research Question 33: Do the differences in DIBELS scores for third grade students for RF among the five types of preschool programs vary as a function of gender?

Ho31: There are no differences in DIBELS scores third grade students for RF among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool).

Ho32: There are no differences in DIBELS scores for third grade students for RF between male and female students.

Ho33: The DIBELS scores for third grade students for RF among the five types of preschool programs do not vary as a function of gender.

Research Question 34: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for fourth grade students for Oral Reading Fluency (ORF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 35: Are there differences in DIBELS scores for fourth grade students for ORF between male and female students?

Research Question 36: Do the differences in DIBELS scores for fourth grade students for ORF among the five types of preschool programs vary as a function of gender?

Ho34: There are no differences in DIBELS scores fourth grade students for ORF among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool).

Ho35: There are no differences in DIBELS scores for fourth grade students for ORF between male and female students.

Ho36: The DIBELS scores for fourth grade students for ORF among the five types of preschool programs do not vary as a function of gender.

Research Questions 37: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for fourth grade students for Retell Fluency (RF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 38: Are there differences in DIBELS scores for fourth grade students for RF between male and female students?

Research Question 39: Do the differences in DIBELS scores for fourth grade students for RF among the five types of preschool programs vary as a function of gender?

Ho37: There are no differences in DIBELS scores fourth grade students for RF among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool).

Ho38: There are no differences in DIBELS scores for fourth grade students for RF between male and female students.

Ho39: The DIBELS scores for fourth grade students for RF among the five types of preschool programs do not vary as a function of gender.

Research Question 40: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for fifth grade students for Oral Reading Fluency (ORF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 41: Are there differences in DIBELS scores for fifth grade students for ORF between male and female students?

Research Question 42: Do the differences in DIBELS scores for fifth grade students for ORF among the five types of preschool programs vary as a function of gender?

Ho40: There are no differences in DIBELS scores fifth grade students for ORF among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool).

Ho41: There are no differences in DIBELS scores for fifth grade students for ORF between male and female students.

Ho42: The DIBELS scores for fifth grade students for ORF among the five types of preschool programs do not vary as a function of gender.

Research Questions 43: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for fifth grade students for Retell Fluency (RF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 44: Are there differences in DIBELS scores for fifth grade students for RF between male and female students?

Research Question 45: Do the differences in DIBELS scores for fifth grade students for RF among the five types of preschool programs vary as a function of gender?

Ho43: There are no differences in DIBELS scores fifth grade students for RF among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool).

Ho44: There are no differences in DIBELS scores for fifth grade students for RF between male and female students.

Ho45: The DIBELS scores for fifth grade students for RF among the five types of preschool programs do not vary as a function of gender.

Summary

Chapter 3 provided information about the methods, research design, population, data collection procedures, and research questions along with the related null hypotheses. The study is quantitative. Kindergarten through fifth grade students enrolled in one school system in the northern valley of east Tennessee were included in the study. Student DIBELS data were collected from the student assessment records completed by teachers and collected by the local education agency at the end of the school year.

CHAPTER 4

ANALYSIS OF DATA

Chapter 4 described the results of the analysis of the research questions identified in Chapters 1 and 3. This study was conducted to determine if a significant difference exists between the means of the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for students in grades kindergarten through fifth and the type of preschool program experienced by these students in one east Tennessee school system. The dependent variable was the scores on the Dynamic Indicators of Basic Early Literacy Skills (DIBELS). The DIBELS measures included in the study were Letter Naming Fluency (LNF), Phoneme Segmentation Fluency (PSF), Nonsense Word Fluency (NWF), Oral Reading Fluency (ORF), and Retelling Fluency (RF). The independent variables were the type of preschool program attended prior to kindergarten. The preschool programs included in the study were the Tennessee Voluntary Preschool program, Head Start, daycare, private preschools, or no preschool experience. Preschool experience was collected using a survey sent home to all students enrolled in grades kindergarten through fifth in one east Tennessee school system during the 2009–2010 school year. The individual DIBELS scores were all collected from the participating school system. Chapter 4 is guided by the research questions and the related null hypotheses. Table 2 is a summary of the variables included in this study.

Table 2
Variables Included in the Study

Variable	Definition
Preschool Experience	1 = Tennessee Voluntary Preschool 2 = Head Start 3 = Private Preschool 4 = No preschool 5 = Daycare
Gender	1 = Male 2 = Female
DIBELS Measures	LNF = Letter Naming Fluency PSF = Phoneme Segmentation Fluency NWF = Nonsense Word Fluency ORF = Oral Reading Fluency RF = Retelling Fluency

Analysis of Research Questions

Research Questions 1, 2, and 3

Research Question 1: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for kindergarten grade students for Letter Naming Fluency (LNF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 2: Are there differences in DIBELS scores for first grade students for Letter Naming Fluency (LNF) between male and female students?

Research Question 3: Do the differences in DIBELS scores for kindergarten students for Letter Naming Fluency (LNF) among the four types of preschool programs vary as a function of gender?

The following null hypotheses were considered: Ho1: There are no differences in the DIBELS scores of kindergarten students for Letter Naming Fluency (LNF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool); Ho2: There are no differences in the DIBELS scores of kindergarten students for Letter Naming Fluency (LNF) between male and female students; and Ho3: The DIBELS scores for kindergarten students for Letter Naming Fluency (LNF) among the five types of preschool programs do not vary as a function of gender?

A two-way analysis of variance (ANOVA) was conducted to evaluate the effects on Letter Naming Fluency scores by type of preschool experience (Tennessee Voluntary Preschool, Head Start, daycare, private preschool, and no preschool) and gender (male and female). The means and standard deviations for Letter Naming Fluency scores as a function of the factors are presented in Table 3. The ANOVA indicated no significant interaction between preschool and gender, $F(9, 255) = .19, p = .942, \text{partial } \eta^2 < .01$, but significant main effects for preschool, $F(9, 255) = 5.13, p = .001, \text{partial } \eta^2 = .07$. There were no significant main effects for gender, $F(9, 255) = .39, p = .532, \text{partial } \eta^2 < .01$. Null hypothesis H₀₁ was rejected. Null hypothesis H₀₂ was retained. Null hypothesis H₀₃ was retained.

Follow-up analyses consisted of all pairwise comparisons among the five preschool groups. The Tukey HSD procedure was used to control for Type I error across the pairwise comparisons. The results of this analysis indicate that students who attended private preschool (Mean = 56.12) had significantly higher Letter Naming Fluency scores than those who did not

attend any type of preschool (Mean = 47.22) attended public preschool (Mean = 48.63) or Head Start (Mean = 45.41). There was no significant difference between the students who attended daycare and the other four groups. Also there was no significant difference in the Dynamic Indicators of Basic Early Literacy Skills scores by gender. Figure 1 shows the distribution of kindergarten Letter Naming Fluency scores by preschool and gender.

Table 3

The Means and Standard Deviations for Letter Naming Fluency for Kindergarten by Type of Preschool

Type of Preschool	Gender	<i>M</i>	<i>SD</i>	<i>N</i>
Public Preschool	Male	48.91	17.52	34
	Female	48.30	12.82	30
	Total	48.63	15.38	64
Head Start	Male	47.04	14.24	25
	Female	42.00	22.68	12
	Total	45.41	17.26	37
Private Preschool	Male	57.06	15.21	31
	Female	55.49	12.85	47
	Total	56.12	13.76	78
No Preschool	Male	48.12	13.77	40
	Female	45.89	15.66	27
	Total	47.22	14.49	67
Daycare	Male	49.86	13.37	14
	Female	52.20	19.46	5
	Total	50.47	14.64	19
Total	Male	50.22	15.33	144
	Female	50.09	15.46	121
	Total	50.16	15.36	265

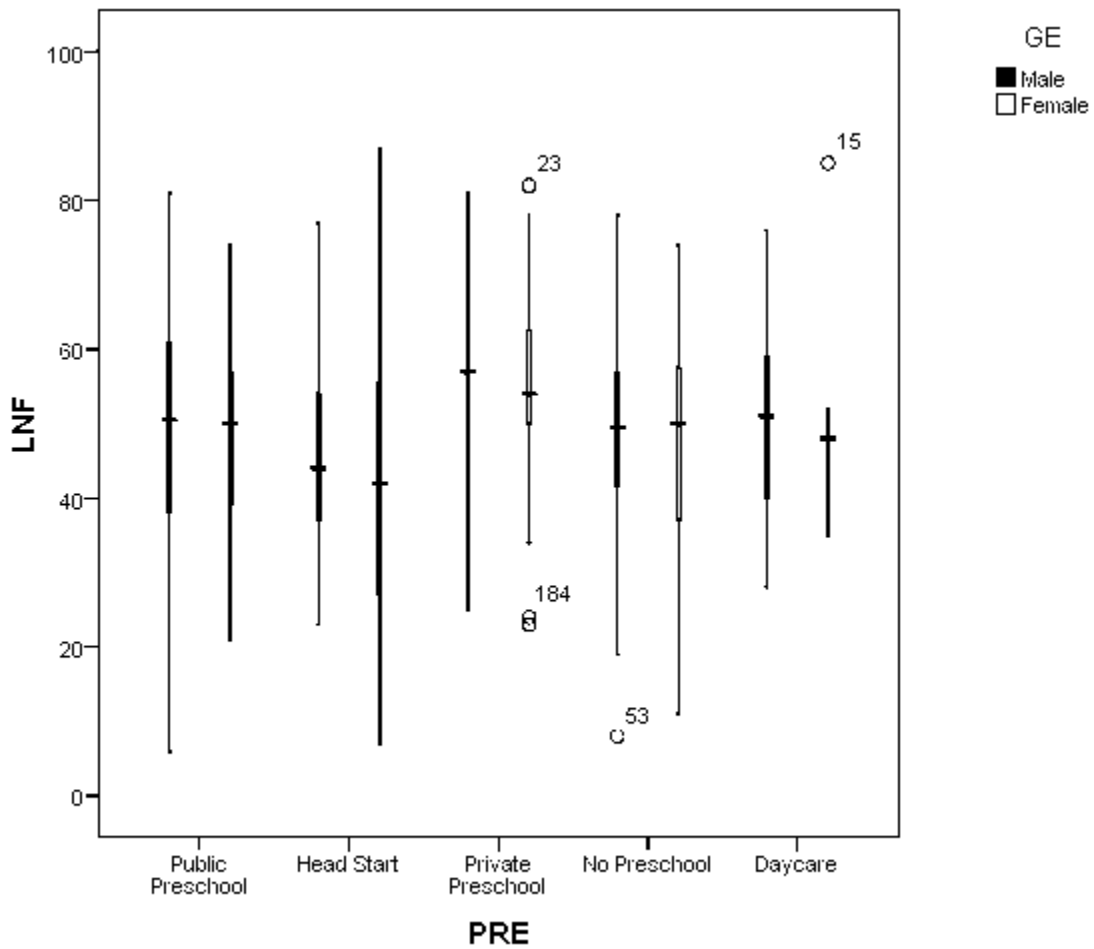


Figure 1. Boxplot for Letter Naming Fluency Scores by Preschool and Gender for Kindergarten.

Note: o = an observation between 1.5 to 3.0 the interquartile range

LNF = Letter Naming Fluency

PRE = Type of preschool

Research Questions 4, 5, and 6

Research Question 4: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for kindergarten grade students for Phoneme Segmentation Fluency (PSF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 5: Are there differences in DIBELS scores for first grade students for Phoneme Segmentation Fluency (PSF) between male and female students?

Research Question 6: Do the differences in DIBELS scores for kindergarten students for Phoneme Segmentation Fluency (PSF) among the four types of preschool programs vary as a function of gender?

The following null hypotheses were considered: Ho4: There are no differences in the DIBELS scores of kindergarten students for Phoneme Segmentation Fluency (PSF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool); Ho5: There are no differences in the DIBELS scores of kindergarten students for Phoneme Segmentation Fluency (PSF) between male and female students; and Ho6: The DIBELS scores for kindergarten students for Phoneme Segmentation Fluency (PSF) among the five types of preschool programs do not vary as a function of gender?

A two-way analysis of variance (ANOVA) was conducted to evaluate the effects on Phoneme Segmentation Fluency scores by type preschool experience (Tennessee Voluntary Preschool, Head Start, daycare, private preschool, and no preschool) and gender (male and female). The means and standard deviations for Phoneme Segmentation Fluency scores as a function of the factors are presented in Table 4. The ANOVA indicated no significant interaction between preschool and gender, $F(9, 256) = .51, p = .729$, partial $\eta^2 < .01$, but significant main

effects for preschool, $F(9, 256) = 3.30, p = .012, \text{partial } \eta^2 = .05$. There were no significant main effects for gender, $F(9, 256) = .05, p = .818, \text{partial } \eta^2 < .01$. Null hypothesis H_{04} was rejected. Null hypothesis H_{05} was retained. Null hypothesis H_{06} was retained.

Follow-up analyses consisted of all pairwise comparisons among the five preschool groups. The Tukey HSD procedure was used to control for Type I error across the pairwise comparisons. The results of this analysis indicate that students who attended private preschool (Mean = 60.10) had significantly higher Phoneme Segmentation Fluency scores than those who did not attend any type of preschool (Mean = 51.73). There were no significant differences for any of the other preschool groups. Figure 2 shows the distribution of kindergarten Phoneme Segmentation Fluency scores by preschool and gender.

Table 4

The Means and Standard Deviations for Phoneme Segmentation Fluency for Kindergarten by Type of Preschool

Type of Preschool	Gender	<i>M</i>	<i>SD</i>	<i>N</i>
Public Preschool	Male	53.06	15.77	34
	Female	56.20	11.90	30
	Total	54.53	14.07	64
Head Start	Male	54.32	16.22	25
	Female	52.85	13.45	13
	Total	53.82	15.16	38
Private Preschool	Male	58.58	11.99	31
	Female	61.11	10.01	47
	Total	60.10	10.84	78
No Preschool	Male	51.95	11.16	40
	Female	51.41	19.74	27
	Total	51.73	15.07	67
Daycare	Male	58.64	14.02	14
	Female	52.60	20.12	5
	Total	57.05	15.48	19
Total	Male	54.70	13.82	144
	Female	56.52	14.25	122
	Total	55.54	14.03	266

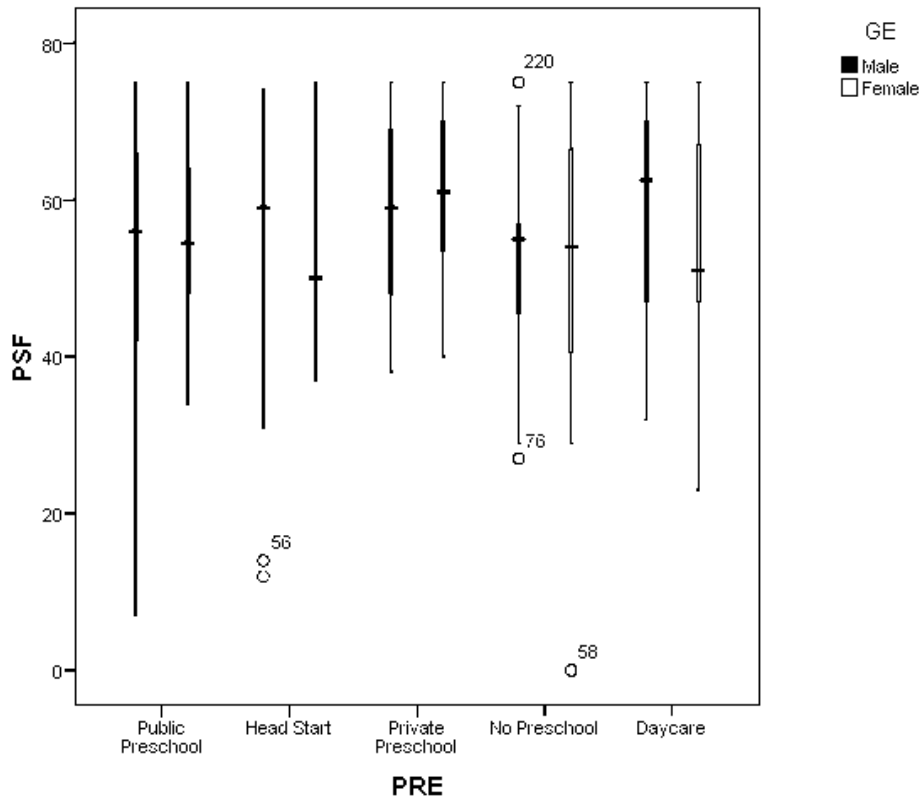


Figure 2. Boxplot for Phoneme Segmentation Fluency Scores by Preschool and Gender for Kindergarten.

Note: o = an observation between 1.5 to 3.0 the interquartile range

PSF = Phoneme Segmentation Fluency

PRE = Type of preschool

Research Question 7: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for kindergarten grade students for Nonsense Word Fluency (NSF), among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 8: Are there differences in DIBELS scores for first grade students for Nonsense Word Fluency (NSF) between male and female students?

Research Question 9: Do the differences in DIBELS scores for kindergarten students for Nonsense Word Fluency (NSF) among the five types of preschool programs vary as a function of gender?

The following null hypotheses were considered: Ho7: There are no differences in the DIBELS scores of kindergarten students for Nonsense Word Fluency (NSF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool); Ho8: There are no differences in the DIBELS scores of kindergarten students for Nonsense Word Fluency (NSF) between male and female students; and Ho9: The DIBELS scores for kindergarten students for Nonsense Word Fluency (NSF) among the five types of preschool programs do not vary as a function of gender?

A two-way analysis of variance (ANOVA) was conducted to evaluate the effects on Nonsense Word Fluency scores by type of preschool experience (Tennessee Voluntary Preschool, Head Start, daycare, private preschool, and no preschool) and gender (male and female). The means and standard deviations for Nonsense Word Fluency scores as a function of the factors are presented in Table 5. The ANOVA indicated no significant interaction between preschool and gender, $F(9, 254) = .41, p = .800, \text{partial } \eta^2 = .01$. No significant main effects were found for preschool, $F(9, 254) = 2.35, p = .055, \text{partial } \eta^2 = .04$ or gender, $F(9, 254) =$

2.64, $p = .106$ partial $\eta^2 = .10$. Null hypothesis H₀7 was retained. Null hypothesis H₀8 was retained. Null hypothesis H₀9 was retained. Figure 3 shows the distribution of kindergarten Nonsense Word Fluency scores by preschool and gender.

Table 5
The Means and Standard Deviations for Nonsense Word Fluency for Kindergarten by Type of Preschool

Type of Preschool	Gender	<i>M</i>	<i>SD</i>	<i>N</i>
Public Preschool	Male	39.88	18.41	34
	Female	38.70	19.69	30
	Total	39.33	18.88	64
Head Start	Male	36.24	17.85	25
	Female	31.62	22.97	13
	Total	34.66	19.56	38
Private Preschool	Male	45.58	22.52	31
	Female	44.61	17.99	46
	Total	45.00	19.79	77
No Preschool	Male	40.51	21.34	39
	Female	32.59	12.92	27
	Total	37.27	18.67	66
Daycare	Male	47.93	40.43	14
	Female	37.20	12.13	5
	Total	45.11	35.17	19
Total	Male	41.44	22.91	143
	Female	38.76	18.34	121
	Total	40.21	20.94	264

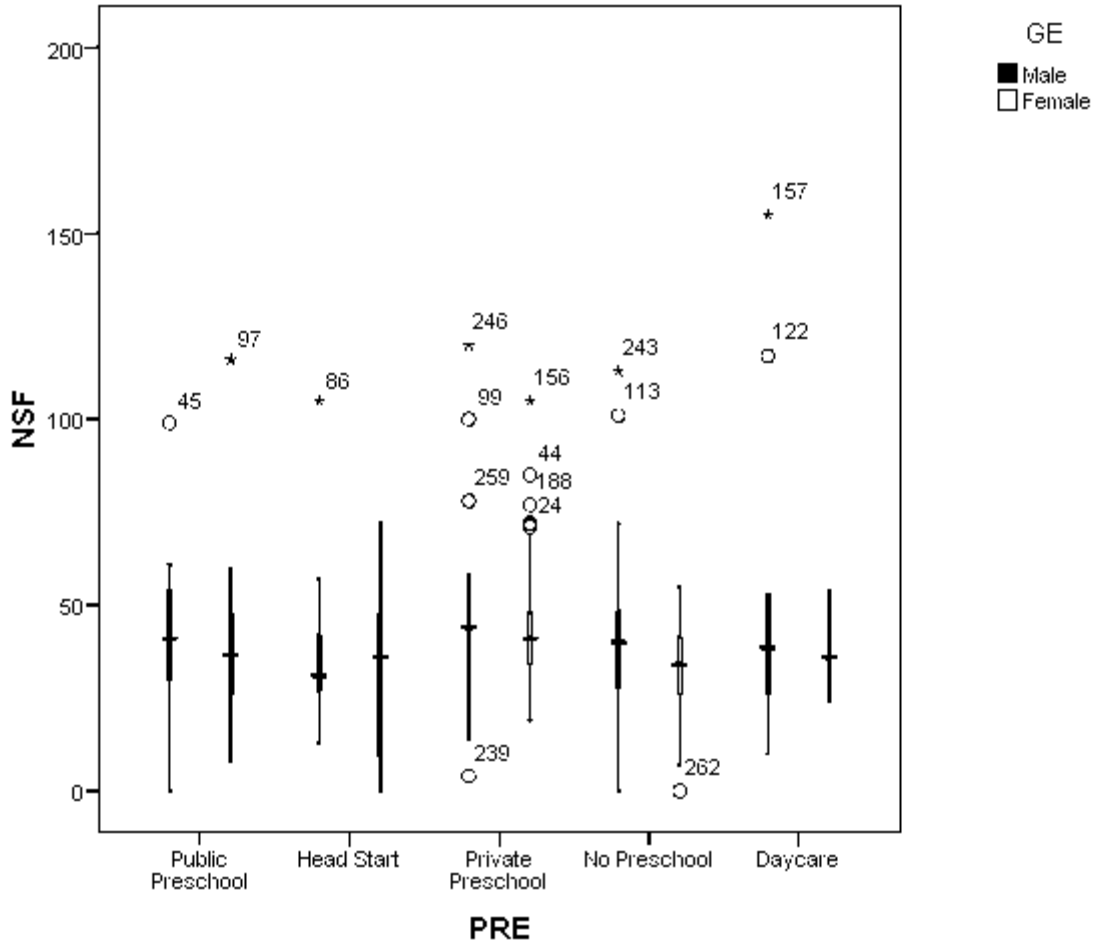


Figure 3. Boxplot for Nonsense Word Fluency Scores by Preschool and Gender for Kindergarten.

Note: o = an observation between 1.5 to 3.0 the interquartile range

* = an observation more than 3.0 times the interquartile range

NSF = Nonsense Word Fluency

PRE = Type of preschool

Research Questions 10, 11, and 12

Research Question 10: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for first grade students for Phoneme Segmentation Fluency (PSF), among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 11: Are there differences in DIBELS scores for first grade students for Phoneme Segmentation Fluency (PSF) between male and female students?

Research Question 12: Do the differences in DIBELS scores for first grade students for Phoneme Segmentation Fluency (PSF) among the five types of preschool programs vary as a function of gender?

The following null hypothesis was considered: Ho10: There are no differences in DIBELS scores for first grade students for Phoneme Segmentation Fluency (PSF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool); Ho11: There are no differences in DIBELS scores for first grade students for Phoneme Segmentation Fluency (PSF) between male and female students; and Ho12: The DIBELS scores for first grade students for Phoneme Segmentation Fluency (PSF) among the five types of preschool programs do not vary as a function of gender.

A two-way analysis of variance (ANOVA) was conducted to evaluate the effects on Phoneme Segmentation Fluency scores by type of preschool experience (Tennessee Voluntary Preschool, Head Start, daycare, private preschool, and no preschool) and gender (male and female). The means and standard deviations for Phoneme Segmentation Fluency scores as a function of the factors are presented in Table 6. The ANOVA indicated no significant interaction between preschool and gender, $F(9, 243) = .51, p = .730$, partial $\eta^2 < .01$, but significant main

effects for preschool, $F(9, 243) = 3.18, p = .014, \text{partial } \eta^2 = .05$. No significant main effects were found for gender, $F(9, 243) = .50, p = .481, \text{partial } \eta^2 < .01$. Null hypothesis H_{010} was rejected. Null hypothesis H_{011} was retained. Null hypothesis H_{012} was retained.

Follow-up analyses consisted of all pairwise comparisons among the five preschool groups. The Tukey HSD procedure was used to control for Type I error across the pairwise comparisons. The results of this analysis indicate that students who attended private preschool (Mean = 59.02) had significantly higher Phoneme Segmentation Fluency scores than those who attended Head Start (Mean = 51.06). There were no significant differences between the scores of the students in any of the other groups. Figure 4 shows the distribution of first grade Phoneme Segmentation Fluency scores by preschool and gender.

Table 6

The Means and Standard Deviations for Phoneme Segmentation Fluency for First Grade by Type of Preschool

Type of Preschool	Gender	<i>M</i>	<i>SD</i>	<i>N</i>
Public Preschool	Male	54.58	8.14	26
	Female	54.20	13.90	40
	Total	54.35	11.89	66
Head Start	Male	50.38	12.77	29
	Female	52.11	13.24	19
	Total	51.06	12.85	48
Private Preschool	Male	61.50	10.44	26
	Female	56.54	13.39	26
	Total	59.02	12.15	52
No Preschool	Male	56.53	12.67	36
	Female	55.24	11.08	38
	Total	55.86	11.81	74
Daycare	Male	51.29	3.95	7
	Female	49.67	11.48	6
	Total	50.54	7.96	13
Total	Male	55.43	11.60	124
	Female	54.46	12.73	129
	Total	54.93	12.18	253

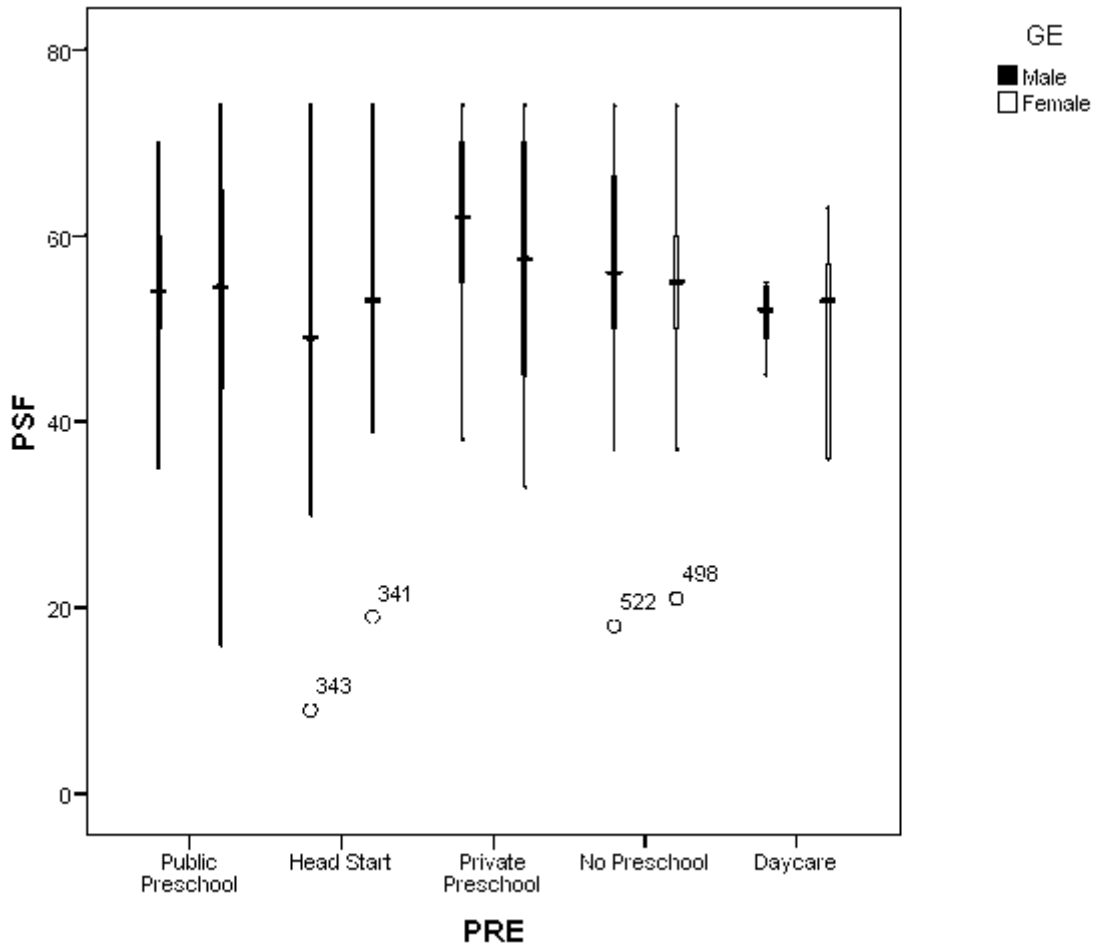


Figure 4. Boxplot for Phoneme Segmentation Fluency Scores by Preschool and Gender for First Grade.

Note: o = an observation between 1.5 to 3.0 the interquartile range

PSF = Phoneme Segmentation Fluency

PRE = Type of preschool

Research Questions 13, 14, and 15

Research Question 13: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for first grade students for Nonsense Word Fluency (NSF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 14: Are there differences in DIBELS scores for first grade students for Nonsense Word Fluency (NSF) between male and female students?

Research Question 15: Do the differences in DIBELS scores for first grade students for Nonsense Word Fluency (NSF) among the four types of preschool programs vary as a function of gender?

The following null hypothesis was considered: Ho13: There are no differences in DIBELS scores for first grade students for Nonsense Word Fluency (NSF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool); Ho14: There are no differences in DIBELS scores for first grade students for Nonsense Word Fluency (NSF) between male and female students; and Ho15: The DIBELS scores for first grade students for Nonsense Word Fluency (NSF) among the five types of preschool programs do not vary as a function of gender.

A two-way analysis of variance (ANOVA) was conducted to evaluate the effects on Nonsense Word Fluency scores by type of preschool experience (Tennessee Voluntary Preschool, Head Start, daycare, private preschool, and no preschool) and gender (male and female). The means and standard deviations for Nonsense Word Fluency scores as a function of the factors are presented in Table 7. The ANOVA indicated no significant interaction between preschool and gender, $F(9, 243) = .49, p = .746, \text{partial } \eta^2 < .01$, but significant main effects for

preschool, $F(9, 243) = 3.52, p = .008, \text{partial } \eta^2 = .06$. No significant main effects were found for gender, $F(9, 243) = 1.75, p = .187, \text{partial } \eta^2 = .01$. Null hypothesis H_{013} was rejected. Null hypothesis H_{014} was retained. Null hypothesis H_{015} was retained.

Follow-up analyses consisted of all pairwise comparisons among the five preschool groups. The Tukey HSD procedure was used to control for Type I error across the pairwise comparisons. The results of this analysis indicate that students who attended private preschool (Mean = 87.31) had significantly higher Nonsense Word Fluency scores than those who attended Head Start (Mean = 65.73) and those students that received no formal preschool education (Mean = 70.86). There were no significant differences between the scores of the students for any other groups. Figure 5 shows the distribution of first grade Nonsense Word Fluency scores by preschool and gender.

Table 7

The Means and Standard Deviations for Nonsense Word Fluency for First Grade by Type of Preschool

Type of Preschool	Gender	<i>M</i>	<i>SD</i>	<i>N</i>
Public Preschool	Male	75.23	30.84	26
	Female	77.30	36.73	40
	Total	76.48	34.30	66
Head Start	Male	69.93	34.64	29
	Female	59.32	14.49	19
	Total	65.73	28.68	48
Private Preschool	Male	93.62	37.70	26
	Female	81.00	30.87	26
	Total	87.31	34.70	52
No Preschool	Male	72.58	29.33	36
	Female	69.24	27.96	38
	Total	70.86	28.49	74
Daycare	Male	75.86	32.66	7
	Female	68.00	38.39	6
	Total	72.23	34.11	13
Total	Male	77.11	33.60	124
	Female	72.59	31.02	129
	Total	74.81	32.32	253

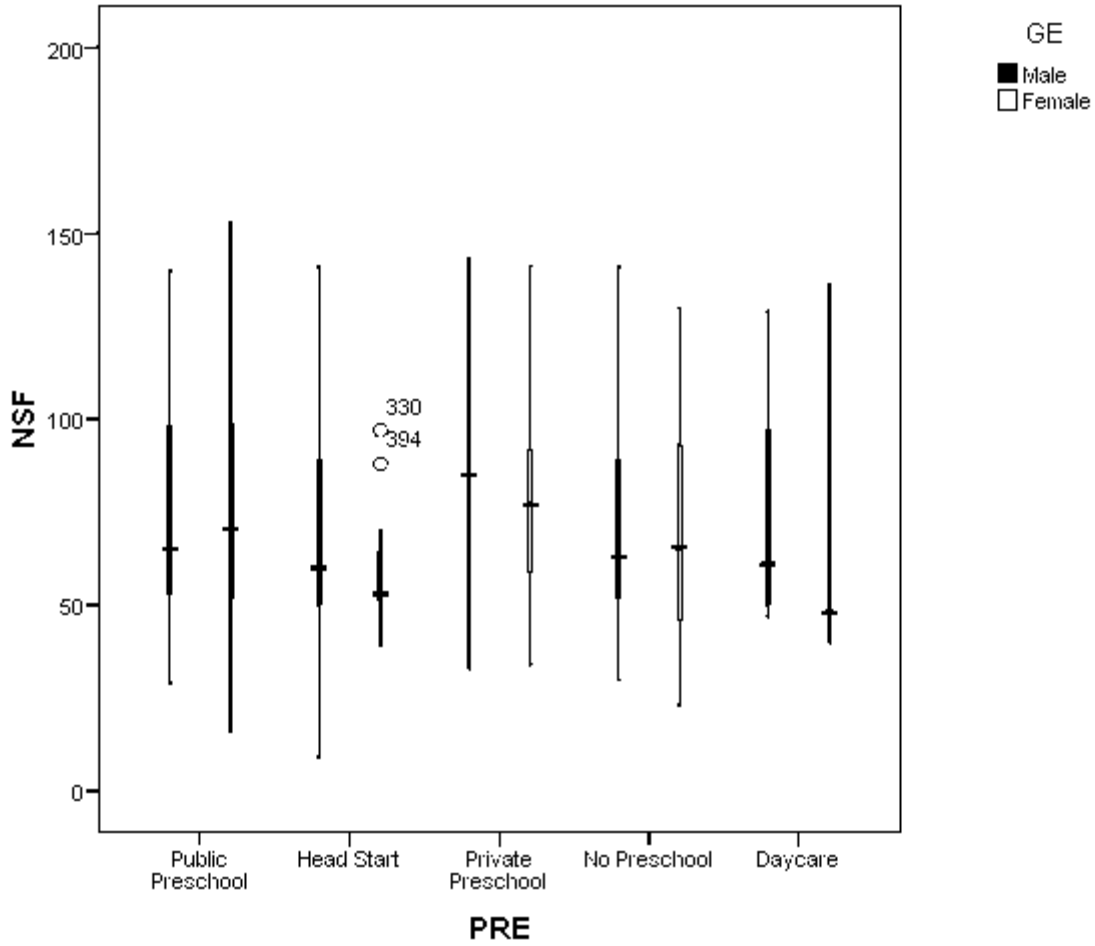


Figure 5. Boxplot for Nonsense Word Fluency Scores by Preschool and Gender for First Grade.

Note: o = an observation between 1.5 to 3.0 the interquartile range

NSF = Nonsense Word Fluency

PRE = Type of preschool

Research Questions 16, 17, and 18

Research Question 16: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for first grade students for Oral Reading Fluency (ORF), among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 17: Are there differences in DIBELS scores for first grade students for Oral Reading Fluency (ORF) between male and female students?

Research Question 18: Do the differences in DIBELS scores for first grade students for Oral Reading Fluency (ORF) among the four types of preschool programs vary as a function of gender?

The following null hypothesis was considered: Ho16: There are no differences in DIBELS scores for first grade students for Oral Reading Fluency (ORF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool); Ho17: There are no differences in DIBELS scores for first grade students for Oral Reading Fluency (ORF) between male and female students; and Ho18: The DIBELS scores for first grade students for Oral Reading Fluency (ORF) among the five types of preschool programs do not vary as a function of gender.

A two-way analysis of variance (ANOVA) was conducted to evaluate the effects on Oral Reading Fluency scores by type of preschool experience (Tennessee Voluntary Preschool, Head Start, daycare, private preschool, and no preschool) and gender (male and female). The means and standard deviations for Oral Reading Fluency scores as a function of the factors are presented in Table 8. The ANOVA indicated no significant interaction between preschool and gender, $F(9, 243) = 1.04, p = .388, \text{partial } \eta^2 = .02$, but significant main effects for preschool,

$F(9, 243) = 8.78, p < .001, \text{partial } \eta^2 = .13$. No significant main effects were found for gender, $F(9, 243) = .07, p = .788$ partial $\eta^2 < .01$. Null hypothesis H_{016} was rejected. Null hypothesis H_{017} was retained. Null hypothesis H_{018} was retained.

Follow-up analyses consisted of all pairwise comparisons among the five preschool groups. The Tukey HSD procedure was used to control for Type I error across the pairwise comparisons. The results of this analysis indicate that students who attended public preschool (Mean = 65.56) or had no formal preschool experience (Mean = 57.62) had significantly higher Oral Reading Fluency scores than those who attended Head Start (Mean = 39.40). Students who attended private preschool (Mean = 77.90) had significantly higher Oral Reading Fluency scores than those who attended Head Start (Mean = 39.40) and those who had no formal preschool education (Mean = 57.62). Figure 6 shows the distribution of first grade Oral Reading Fluency scores by preschool and gender.

Table 8

*The Means and Standard Deviations for Oral Reading Fluency for First Grade
by Type of Preschool*

Type of Preschool	Gender	<i>M</i>	<i>SD</i>	<i>N</i>
Public Preschool	Male	57.42	30.43	26
	Female	70.85	37.59	40
	Total	65.56	35.32	66
Head Start	Male	43.52	32.95	29
	Female	33.11	19.12	19
	Total	39.40	28.52	48
Private Preschool	Male	78.08	40.90	26
	Female	77.73	38.41	26
	Total	77.90	39.29	52
No Preschool	Male	53.03	26.64	36
	Female	61.97	35.53	38
	Total	57.62	31.63	74
Daycare	Male	59.14	30.76	7
	Female	54.50	31.91	6
	Total	57.00	30.06	13
Total	Male	57.32	34.13	124
	Female	63.30	37.07	129
	Total	60.37	35.72	253

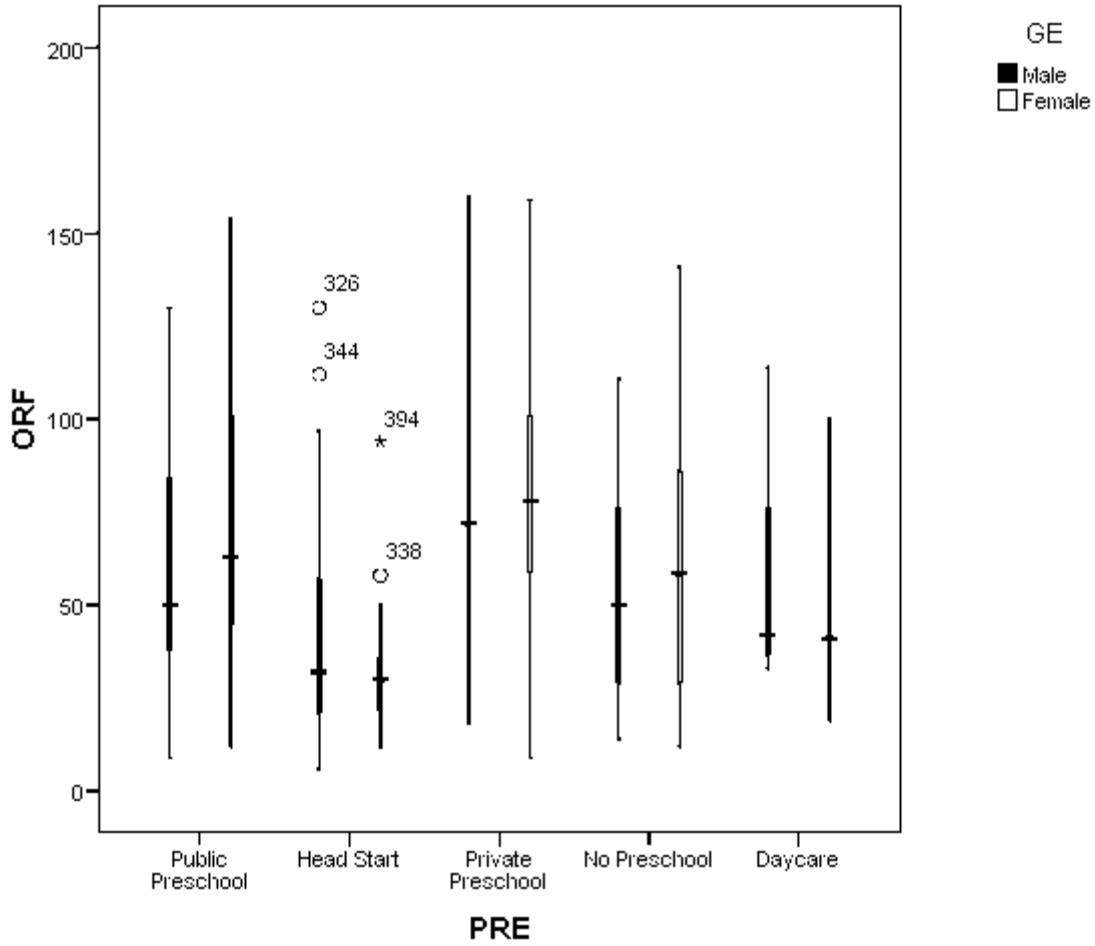


Figure 6. Boxplot for Oral Reading Fluency Scores by Preschool and Gender for First Grade.

Note: o = an observation between 1.5 to 3.0 the interquartile range

* = an observation more than 3.0 times the interquartile range

ORF = Oral Reading Fluency

PRE = Type of preschool

Research Questions 19, 20, and 21

Research Question 19: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for first grade students for Retell Fluency (RF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 20: Are there differences in DIBELS scores for first grade students for Retell Fluency (RF) between male and female students?

Research Question 21: Do the differences in DIBELS scores for first grade students for Retell Fluency (RF) among the four types of preschool programs vary as a function of gender?

The following null hypothesis was considered: Ho19: There are no differences in DIBELS scores for first grade students for Retell Fluency (RF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool); Ho20: There are no differences in DIBELS scores for first grade students for Retell Fluency (RF) between male and female students; and Ho21: The DIBELS scores for first grade students for Retell Fluency (RF) among the five types of preschool programs do not vary as a function of gender.

A two-way analysis of variance (ANOVA) was conducted to evaluate the effects on Retell Fluency scores by type of preschool experience (Tennessee Voluntary Preschool, Head Start, daycare, private preschool, and no preschool) and gender (male and female). The means and standard deviations for Retell Fluency scores as a function of the factors are presented in Table 9. The ANOVA indicated no significant interaction between preschool and gender, $F(9, 179) = .74, p = .567, \text{partial } \eta^2 = .02$, but significant main effects for preschool, $F(9, 179) = 2.46, p = .047, \text{partial } \eta^2 = .05$. No significant main effects were found for gender, $F(9, 179) = .12, p =$

.727 partial $\eta^2 < .01$. Null hypothesis H_{019} was rejected. Null hypothesis H_{020} was retained. Null hypothesis H_{021} was retained.

Follow-up analyses consisted of all pairwise comparisons among the five preschool groups. The Tukey HSD procedure was used to control for Type I error across the pairwise comparisons. The results of this analysis indicate that students who attended private preschool (Mean = 30.74) had significantly higher Retell Fluency scores than those who had no formal preschool education (Mean = 21.49). No other pairwise comparisons demonstrated a significant difference. Figure 7 shows the distribution of first grade Retell Fluency scores by preschool and gender.

Table 9

The Means and Standard Deviations for Retell Fluency for First Grade by Type of Preschool

Type of Preschool	Gender	<i>M</i>	<i>SD</i>	<i>N</i>
Public Preschool	Male	29.62	20.59	21
	Female	23.39	14.63	31
	Total	25.90	17.36	52
Head Start	Male	20.94	12.06	18
	Female	26.22	19.95	9
	Total	22.70	14.97	27
Private Preschool	Male	30.14	18.61	22
	Female	31.40	17.07	20
	Total	30.74	17.69	42
No Preschool	Male	22.11	13.92	27
	Female	20.93	14.02	30
	Total	21.49	13.86	57
Daycare	Male	17.00	8.48	6
	Female	22.80	18.73	5
	Total	19.64	13.62	11
Total	Male	25.12	16.57	94
	Female	24.54	15.86	95
	Total	24.83	16.18	189

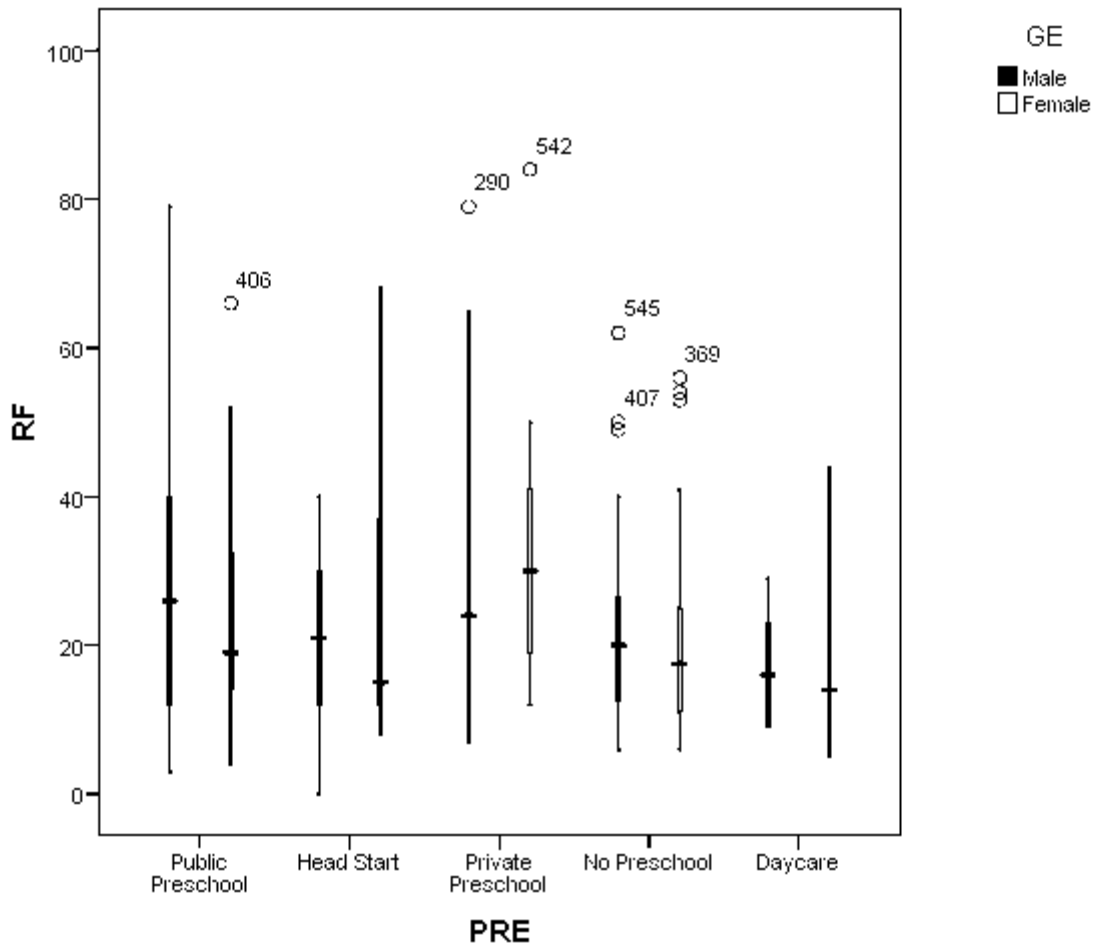


Figure 7. Boxplot for Retell Fluency Scores by Preschool and Gender for First Grade.

Note: o = an observation between 1.5 to 3.0 the interquartile range

RF = Retell Fluency

PRE = Type of preschool

Research Questions 22, 23, and 24

Research Question 22: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for second grade students for Oral Reading Fluency (ORF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 23: Are there differences in DIBELS scores for second grade students for Oral Reading Fluency (ORF) between male and female students?

Research Question 24: Do the differences in DIBELS scores for second grade students for Oral Reading Fluency (ORF) among the four types of preschool programs vary as a function of gender?

The following null hypothesis was considered: Ho22: There are no differences in DIBELS scores for second grade students for Oral Reading Fluency (ORF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool); Ho23: There are no differences in DIBELS scores for second grade students for Oral Reading Fluency (ORF) between male and female students; and Ho24: The DIBELS scores for second grade students for Oral Reading Fluency (ORF) among the five types of preschool programs do not vary as a function of gender.

A two-way analysis of variance (ANOVA) was conducted to evaluate the effects on Oral Reading Fluency scores by type of preschool experience (Tennessee Voluntary Preschool, Head Start, daycare, private preschool, and no preschool) and gender (male and female). The means and standard deviations for Oral Reading Fluency scores as a function of the factors are presented in Table 10. The ANOVA indicated no significant interaction between preschool and gender, $F(9, 202) = 2.02, p = .093, \text{partial } \eta^2 = .04$, but significant main effects for preschool,

$F(9, 202) = 7.23, p < .40, \text{partial } \eta^2 = .13$. No significant main effects were found for gender, $F(9, 202) = .70, p = .404, \text{partial } \eta^2 < .01$. Null hypothesis H_{022} was rejected. Null hypothesis H_{023} was retained. Null hypothesis H_{024} was retained.

Follow-up analyses consisted of all pairwise comparisons among the five preschool groups. The Tukey HSD procedure was used to control for Type I error across the pairwise comparisons. The results of this analysis indicate that students who attended private preschool (Mean = 111.89) had significantly higher Oral Reading Fluency scores than those who attended the Volunteer Preschool Program (Mean = 92.83), Daycare (Mean = 87.81), and those with no formal preschool education (Mean = 92.17). Figure 10 shows the distribution of second grade Oral Reading Fluency scores by preschool and gender.

Table 10

The Means and Standard Deviations for Oral Reading Fluency for Second Grade by Type of Preschool

Type of Preschool	Gender	<i>M</i>	<i>SD</i>	<i>N</i>
Public Preschool	Male	96.89	24.03	18
	Female	89.79	27.08	24
	Total	92.83	25.76	42
Head Start	Male	84.61	32.29	18
	Female	90.84	27.34	19
	Total	87.81	29.60	37
Private Preschool	Male	103.00	29.06	33
	Female	122.36	34.41	28
	Total	111.89	32.83	61
No Preschool	Male	83.92	24.48	25
	Female	98.42	25.03	33
	Total	92.17	25.62	58
Daycare	Male	117.75	15.48	4
	Female	104.10	22.13	10
	Total	108.00	20.87	14
Total	Male	94.23	28.51	98
	Female	101.72	30.45	114
	Total	98.26	29.74	212

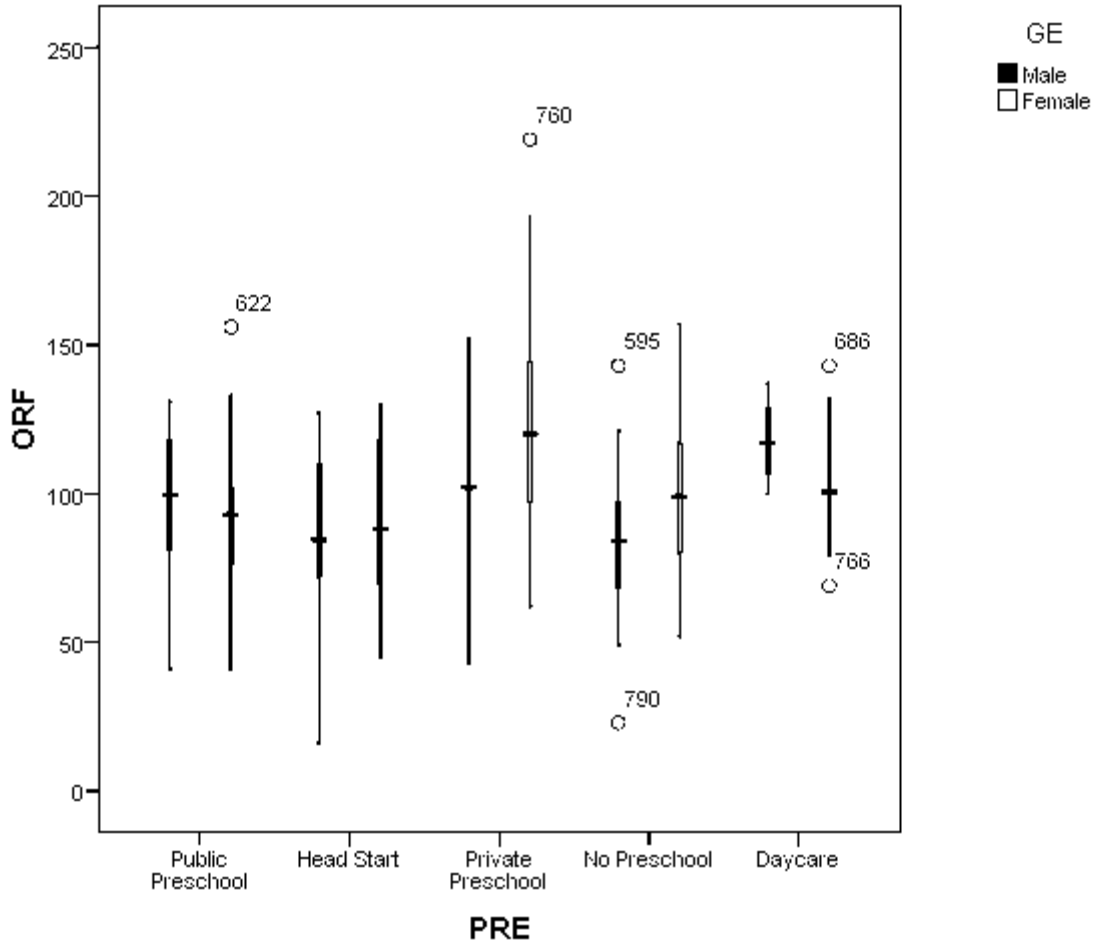


Figure 8. Boxplot for Oral Reading Fluency Scores by Preschool and Gender for Second Grade.

Note: o = an observation between 1.5 to 3.0 the interquartile range

ORF = Oral Reading Fluency

PRE = Type of preschool

Research Questions 25, 26, and 27

Research Question 25: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for second grade students for Retell Fluency (RF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 26: Are there differences in DIBELS scores for second grade students for Retell Fluency (RF) between male and female students?

Research Question 27: Do the differences in DIBELS scores for second grade students for Retell Fluency (RF) among the four types of preschool programs vary as a function of gender?

The following null hypothesis was considered: Ho25: There are no differences in DIBELS scores for second grade students for Retell Fluency (RF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool); Ho26: There are no differences in DIBELS scores for second grade students for Retell Fluency (RF) between male and female students; and Ho27: The DIBELS scores for second grade students for Retell Fluency (RF) among the five types of preschool programs do not vary as a function of gender.

A two-way analysis of variance (ANOVA) was conducted to evaluate the effects on Retell Fluency scores by type of preschool experience (Tennessee Voluntary Preschool, Head Start, daycare, private preschool, and no preschool) and gender (male and female). The means and standard deviations for Retell Fluency scores as a function of the factors are presented in Table 11. The ANOVA indicated no significant interaction between preschool and gender, $F(9, 179) = 1.34, p = .237$, partial $\eta^2 = .03$, but significant main effects for preschool, $F(9, 179) =$

2.88, $p = .024$, partial $\eta^2 = .06$. No significant main effects were found for gender, $F(9, 179) = .04$, $p = .843$ partial $\eta^2 < .01$. Null hypothesis H_{025} was rejected. Null hypothesis H_{026} was retained. Null hypothesis H_{027} was retained.

Follow-up analyses consisted of all pairwise comparisons among the five preschool groups. The Tukey HSD procedure was used to control for Type I error across the pairwise comparisons. The results of this analysis indicate that students who attended private preschool (Mean = 51.38) had significantly higher Retell Fluency scores than those with no formal preschool education (Mean = 42.58). Figure 9 shows the distribution of first grade Retell Fluency scores by preschool and gender.

Table 11

The Means and Standard Deviations for Retell Fluency for Second Grade by Type of Preschool

Type of Preschool	Gender	<i>M</i>	<i>SD</i>	<i>N</i>
Public Preschool	Male	46.76	14.11	17
	Female	45.00	17.03	21
	Total	45.79	15.61	38
Head Start	Male	40.40	17.33	15
	Female	41.47	15.23	17
	Total	40.97	16.00	32
Private Preschool	Male	50.21	14.96	29
	Female	52.79	17.44	24
	Total	51.38	16.02	53
No Preschool	Male	37.18	14.92	22
	Female	46.53	20.18	30
	Total	42.58	18.57	52
Daycare	Male	52.50	26.26	4
	Female	38.40	12.77	10
	Total	42.43	17.77	14
Total	Male	44.66	16.39	87
	Female	46.05	17.76	102
	Total	45.41	17.11	189

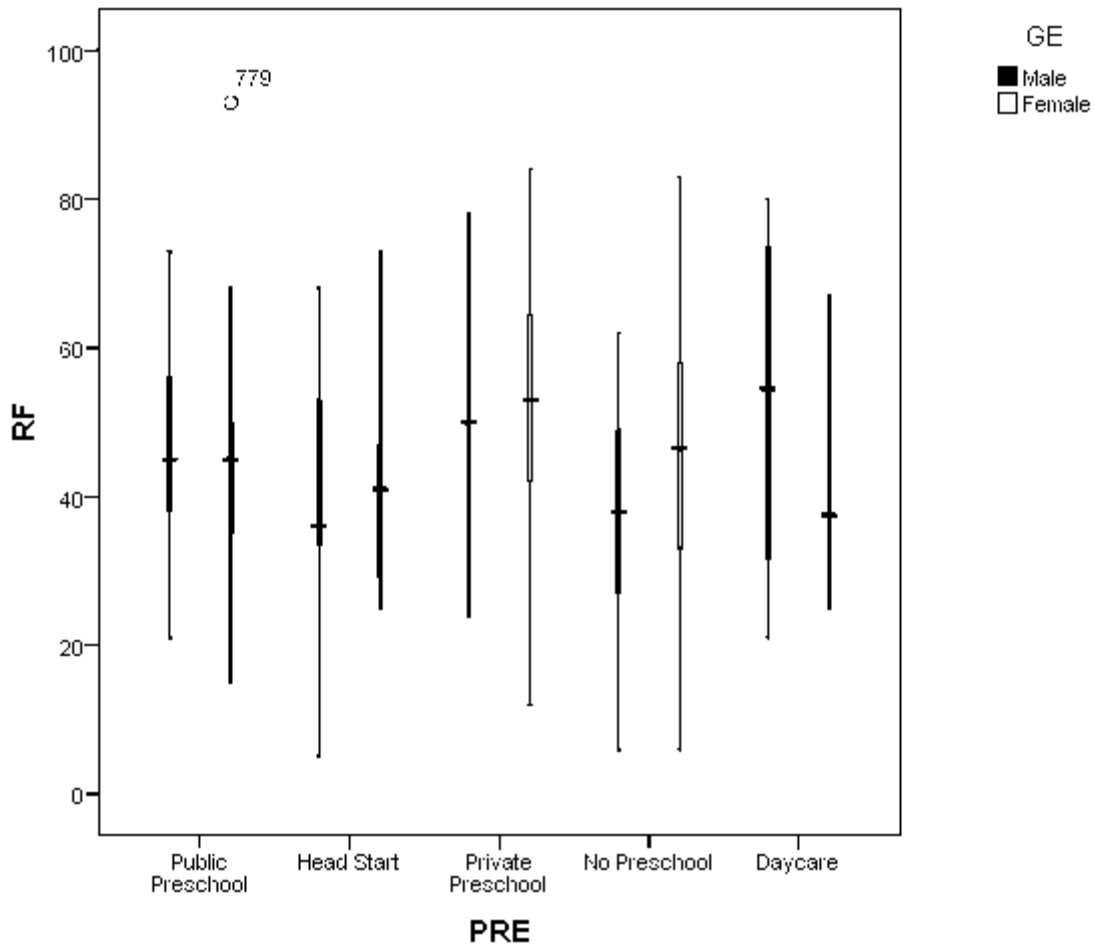


Figure 9. Boxplot for Retell Fluency Scores by Preschool and Gender for Second Grade.

Note: o = an observation between 1.5 to 3.0 the interquartile range

RF = Retell Fluency

PRE = Type of preschool

Research Questions 28, 29, and 30

Research Question 28: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for third grade students for Oral Reading Fluency (ORF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 29: Are there differences in DIBELS scores for third grade students for Oral Reading Fluency (ORF) between male and female students?

Research Question 30: Do the differences in DIBELS scores for third grade students for Oral Reading Fluency (ORF) among the four types of preschool programs vary as a function of gender?

The following null hypothesis was considered: Ho28: There are no differences in DIBELS scores for third grade students for Oral Reading Fluency (ORF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool); Ho29: There are no differences in DIBELS scores for third grade students for Oral Reading Fluency (ORF) between male and female students; and Ho30: The DIBELS scores for third grade students for Oral Reading Fluency (ORF) among the five types of preschool programs do not vary as a function of gender.

A two-way analysis of variance (ANOVA) was conducted to evaluate the effects on Oral Reading Fluency scores by type of preschool experience (Tennessee Voluntary Preschool, Head Start, daycare, private preschool, and no preschool) and gender (male and female). The means and standard deviations for Oral Reading Fluency scores as a function of the factors are presented in Table 12. The ANOVA indicated no significant interaction between preschool and gender, $F(9, 280) = .43, p = .784, \text{partial } \eta^2 = .01$, but significant main effects for preschool, $F(9,$

280) = 5.00, $p = .001$, partial $\eta^2 = .07$. and for gender, $F(9, 280) = 9.05$, $p = .003$ partial $\eta^2 < .01$. Null hypothesis H_{028} was rejected. Null hypothesis H_{029} was retained. Null hypothesis H_{030} was retained.

Follow-up analyses consisted of all pairwise comparisons among the five preschool groups. The Tukey HSD procedure was used to control for Type I error across the pairwise comparisons. The results of this analysis indicate that students who attended private preschool (Mean = 120.43), those who attended daycare (Mean = 120.00), and those who had no formal preschool education (Mean = 115.16) had significantly higher Oral Reading Fluency scores than those who attended Head Start (Mean = 97.52). The results of this analysis indicate that female students (Mean = 118.42) had significantly higher Oral Reading Fluency scores than males (Mean = 107.26). Figure 10 shows the distribution of first grade Oral Reading Fluency scores by preschool and gender.

Table 12

*The Means and Standard Deviations for Oral Reading Fluency for Third Grade
by Type of Preschool*

Type of Preschool	Gender	<i>M</i>	<i>SD</i>	<i>N</i>
Public Preschool	Male	105.10	27.13	29
	Female	111.84	28.12	25
	Total	108.22	27.54	54
Head Start	Male	89.59	31.85	29
	Female	108.48	28.19	21
	Total	97.52	31.51	50
Private Preschool	Male	116.17	29.63	41
	Female	124.68	27.44	41
	Total	120.43	28.70	82
No Preschool	Male	111.21	29.96	39
	Female	118.74	28.11	43
	Total	115.16	29.07	82
Daycare	Male	112.27	22.13	11
	Female	127.73	32.01	11
	Total	120.00	27.99	22
Total	Male	107.26	30.37	149
	Female	118.42	28.55	141
	Total	112.68	29.97	290

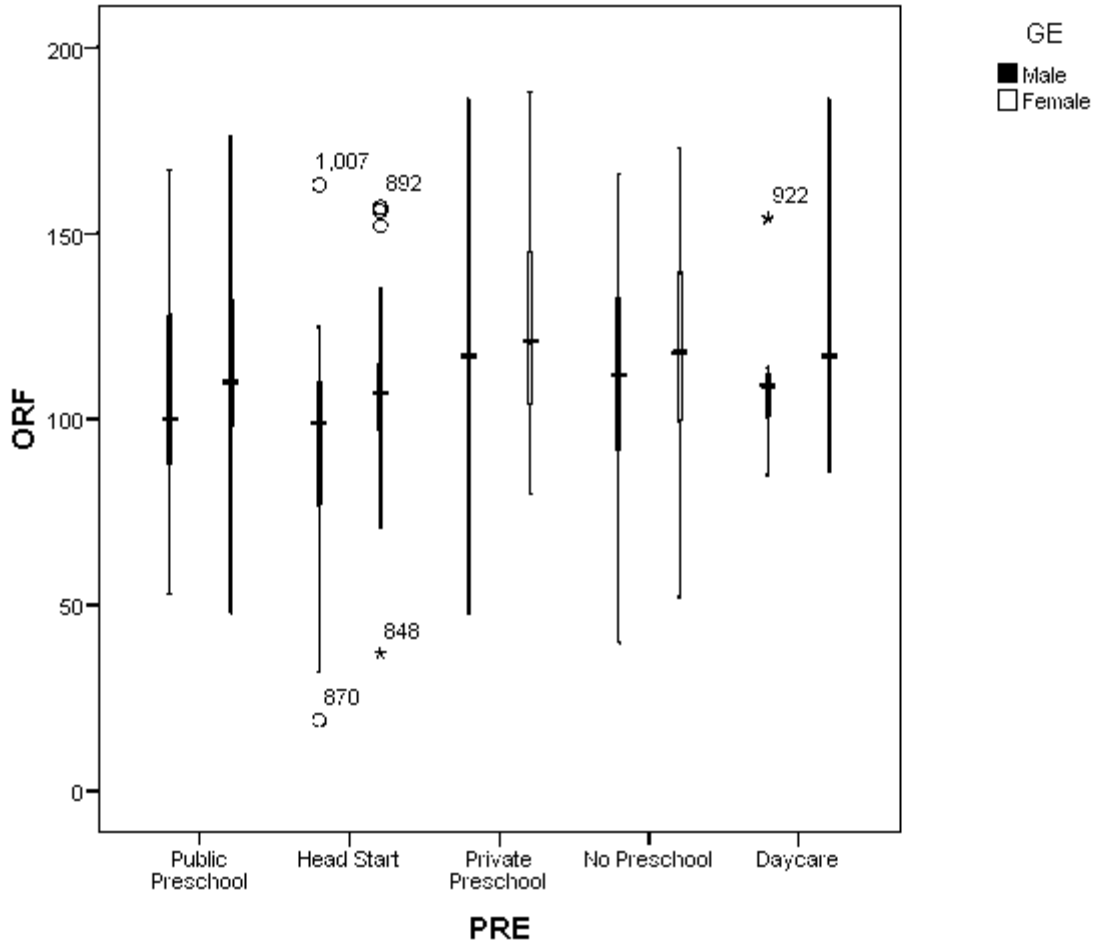


Figure 10. Boxplot for Oral Reading Fluency Scores by Preschool and Gender for Third Grade

Note: o = an observation between 1.5 to 3.0 the interquartile range

* = an observation more than 3.0 times the interquartile range

ORF = Oral Reading Fluency

PRE = Type of preschool

Research Questions 31, 32, and 33

Research Question 31: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for third grade students for Retell Fluency (RF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 32: Are there differences in DIBELS scores for third grade students for Retell Fluency (RF) between male and female students?

Research Question 33: Do the differences in DIBELS scores for third grade students for Retell Fluency (RF) among the four types of preschool programs vary as a function of gender?

The following null hypothesis was considered: Ho31: There are no differences in DIBELS scores for third grade students for Retell Fluency (RF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool); Ho32: There are no differences in DIBELS scores for third grade students for Retell Fluency (RF) between male and female students; and Ho33: The DIBELS scores for third grade students for Retell Fluency (RF) among the five types of preschool programs do not vary as a function of gender.

A two-way analysis of variance (ANOVA) was conducted to evaluate the effects on Retell Fluency scores of type of preschool experience (Tennessee Voluntary Preschool, Head Start, daycare, private preschool, and no preschool) and gender (male and female). The means and standard deviations for Retell Fluency scores as a function of the factors are presented in Table 13. The ANOVA indicated no significant interaction between preschool and gender, $F(9, 254) = 1.13, p = .342, \text{partial } \eta^2 = .02$. No significant main effects were found for preschool, $F(9, 254) = 1.10, p = .355 \text{ partial } \eta^2 = .02$ or gender, $F(9, 254) = .67, p = .415 \text{ partial } \eta^2 < .01$. Null

hypothesis H₀31 was retained. Null hypothesis H₀32 was retained. Null hypothesis H₀33 was retained. Figure 11 shows the distribution of third grade Retell Fluency scores by preschool and gender.

Table 13
The Means and Standard Deviations for Retell Fluency for Third Grade by Type of Preschool

Type of Preschool	Gender	<i>M</i>	<i>SD</i>	<i>N</i>
Public Preschool	Male	43.41	14.41	27
	Female	48.58	21.33	24
	Total	45.84	18.00	51
Head Start	Male	42.09	17.63	23
	Female	51.05	21.02	19
	Total	46.14	19.53	42
Private Preschool	Male	54.27	16.77	40
	Female	49.27	19.11	37
	Total	51.87	17.99	77
No Preschool	Male	45.83	17.87	35
	Female	48.98	19.83	41
	Total	47.53	18.89	76
Daycare	Male	52.60	28.15	10
	Female	51.38	22.98	8
	Total	52.06	25.25	18
Total	Male	47.71	18.23	135
	Female	49.44	19.98	129
	Total	48.56	19.09	264

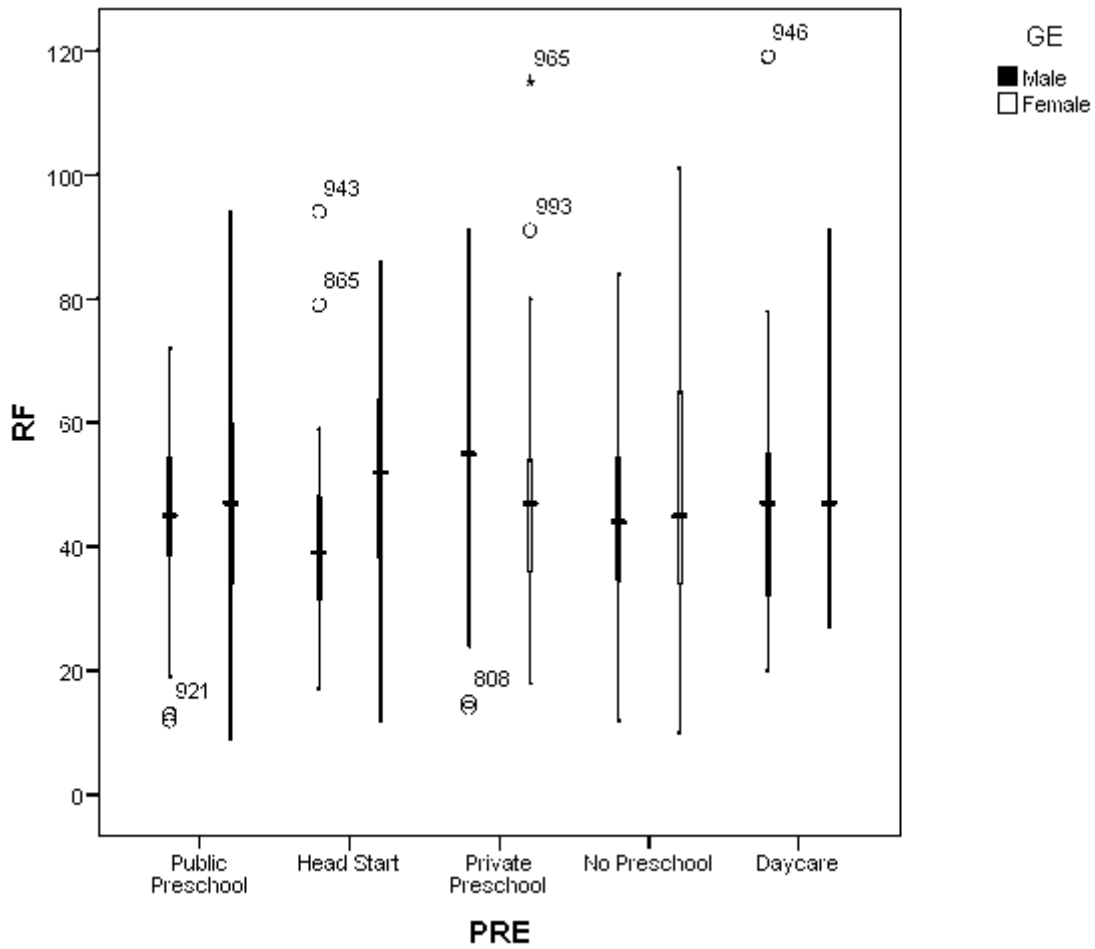


Figure 11. Boxplot for Retell Fluency Scores by Preschool and Gender for Third Grade

Note: o = an observation between 1.5 to 3.0 the interquartile range

* = an observation more than 3.0 times the interquartile range

RF = Retell Fluency

PRE = Type of preschool

Research Questions 34, 35, and 36

Research Question 34: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for fourth grade students for Oral Reading Fluency (ORF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 35: Are there differences in DIBELS scores for fourth grade students for Oral Reading Fluency (ORF) between male and female students?

Research Question 36: Do the differences in DIBELS scores for fourth grade students for Oral Reading Fluency (ORF) among the four types of preschool programs vary as a function of gender?

The following null hypothesis was considered: Ho34: There are no differences in DIBELS scores for fourth grade students for Oral Reading Fluency (ORF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool); Ho35: There are no differences in DIBELS scores for fourth grade students for Oral Reading Fluency (ORF) between male and female students; and Ho36: The DIBELS scores for fourth grade students for Oral Reading Fluency (ORF) among the five types of preschool programs do not vary as a function of gender.

A two-way analysis of variance (ANOVA) was conducted to evaluate the effects on Oral Reading Fluency scores of type by preschool experience (Tennessee Voluntary Preschool, Head Start, daycare, private preschool, and no preschool) and gender (male and female). The means and standard deviations for Oral Reading Fluency scores as a function of the factors are presented in Table 14. The ANOVA indicated no significant interaction between preschool and gender, $F(9, 247) = 1.84, p = .122, \text{partial } \eta^2 = .03$, but significant main effects for preschool,

$F(9, 247) = 3.77, p = .005$, partial $\eta^2 = .06$. No significant main effects were found for gender, $F(9, 247) = 1.32, p = .252$ partial $\eta^2 < .01$. Null hypothesis H_{034} was rejected. Null hypothesis H_{035} was retained. Null hypothesis H_{036} was retained.

Follow-up analyses consisted of all pairwise comparisons among the five preschool groups. The Tukey HSD procedure was used to control for Type I error across the pairwise comparisons. The results of this analysis indicate that students who attended private preschool (Mean = 129.84) had significantly higher Oral Reading Fluency scores than those who attended Head Start (Mean = 114.79). No other pairwise comparisons demonstrated a significance between Oral Reading Fluency Scores. Figure 12 shows the distribution of fourth grade Oral Reading Fluency scores by preschool and gender.

Table 14

The Means and Standard Deviations for Oral Reading Fluency for Fourth Grade by Type of Preschool

Type of Preschool	Gender	<i>M</i>	<i>SD</i>	<i>N</i>
Public Preschool	Male	133.29	26.78	7
	Female	120.50	29.65	12
	Total	125.21	28.58	19
Head Start	Male	107.07	33.83	27
	Female	119.63	35.81	43
	Total	114.79	35.35	70
Private Preschool	Male	136.09	30.23	22
	Female	126.78	36.04	45
	Total	129.84	34.29	67
No Preschool	Male	116.69	31.58	26
	Female	120.02	28.61	50
	Total	118.88	29.49	76
Daycare	Male	146.10	25.21	10
	Female	124.20	28.01	15
	Total	132.96	28.56	25
Total	Male	122.97	33.42	92
	Female	122.18	32.51	165
	Total	122.46	32.78	257

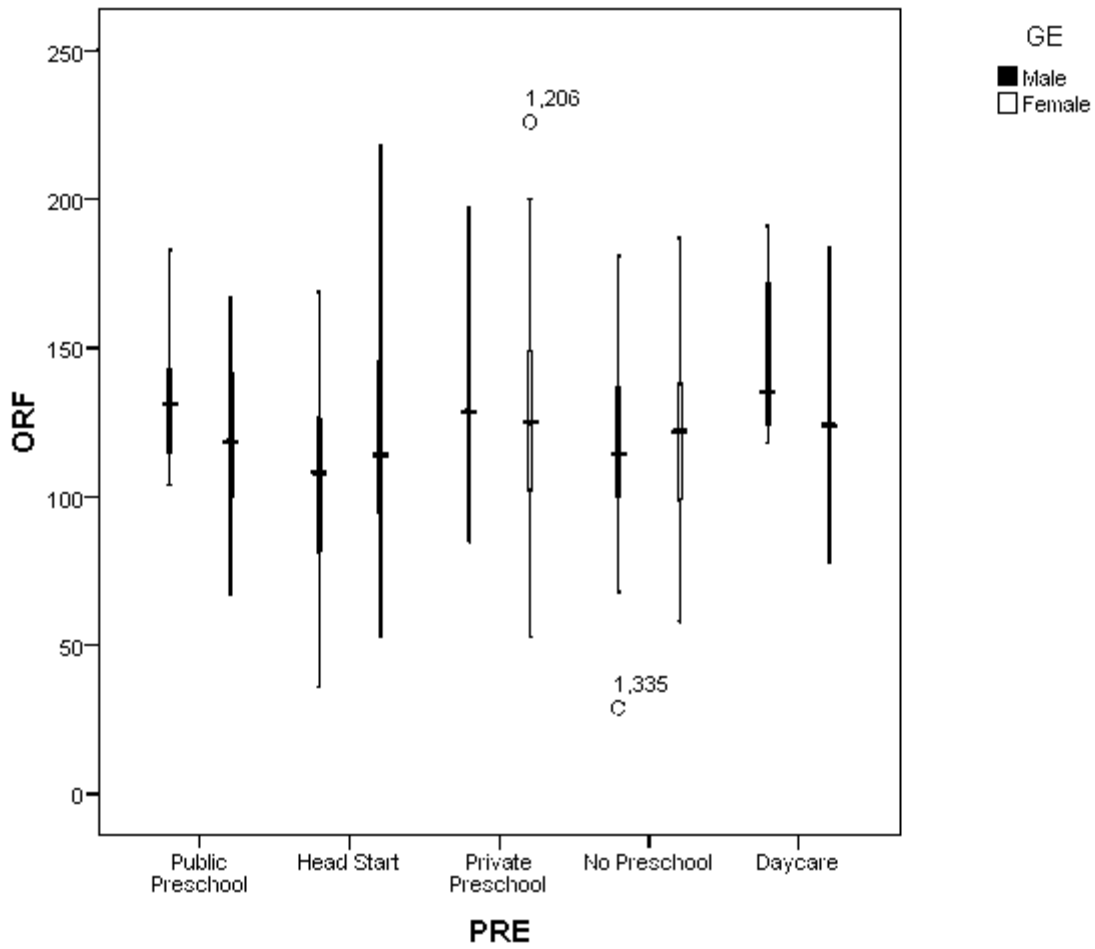


Figure 12. Boxplot for Oral Reading Fluency Scores by Preschool and Gender for Fourth Grade.

Note: o = an observation between 1.5 to 3.0 the interquartile range

ORF = Oral Reading Fluency

PRE = Type of preschool

Research Questions 37, 38, and 39

Research Question 37: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for fourth grade students for Retell Fluency (RF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 38: Are there differences in DIBELS scores for fourth grade students for Retell Fluency (RF) between male and female students?

Research Question 39: Do the differences in DIBELS scores for fourth grade students for Retell Fluency (RF) among the four types of preschool programs vary as a function of gender?

The following null hypothesis was considered: Ho37: There are no differences in DIBELS scores for fourth grade students for Retell Fluency (RF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool); Ho38: There are no differences in DIBELS scores for fourth grade students for Retell Fluency (RF) between male and female students; and Ho39: The DIBELS scores for fourth grade students for Retell Fluency (RF) among the five types of preschool programs do not vary as a function of gender.

A two-way analysis of variance (ANOVA) was conducted to evaluate the effects on Retell Fluency scores of type by preschool experience (Tennessee Voluntary Preschool, Head Start, daycare, private preschool, and no preschool) and gender (male and female). The means and standard deviations for Retell Fluency scores as a function of the factors are presented in Table 15. The ANOVA indicated no significant interaction between preschool and gender, $F(9, 224) = 1.51, p = .199, \text{partial } \eta^2 = .03$. No significant main effects were found for preschool, $F(9, 224) = 2.00, p = .096, \text{partial } \eta^2 = .03$ or for gender, $F(9, 224) = .58, p = .447, \text{partial } \eta^2 < .01$.

Null hypothesis H₀37 for interaction was retained. Null hypothesis H₀38 for interaction was retained. Null hypothesis H₀39 for interaction was retained. Figure 13 shows the distribution of fourth grade Retelling Fluency scores by preschool and gender.

Table 15

The Means and Standard Deviations for Retell Fluency for Fourth Grade by Type of Preschool

Type of Preschool	Gender	<i>M</i>	<i>SD</i>	<i>N</i>
Public Preschool	Male	61.50	16.51	6
	Female	55.30	30.20	10
	Total	57.62	25.45	16
Head Start	Male	45.22	20.07	23
	Female	54.95	25.57	38
	Total	51.28	23.95	61
Private Preschool	Male	52.10	18.44	20
	Female	51.69	19.97	42
	Total	51.82	19.34	62
No Preschool	Male	48.77	19.95	26
	Female	46.30	19.29	44
	Total	47.21	19.43	70
Daycare	Male	66.60	20.35	10
	Female	53.13	17.73	15
	Total	58.52	19.59	25
Total	Male	51.59	20.22	85
	Female	51.32	21.90	149
	Total	51.41	21.26	234

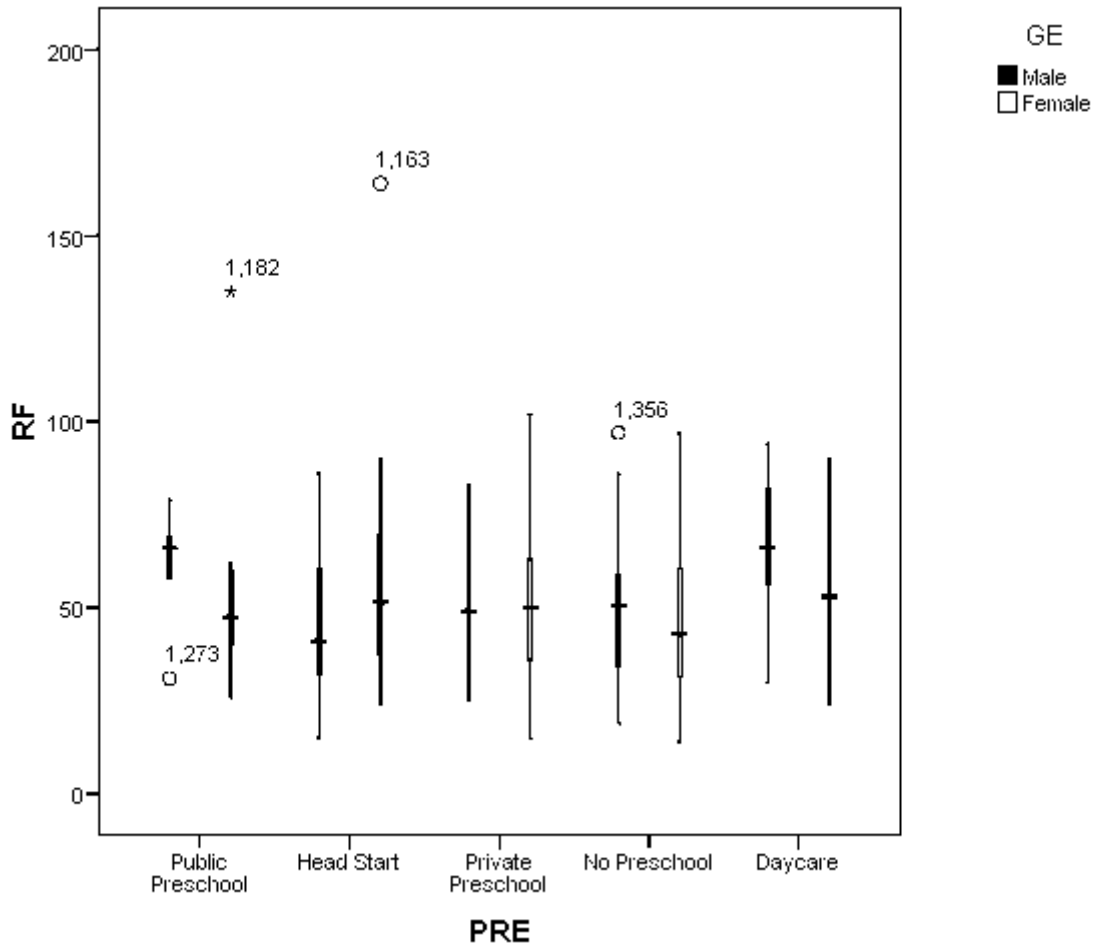


Figure 13. Boxplot for Retell Fluency Scores by Preschool and Gender for Fourth Grade.

Note: o = an observation between 1.5 to 3.0 the interquartile range

* = an observation more than 3.0 times the interquartile range

RF = Retell Fluency

PRE = Type of preschool

Research Questions 40, 41, and 42

Research Question 40: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for fifth grade students for Oral Reading Fluency (ORF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 41: Are there differences in DIBELS scores for fifth grade students for Oral Reading Fluency (ORF) between male and female students?

Research Question 42: Do the differences in DIBELS scores for fifth grade students for Oral Reading Fluency (ORF) among the four types of preschool programs vary as a function of gender?

The following null hypothesis was considered: Ho40: There are no differences in DIBELS scores for fifth grade students for Oral Reading Fluency (ORF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool); Ho41: There are no differences in DIBELS scores for fifth grade students for Oral Reading Fluency (ORF) between male and female students; and Ho42: The DIBELS scores for fifth grade students for Oral Reading Fluency (ORF) among the five types of preschool programs do not vary as a function of gender.

A two-way analysis of variance (ANOVA) was conducted to evaluate the effects on Oral Reading Fluency scores by type of preschool experience (Tennessee Voluntary Preschool, Head Start, daycare, private preschool, and no preschool) and gender (male and female). The means and standard deviations for Oral Reading Fluency scores as a function of the factors are presented in Table 16. The ANOVA indicated no significant interaction between preschool and gender, $F(9, 165) = 2.06, p = .089$, partial $\eta^2 = .05$, but significant main effects for preschool,

$F(9, 165) = 3.29, p = .013, \text{partial } \eta^2 = .07$. No significant main effects were found for gender, $F(9, 165) = .38, p = .538, \text{partial } \eta^2 < .01$. Null hypothesis H_{040} was rejected. Null hypothesis H_{041} was retained. Null hypothesis H_{042} was retained.

Follow-up analyses consisted of all pairwise comparisons among the five preschool groups. The Tukey HSD procedure was used to control for Type I error across the pairwise comparisons. The results of this analysis indicate that students who attended private preschool (Mean = 143.52) had significantly higher Oral Reading Fluency scores than those who attended Head Start (Mean = 121.08) or daycare (Mean = 114.43). Figure 14 shows the distribution of fifth grade Oral Reading Fluency scores by preschool and gender.

Table 16

*The Means and Standard Deviations for Oral Reading Fluency for Fifth Grade
by Type of Preschool*

Type of Preschool	Gender	<i>M</i>	<i>SD</i>	<i>N</i>
Public Preschool	Male	51.22	14.19	9
	Female	55.80	27.14	10
	Total	53.63	21.53	19
Head Start	Male	52.29	21.98	14
	Female	52.82	15.33	17
	Total	52.58	18.30	31
Private Preschool	Male	62.61	18.73	18
	Female	59.17	21.51	29
	Total	60.49	20.35	47
No Preschool	Male	54.44	24.10	16
	Female	48.56	15.29	27
	Total	50.74	18.99	43
Daycare	Male	59.13	28.48	8
	Female	61.80	18.18	5
	Total	60.15	24.19	13
Total	Male	56.37	21.48	65
	Female	54.45	19.38	88
	Total	55.27	20.25	153

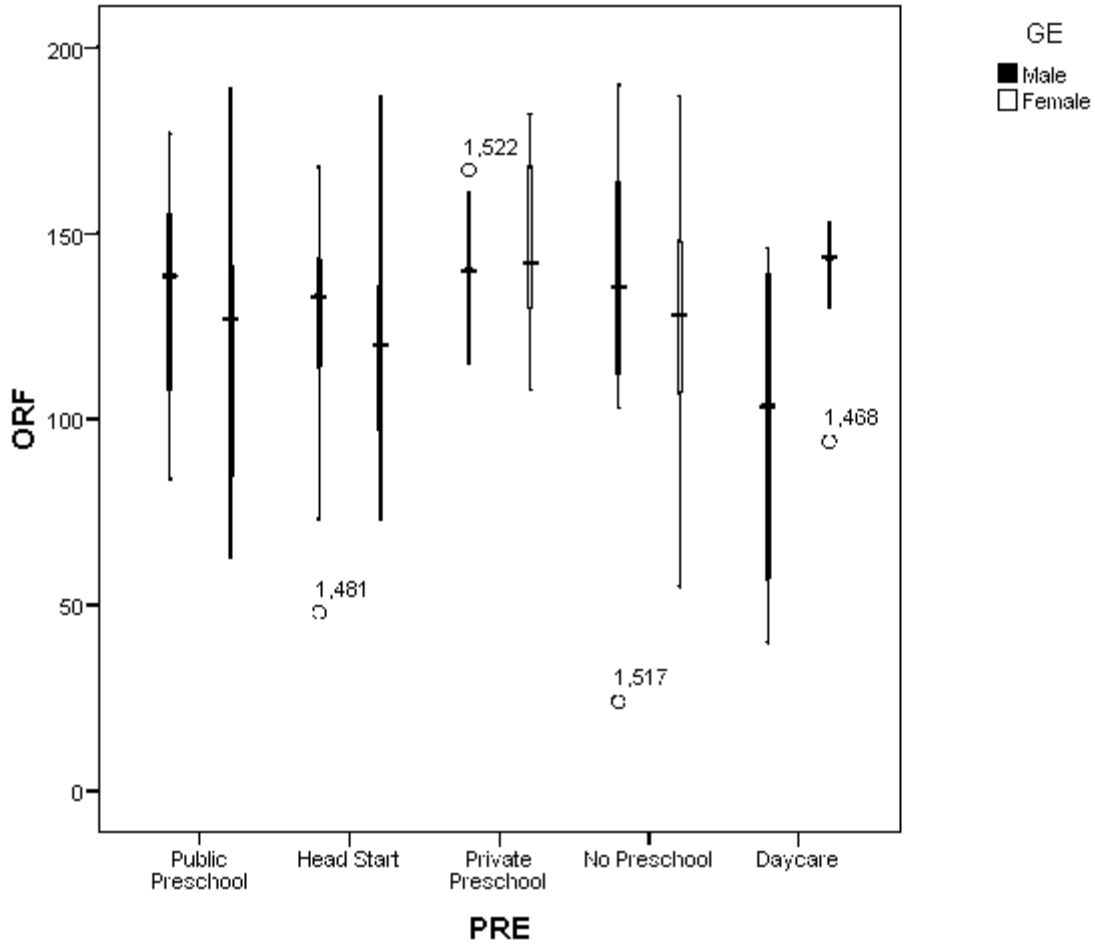


Figure 14. Boxplot for Oral Reading Fluency Scores by Preschool and Gender for Fifth Grade.

Note: o = an observation between 1.5 to 3.0 the interquartile range

ORF = Oral Reading Fluency

PRE = Type of preschool

Research Questions 43, 44 and 45

Research Question 43: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for fifth grade students for Retell Fluency (RF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 44: Are there differences in DIBELS scores for fifth grade students for Retell Fluency (RF) between male and female students?

Research Question 45: Do the differences in DIBELS scores for fifth grade students for Retell Fluency (RF) among the four types of preschool programs vary as a function of gender?

The following null hypothesis was considered: Ho43: There are no differences in DIBELS scores for fifth grade students for Retell Fluency (RF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool); Ho44: There are no differences in DIBELS scores for fifth grade students for Retell Fluency (RF) between male and female students; and Ho45: The DIBELS scores for fifth grade students for Retell Fluency (RF) among the five types of preschool programs do not vary as a function of gender.

A two-way analysis of variance (ANOVA) was conducted to evaluate the effects on Retell Fluency scores by type of preschool experience (Tennessee Voluntary Preschool, Head Start, daycare, private preschool, and no preschool) and gender (male and female). The means and standard deviations for Retell Fluency scores as a function of the factors are presented in Table 17. The ANOVA indicated no significant interaction between preschool and gender, $F(9, 143) = .30, p = .878, \text{partial } \eta^2 < .01$. No significant main effects were found for preschool, $F(9, 143) = 1.56, p = .187, \text{partial } \eta^2 = .04$ or gender, $F(9, 143) = .01, p = .935, \text{partial } \eta^2 < .01$. Null

hypothesis H₀43 was retained. Null hypothesis H₀44 was retained. Null hypothesis H₀45 was retained. Figure 15 shows the distribution of fifth grade Oral Reading Fluency scores by preschool and gender.

Table 17
The Means and Standard Deviations for Retell Fluency for Fifth Grade by Type of Preschool

Type of Preschool	Gender	<i>M</i>	<i>SD</i>	<i>N</i>
Public Preschool	Male	51.22	14.19	9
	Female	55.80	27.14	10
	Total	53.63	21.53	19
Head Start	Male	52.29	21.98	14
	Female	52.82	15.33	17
	Total	52.58	18.30	31
Private Preschool	Male	62.61	18.73	18
	Female	59.17	21.51	29
	Total	60.49	20.35	47
No Preschool	Male	54.44	24.10	16
	Female	48.56	15.29	27
	Total	50.74	18.99	43
Daycare	Male	59.13	28.48	8
	Female	61.80	18.18	5
	Total	60.15	24.19	13
Total	Male	56.37	21.48	65
	Female	54.45	19.38	88
	Total	55.27	20.25	153

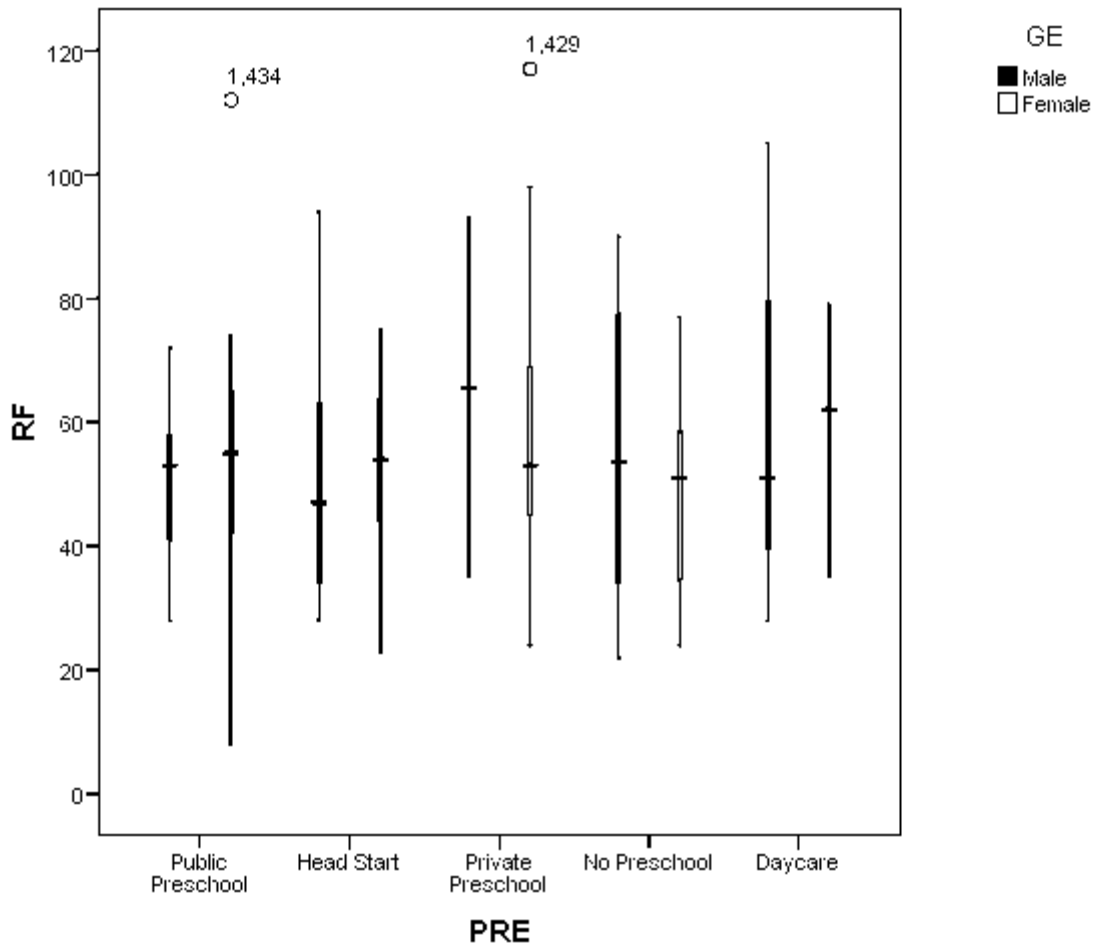


Figure 15. Boxplot for Retell Fluency Scores by Preschool and Gender for Fifth Grade.

Note: o = an observation between 1.5 to 3.0 the interquartile range

ORF = Oral Reading Fluency

PRE = Type of preschool

CHAPTER 5

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

This study found significant differences in the means of the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for students in kindergarten through fifth grades for some types of preschool programs and for some grades. No differences were found between males and females for any of the grades. The dependent variable was the scores on the Dynamic Indicators of Basic Early Literacy Skills (DIBELS). The DIBELS measures included in the study were Word Use Fluency (WUF), Initial Sound Fluency (ISF), Phoneme Segmentation Fluency (PSF), Nonsense Word Fluency (NWF), Oral Reading Fluency (ORF), and Retelling Fluency (RF). The independent variables were the type of preschool program attended prior to kindergarten and gender. The preschool programs included in the study were the Tennessee Voluntary Preschool program, Head Start, private preschools, daycare, or no preschool experience.

Summary of Findings

The statistical analyses were governed by the research questions introduced in Chapter 1 and clarified in Chapter 3. The dependent variable for each analysis was the score on the Dynamic Indicators of Basic Early Literacy Skills (DIBELS). The DIBELS scores were filed by individual schools with their local education agency's department of education offices. The independent variables were the type of preschool program students were enrolled in prior to beginning kindergarten (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool), and gender (male and female). The type of preschool program was obtained from surveys completed by the parents of students enrolled in grades kindergarten through fifth during the 2009–2010 school year.

Research Questions 1, 2, and 3

Research Question 1: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for kindergarten grade students for Letter Naming Fluency (LNF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 2: Are there differences in DIBELS scores for first grade students for Letter Naming Fluency (LNF) between male and female students?

Research Question 3: Do the differences in DIBELS scores for kindergarten students for Letter Naming Fluency (LNF) among the four types of preschool programs vary as a function of gender?

The scores for the Letter Naming Fluency measures for kindergartners ranged from 6 to 87. According to the DIBELS Administration and Scoring Guide (Moats, 2003) students scoring at 40 or above during the 7th to 10th month of school are at a low risk of poor reading and language outcomes prior to the next administration of the measure. The mean score for Letter Naming Fluency was 50.16. Generally students in the target school district scored well above the low risk benchmark. The two-way ANOVA found no significant interactions between the means for Letter Naming Fluency and the type of preschool by gender. A significant main effect was found for preschool. Students who attended a private preschool program including faith-based and commercial programs prior to beginning elementary school scored higher than students who had attended Tennessee's Voluntary Preschool for All program, Head Start, or daycare or received no formal preschool education outside the home. No significant main effect was found for gender.

Research Questions 4, 5, and 6

Research Question 4: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for kindergarten grade students for Phoneme Segmentation Fluency (PSF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 5: Are there differences in DIBELS scores for first grade students for Phoneme Segmentation Fluency (PSF) between male and female students?

Research Question 6: Do the differences in DIBELS scores for kindergarten students for Phoneme Segmentation Fluency (PSF) among the four types of preschool programs vary as a function of gender?

The scores for the Phoneme Segmentation Fluency measures for kindergartners ranged from 0 to 75. According to the DIBELS Administration and Scoring Guide (Moats, 2003) students scoring at 35 or above during the 7th to 10th month of school are considered established and at a low risk of poor reading and language outcomes prior to the next administration of the measure. The mean score for Phoneme Segmentation Fluency was 55.54. Generally students in the target school district scored well above the low risk benchmark. The two-way ANOVA found no significant interactions between the means for Phoneme Segmentation Fluency and the type of preschool by gender. A significant main effect was found for preschool. Students who attended a private preschool program including faith-based and commercial programs prior to beginning elementary school scored higher than students who had no formal preschool education outside the home. There were no significant differences for the Phoneme Segmentation Fluency scores among any of the other preschool groups.

Research Questions 7, 8, and 9

Research Question 7: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for kindergarten grade students for Nonsense Word Fluency (NSF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 8: Are there differences in DIBELS scores for first grade students for Nonsense Word Fluency (NSF) between male and female students?

Research Question 9: Do the differences in DIBELS scores for kindergarten students for Nonsense Word Fluency (NSF) among the four types of preschool programs vary as a function of gender?

The scores for the Nonsense Word Fluency measures for kindergartners ranged from 0 to 155. According to the DIBELS Administration and Scoring Guide (Moats, 2003) students scoring at 25 or above during the 7th to 10th month of school are at a low risk of poor reading and language outcomes prior to the next administration of the measure. The mean score for Nonsense Word Fluency was 40.21. Generally students in the target school district scored well above the low risk benchmark. The two-way ANOVA found no significant interactions between the means for Nonsense Word Fluency and the type of preschool by gender. The means for all other preschool programs were similar. There were no significant interactions or main effects.

Research Questions 10, 11, and 12

Research Question 10: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for first grade students for Phoneme Segmentation Fluency (PSF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 11: Are there differences in DIBELS scores for first grade students for Phoneme Segmentation Fluency (PSF) between male and female students?

Research Question 12: Do the differences in DIBELS scores for first grade students for Phoneme Segmentation Fluency (PSF) among the four types of preschool programs vary as a function of gender?

The scores for the Phoneme Segmentation Fluency measures for first graders ranged from 9 to 75. According to the DIBELS Administration and Scoring Guide (Moats, 2003) students scoring at 35 or above during the 7th to 10th month of school are considered established and at a low risk of poor reading and language outcomes prior to the next administration of the measure. The mean score for Phoneme Segmentation Fluency was 54.93. Generally first grade students in the target school district scored well above the low risk. The two-way ANOVA found no significant interactions between the means for Phoneme Segmentation Fluency and the type of preschool by gender. A significant main effect was found for preschool. Students who attended a private preschool program including faith-based and commercial programs prior to beginning elementary school scored higher than students who attended Head Start prior to elementary school. There were no significant differences for the Phoneme Segmentation Fluency scores among any of the other preschool groups.

Research Questions 13, 14, and 15

Research Question 13: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for first grade students for Nonsense Word Fluency (NSF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 14: Are there differences in DIBELS scores for first grade students for Nonsense Word Fluency (NSF) between male and female students?

Research Question 15: Do the differences in DIBELS scores for first grade students for Nonsense Word Fluency (NSF) among the four types of preschool programs vary as a function of gender?

The scores for the Nonsense Word Fluency measures for first graders ranged from 9 to 153. According to the DIBELS Administration and Scoring Guide (Moats, 2003) students scoring at 50 or above during the 7th to 10th month of school are at a low risk of poor reading and language outcomes prior to the next administration of the measure. The mean score for Nonsense Word Fluency was 74.81. Generally students in the target school district scored well above the low risk benchmark. The two-way ANOVA found no significant interactions between the means for Nonsense Word Fluency and the type of preschool by gender. A significant main effect was found for preschool. Students who attended a private preschool program including faith-based and commercial programs prior to beginning elementary school scored higher than students who attended Head Start prior to elementary school or had no formal preschool education outside the home. There were no significant differences for the Nonsense Word Fluency scores among any of the other preschool groups.

Research Questions 16, 17, and 18

Research Question 16: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for first grade students for Oral Reading Fluency (ORF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 17: Are there differences in DIBELS scores for first grade students for Oral Reading Fluency (ORF) between male and female students?

Research Question 18: Do the differences in DIBELS scores for first grade students for Oral Reading Fluency (ORF) among the four types of preschool programs vary as a function of gender?

The scores for the Oral Reading Fluency measures for first graders ranged from 6 to 159. According to the DIBELS Administration and Scoring Guide (Moats, 2003) students scoring above 40 or above are at a low risk of poor reading and language outcomes prior to the next administration of the measure. The mean score for Oral Reading Fluency was 60.37. Generally students in the target school district scored above the low risk benchmark. The two-way ANOVA found no significant interactions between the means for Oral Reading Fluency and the type of preschool by gender. A significant main effect was found for preschool. Students who attended a private preschool program including faith-based and commercial programs, Tennessee Voluntary Preschool for All, or had no formal preschool education outside the home prior to beginning elementary school scored higher than students who attended Head Start prior to elementary school. Students who attended a private preschool also scored significantly higher than those students who had no preschool experiences outside the home. There were no significant differences for the Oral Reading Fluency scores among any of the other preschool groups.

Research Questions 19, 20, and 21

Research Question 19: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for first grade students for Retell Fluency (RF) among the five

types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 20: Are there differences in DIBELS scores for first grade students for Retell Fluency (RF) between male and female students?

Research Question 21: Do the differences in DIBELS scores for first grade students for Retell Fluency (RF) among the four types of preschool programs vary as a function of gender?

The scores for the Retell Fluency measures for first graders ranged from 0 to 84. According to the DIBELS Administration and Scoring Guide (Moats, 2003) students with a score at or above 25% of their Oral Reading Fluency Score are at a low risk of poor reading and language outcomes prior to the next administration of the measure. The mean score for Oral Reading Fluency in first grade was 60.37. The mean score for Oral Reading Fluency (60.37) was multiplied by .25 to get a grade level benchmark score for Retell Fluency. The benchmark score for Retell Fluency was 15 words per minute. Using the first grade benchmark score for Retell Fluency, students in the target school district scoring at or above 15 words per minute achieved the low risk benchmark. The actual mean for Retell Fluency for first grade students was 24.83 words per minute. This result was 9.83 words per minute higher than the benchmark score of 15. The two-way ANOVA found no significant interactions between the means for Oral Reading Fluency and the type of preschool by gender. A significant main effect was found for preschool. Students who attended a private preschool program including faith-based and commercial programs, Tennessee's Voluntary Preschool for All program, scored higher than students who had no formal preschool outside the home prior to elementary school. There were no significant differences for the Retell Fluency scores among any of the other preschool groups.

Research Questions 22, 23, and 24

Research Question 22: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for second grade students for Oral Reading Fluency (ORF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 23: Are there differences in DIBELS scores for second grade students for Oral Reading Fluency (ORF) between male and female students?

Research Question 24: Do the differences in DIBELS scores for second grade students for Oral Reading Fluency (ORF) among the four types of preschool programs vary as a function of gender?

The scores for the Oral Reading Fluency measures for second graders ranged from 16 to 219. According to the DIBELS Administration and Scoring Guide (Moats, 2003) students scoring above 90 or above during the 7th to 10th month of school are at a low risk of poor reading and language outcomes prior to the next administration of the measure. The mean score for Oral Reading Fluency was 98.26. Generally students in the target school district scored above the low risk benchmark. The two-way ANOVA found no significant interactions between the means for Oral Reading Fluency and the type of preschool by gender. A significant main effect was found for preschool. Students that had attended a private preschool program including faith-based and commercial programs scored significantly higher than students who attended any other type of preschool program or had no formal preschool education outside the home prior to elementary school. There were no significant differences for the Oral Reading Fluency scores among any of the other preschool groups.

Research Questions 25, 26 and 27

Research Question 25: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for second grade students for Retell Fluency (RF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 26: Are there differences in DIBELS scores for second grade students for Retell Fluency (RF) between male and female students?

Research Question 27: Do the differences in DIBELS scores for second grade students for Retell Fluency (RF) among the four types of preschool programs vary as a function of gender?

The scores for the Retell Fluency measures for second graders ranged from 5 to 93. According to the DIBELS Administration and Scoring Guide (Moats, 2003) students with a score at or above 25% of their Oral Reading Fluency Score are at a low risk of poor reading and language outcomes prior to the next administration of the measure. The mean score for Oral Reading Fluency in second grade was 98.26. The mean score for Oral Reading Fluency (98.26) was multiplied by .25 to get a grade level benchmark score for Retell Fluency. The benchmark score for Retell Fluency was 24.57 words per minute. Using the second grade benchmark score for Retell Fluency, students in the target school district scoring at or above 24.57 words per minute achieved the low risk benchmark. The actual mean for Retell Fluency for second grade students was 45.41 words per minute. This result was 20.84 words per minute higher than the benchmark score of 24.57. The two-way ANOVA found no significant interactions between the means for Oral Reading Fluency and the type of preschool by gender. A significant main effect was found for preschool. Students that had attended a private preschool program including faith-

based and commercial programs scored higher than students who had attended Head Start prior to elementary school. There were no significant differences for the Retell Fluency scores among any of the other preschool groups.

Research Questions 28, 29, and 30

Research Question 28: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for third grade students for Oral Reading Fluency (ORF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 29: Are there differences in DIBELS scores for third grade students for Oral Reading Fluency (ORF) between male and female students?

Research Question 30: Do the differences in DIBELS scores for third grade students for Oral Reading Fluency (ORF) among the four types of preschool programs vary as a function of gender?

The scores for the Oral Reading Fluency measures for third graders ranged from 19 to 188. According to the DIBELS Administration and Scoring Guide (Moats, 2003) students scoring at 110 or above during the 7th to 10th month of school are at a low risk of poor reading and language outcomes prior to the next administration of the measure. The mean score for Oral Reading Fluency was 112.68. Generally students in the target school district scored above the low risk benchmark. The two-way ANOVA found no significant interactions between the means for Oral Reading Fluency and the type of preschool by gender. A significant main effect was found for preschool. Students who had attended a private preschool program including faith-based and commercial programs or had no formal preschool education outside the home prior to elementary school scored significantly higher than students who attended Head Start. There were

no significant differences for the Oral Reading Fluency scores among any of the other preschool groups.

Research Questions 31, 32, and 33

Research Question 31: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for third grade students for Retell Fluency (RF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 32: Are there differences in DIBELS scores for third grade students for Retell Fluency (RF) between male and female students?

Research Question 33: Do the differences in DIBELS scores for third grade students for Retell Fluency (RF) among the four types of preschool programs vary as a function of gender?

The scores for the Retell Fluency measures for third graders ranged from 9 to 119. According to the DIBELS Administration and Scoring Guide (Moats, 2003) students with a score at or above 25% of their Oral Reading Fluency Score are at a low risk of poor reading and language outcomes prior to the next administration of the measure. The mean score for Oral Reading Fluency in third grade was 112.68. The mean score for Oral Reading Fluency (112.68) was multiplied by .25 to get a grade level benchmark score for Retell Fluency. The benchmark score for Retell Fluency was 28.17 words per minute. Using the third grade benchmark score for Retell Fluency, students in the target school district scoring at or above 28.17 words per minute achieved the low risk benchmark. The actual mean for Retell Fluency for third grade students was 48.56 words per minute. This result was 20.39 words per minute higher than the benchmark score of 28.17. The two-way ANOVA found no significant interactions between the means for Oral Reading Fluency and the type of preschool by gender. No significant main effects were

found. There were no significant differences for the Retell Fluency scores among any of the other preschool groups.

Research Questions 34, 35, and 36

Research Question 34: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for fourth grade students for Oral Reading Fluency (ORF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 35: Are there differences in DIBELS scores for fourth grade students for Oral Reading Fluency (ORF) between male and female students?

Research Question 36: Do the differences in DIBELS scores for fourth grade students for Oral Reading Fluency (ORF) among the four types of preschool programs vary as a function of gender?

The scores for the Oral Reading Fluency measures for fourth graders ranged from 29 to 226. According to the DIBELS Administration and Scoring Guide (Moats, 2003), students scoring at 118 or above during the 7th to 10th month of school are at a low risk of poor reading and language outcomes prior to the next administration of the measure. The mean score for Oral Reading Fluency was 122.46. Generally students in the target school district scored above the low risk benchmark. The two-way ANOVA found no significant interactions between the means for Oral Reading Fluency and the type of preschool by gender. A significant main effect was found for preschool. Students who had attended a private preschool program, including faith-based and commercial programs, scored significantly higher than students who attended Head Start. There were no significant differences for the Oral Reading Fluency scores among any of the other preschool groups.

Research Questions 37, 38, and 39

Research Question 37: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for fourth grade students for Retell Fluency (RF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 38: Are there differences in DIBELS scores for fourth grade students for Retell Fluency (RF) between male and female students?

Research Question 39: Do the differences in DIBELS scores for fourth grade students for Retell Fluency (RF) among the four types of preschool programs vary as a function of gender?

The scores for the Retell Fluency measures for fourth graders ranged from 14 to 164. According to the DIBELS Administration and Scoring Guide (Moats, 2003) students with a score at or above 25% of their Oral Reading Fluency Score are at a low risk of poor reading and language outcomes prior to the next administration of the measure. The mean score for Oral Reading Fluency in fourth grade was 122.46. The mean score for Oral Reading Fluency (122.46) was multiplied by .25 to get a grade level benchmark score for Retell Fluency. The benchmark score for Retell Fluency was 30.62 words per minute. Using the fourth grade benchmark score for Retell Fluency, students in the target school district scoring at or above 30.62 words per minute achieved the low risk benchmark. The actual mean for Retell Fluency for fourth grade students was 51.54 words per minute. This result was 20.79 words per minute higher than the benchmark score of 30.62. The two-way ANOVA found no significant interactions between the means for Oral Reading Fluency and the type of preschool by gender. A significant main effect was found for preschool, however, the means for all other preschool programs were too similar to determine significance.

Research Questions 40, 41, and 42

Research Question 40: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for fifth grade students for Oral Reading Fluency (ORF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 41: Are there differences in DIBELS scores for fifth grade students for Oral Reading Fluency (ORF) between male and female students?

Research Question 42: Do the differences in DIBELS scores for fifth grade students for Oral Reading Fluency (ORF) among the four types of preschool programs vary as a function of gender?

The scores for the Oral Reading Fluency measures for fifth graders ranged from 24 to 190. According to the DIBELS Administration and Scoring Guide (Moats, 2003) students scoring at 124 or above during the 7th to 10th month of school are at a low risk of poor reading and language outcomes prior to the next administration of the measure. The mean score for Oral Reading Fluency was 129.26. Generally students in the target school district scored above the low risk benchmark. The two-way ANOVA found no significant interactions between the means for Oral Reading Fluency and the type of preschool by gender. A significant main effect was found for preschool. Students who had attended a private preschool program including faith-based and commercial programs prior to elementary school scored significantly higher than students who attended Head Start. Students who attended a private preschool program also scored significantly higher than student who attended a daycare program. There were no significant differences for the Oral Reading Fluency scores among any of the other preschool groups.

Research Questions 43, 44, and 45

Research Question 43: Are there differences in Dynamic Indicators of Basic Early Literacy Skills (DIBELS) scores for fifth grade students for Retell Fluency (RF) among the five types of preschool programs (Tennessee Voluntary Preschool, Head Start, private preschool, daycare, and no preschool)?

Research Question 44: Are there differences in DIBELS scores for fifth grade students for Retell Fluency (RF) between male and female students?

Research Question 45: Do the differences in DIBELS scores for fifth grade students for Retell Fluency (RF) among the four types of preschool programs vary as a function of gender?

The scores for the Retell Fluency measures for fifth graders ranged from 8 to 117. According to the DIBELS Administration and Scoring Guide (Moats, 2003) students with a score at or above 25% of their Oral Reading Fluency Score are at a low risk of poor reading and language outcomes prior to the next administration of the measure. The mean score for Oral Reading Fluency in fifth grade was 143.52. The mean score for Oral Reading Fluency (143.52) was multiplied by .25 to get a grade level benchmark score for Retell Fluency. The benchmark score for Retell Fluency was 35.88 words per minute. Using the fifth grade benchmark score for Retell Fluency, students in the target school district scoring at or above 35.88 words per minute achieved the low risk benchmark. The actual mean for Retell Fluency for fifth grade students was 55.27 words per minute. This result was 19.39 words per minute higher than the benchmark score of 35.88. The two-way ANOVA found no significant interactions between the means for Oral Reading Fluency and the type of preschool by gender. No significant main effects were found for preschool.

Conclusions

The results of the analysis for research questions 1, 2, and 3 indicate that no significant interaction exists for the means of the Letter Naming Fluency scores among the different preschool programs as a function of gender. However, the type of preschool attended was found to be significant. Those students who attended private preschools are able to identify more randomly ordered upper and lower case letters in the allotted time than their peers who attended the other preschool settings. The means for the other preschool options were above the 40-letter benchmark established by Good and Kaminski (2002).

The results of the analysis research questions 4, 5, 6, 10, 11, and 12 indicate that no significant difference exists between the means of the Phoneme Segmentation Fluency scores and the different preschool programs as a function of gender. However, the type of preschool attended was found to be significant for both kindergarten and first grade. Those kindergarten students who attended private preschools are able to segment more words into their individual phonemes in the allotted time than their peers who received no formal preschool education outside the home. First grade students who attended a private preschool were significantly more fluent at segmenting words into their phonemes than those students who attended Head Start. The means for all of the preschool options were above the 35-word benchmark established by Good and Kaminski (2002).

The results of the analysis for research questions 7, 8, 9, 13, 14, and 15 indicate that the type of preschool attended was found to be significant for first grade but not for kindergarten. The nonsense word scores for first grade seemed to indicate that first grade students who attended private preschools were able to pronounce significantly more nonsense words in the allotted time than students who attended no formal preschool education outside the home or

Head Start. The means for all of the preschool options were above the 25-word benchmark for kindergarten and 50-word benchmark for first grade established by the Good and Kaminski (2002).

The results of the analysis for research questions 16, 17, 18, 22, 23, 24, 28, 29, 30, 34, 35, 36, 40, 41, and 42 indicate that no significant difference exists between the means of the Oral Reading Fluency scores and the different preschool programs as a function of gender. However, the type of preschool attended was found to be significant for grades one through five. Those students in grades one through five who attended private preschools were able to read a grade-level passage with greater accuracy and fluency in the allotted time than their peers who received instruction from Head Start programs. First grade students who attended a private preschool, public preschool, or had no formal preschool training outside the home were significantly more accurate and fluent at reading grade-level passages than those students who attended Head Start. Second grade students who attended private preschool were also significantly more accurate and fluent in their reading than students who had attended public preschool or had no formal preschool education outside the home. Third grade students who attended private or public preschool or had no formal preschool experience were significantly more accurate and fluent readers than Head Start students. The accuracy and fluency of fifth grade students who attended private preschool was significantly better than students who attended Head Start or daycare.

Based on the means of fourth grade students and the preschool options available to them, students who attended private preschool, public preschool, or daycare were more accurate and more fluent readers than students who attended Head Start or students who had no formal preschool training outside the home. Generally students with private preschool experience were better oral readers than students from other preschool settings. With the exception of Head Start,

all other preschool programs for first, second, and third graders generally met or exceeded the benchmark set by the creators of the DIBELS assessment (Good & Kaminski, 2002). For third grade, students who had attended all preschool settings except for public and Head Start generally met or exceeded the benchmark established by the creators of the assessment. Fifth grade students who attended public preschool, private preschool, and daycare met or exceeded the benchmark established by the creators of the assessment. It should be noted that the difference between the actual mean of the sample and the established benchmark declined from 20.37 points in grade one to 2.68 points in third grade. The difference between the mean and the benchmark increased only slightly for fourth grade (4.46) and fifth grade (5.26). These results were consistent with previous research findings that the impact of preschool declines during the first 3 years of elementary school before leveling off in the last 2 years (Feinburg, Burchinal, Clifford, & Yazejian, 1999).

The results of the analysis for research questions 19, 20, 21, 25, 26, 27, 31, 32, 33, 37, 38, 39, 43, 44, and 45 indicate that no significant difference exists between the means of the Retelling Fluency scores and the different preschool programs as a function of gender. The type of preschool a student attended prior to elementary school was found to be significant for grades one and two. Those students in grade one who attended private preschools were able to comprehend a grade-level passage more easily than their peers who had no formal preschool education outside the home. Second grade students who attended a private preschool were able to comprehend a grade-level passage more easily than those students who attended Head Start. Based on the means of fifth grade, males were better at comprehending a grade-level passage than were females.

Generally students with private preschool experience were better able to comprehend the text they read. The other preschool programs generally met or exceeded the 25% benchmark set by the creators of the DIBELS assessment (Good & Kaminski, 2002).

In general the results of this study indicate that students in the target county are scoring above the benchmarks. However, differences do exist. The differences between private preschool and the other preschool groups may be attributed to the socioeconomic status of the family. Historically, wealthier families have sent their children to private institutions, while poorer families relied on programs established by the state and federal government to educate the very young (Cahan, 1989). This is a trend that continues into the present. The curriculum and quality of these programs may also be a factor in the differences between the scores.

Recommendations for Practice

The results of this study suggest that preschool is an effective intervention for preparing students for reading instruction during the elementary years. All types of preschools should evaluate their programs in an effort to improve or establish a curriculum that supports the students' letter identification skills, phoneme segmentation skills, and comprehension skills. The declining mean scores from kindergarten to third grade suggest that students' progress should be monitored frequently and remediated when necessary regardless of preschool experience.

Recommendations for Further Research

Logic would indicate that students without the opportunities and life experiences of the middle and upper socioeconomic groups would benefit from the early childhood experiences provided by preschool programs both private and public. The current increase in accountability for teachers and students requires educators to identify and implement effective programs and strategies that will result in increased performance measures. More research needs to be

conducted to clarify the effectiveness of all preschool programs. Research should be conducted to determine why certain preschool programs are more successful than others. The following recommendations are intended to expand the knowledge base about preschools and school readiness.

1. This study should be replicated using a larger population.
2. A comparison study of preschool experience and achievement should be completed with other local education agencies in the state, region, and nation.
3. A quantitative study investigating the role of kindergarten entry age and preschool experience on achievement should be conducted.
4. This study should be replicated using other formative and summative assessment data.
5. This study should be replicated to include data for mathematics, science, and social studies.
6. This study should be replicated using data from students in secondary education to investigate the long-term effects of preschool experience.
7. The study should be replicated using graduation data for the region, state, and nation.
8. The study should be replicated while controlling for family income.

Preschool education appeared to make a difference in preparing students for reading instruction during the elementary school years. While this study showed that students who attended private preschool made significantly higher scores in some areas of the DIBELS assessment, the other preschool settings with the exception of Head Start were also effective in

that the scores for these groups were above the low risk benchmark. In general, students in the target county were performing beyond expectations.

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APPENDICES

APPENDIX A

Letter from the Hamblen County Director of Schools

Jan. 27. 2010 9:20AM

No. 5042 P. 1/1

JAN 26 2010

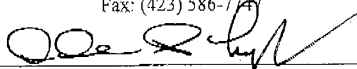
REQUEST FOR PERMISSION TO CONDUCT RESEARCH
IN HAMBLEN COUNTY SCHOOLS

1. Name and mailing address of the researcher(s):
David Freeman
1409 Lonesome Oak Lane
Russellville, TN 37860
2. Telephone number where the researcher(s) can be reached in the daytime:
423-586-2062
3. Position(s) of the principal researcher:
 undergraduate student, graduate student, college professor
(circle one and specify institution) East Tennessee State University
 Hamblen County employee (specify job and location)
Third Grade Teacher; Lincoln Heights Elementary School
 Other (specify occupation and affiliated institution, if any)
4. Exact Title of the Proposed Study:
A Comparison of Preschool Programs and DIBELS Scores in Elementary Schools
5. Attach the following items:
 - A. Brief description of the proposed study which is not limited to but must include, (1) purpose; (2) targeted population – who and how many; (3) data collection procedures; (4) estimated time required by Hamblen County Schools participants; and (5) projected value of the study to Hamblen County Schools, if any
 - B. Single copies of all questionnaires, surveys, tests, answer sheets, structured interviews, or other instruments that will be used by Hamblen County Schools participants
 - C. Single copies of cover letters, copies of instructions, parent permission statements (for student participation), etc.
6. Approximate proposed times for beginning and ending the study:
February 22, 2010 to April 30, 2010

Above material should be sent to :

Dr. Dale P. Lynch
Hamblen County Schools
210 East Morris Boulevard
Morristown, TN 37813
Phone: (423) 586-7700
Fax: (423) 586-7747

APPROVED*


Director, Hamblen County Schools

DATE: 1/26/10

*Prior to approval, a personal interview may be required to clarify information provided.
NOTE: Participation will be at the discretion of the principal and voluntary on the part of students and parents

APPENDIX B
Survey Documents

David Freeman
zcdf14@goldmail.etsu.edu
March , 2010

Dear Hamblen County Families,

My name is David Freeman. I am a third grade teacher at Lincoln Heights Elementary School in Hamblen County. I have been teaching in the county for 15 years. I have recently returned to graduate school to obtain my Doctor of Education degree from East Tennessee State University. I am required to complete a research project prior to graduation. I am very interested in the different preschool program options available to families in our area and how well they prepare students for the rigors of elementary education. Please read this letter carefully before you decide to participate in the study.

Attached you will find a brief survey requesting basic information about the children in your home. I am requesting the child's name, so I can match it up with the Oral Reading Fluency scores on the DIBELS assessment that is currently given to most children in Hamblen County Schools. The survey requires less than five minutes to complete. You will not be required to complete additional tasks once the survey is returned to your child's school.

Every effort will be made to see that your survey results are kept confidential. Your child will be assigned a numerical code, and the original survey will be destroyed at the conclusion of the study. Your child will not be identified by name or in any other manner in the final document of the study. Further, there will be no information linked to a particular school. Although your rights and privacy will be maintained, the Secretary of the Department of Health and Human Services and ETSU IRB will have access to the research records. Your records will be kept completely confidential according to current legal requirements. They will not be revealed unless required by law, or as noted above.

Your participation in my research is greatly appreciated but not required. You may choose **not** to return the survey. Additionally, you may ask that your child be withdrawn from the study at any time without consequence to your child by sending an email to zcdf14@goldmail.etsu.edu or calling 423-586-2062 ext. 2539. You or your child may not receive any direct benefits by participating in my survey. The findings may be beneficial to policy makers in making decisions about future preschool programs.

For you and your child to be included in the study, parents are required to sign the consent form below. No student name, teacher, family member, school, etc. will be identifiable to anyone, including the researcher, after the data is entered into the statistical analysis software. All data will be destroyed at the conclusion of the study.

Ver. 04/09/10


APPROVED
By the ETSU IRB

DOCUMENT VERSION EXPIRES

page 1 of 2

APR 1 9 2010

Subject Initials _____

APR 1 9 2010
by 
IRB Coordinator

ETSU IRB


If you have additional questions about this study or your rights as a participant, you may contact me through my ETSU email address: zcdf14@goldmail.etsu.edu or the ETSU IRB office. If you have any questions or concerns about the research and want to talk to someone independent of the research team or you can't reach the study staff, you may call an IRB Coordinator at 423/439-6055 or 423/439-6002.

By signing this letter of consent, you are agreeing to participate in the study by completing the survey. Please retain a copy of the Informed Consent for your records. You are also giving the researcher permission to obtain the student's DIBELS information from the school system and to allow the scores to be used as part of the research study. I thank you for your assistance.

Signature of Parent

Date

APPROVED
By the ETSU IRB

APR 21 2010
By 
Chair IRB Coordinator

DOCUMENT VERSION EXPIRES

APR 12 2011

ETSU IRB

Ver. 04/09/10

page 2 of 2

Subject Initials _____

David Freeman
zcdf14@goldmail.etsu.edu
April ,2010

Estimados Padres del Condado Hamblen:

Me llamo David Freeman. Soy maestro de tercer grado en la Escuela Primaria de Lincoln Heights en el Condado Hamblen. He estado enseñando en el condado por 15 años.

He regresado recientemente a la Universidad de Graduados para obtener mi Doctorado en Enseñanza Superior de Educación en la Universidad de East Tennessee State. Me han requerido a completar un proyecto de investigación antes de la graduación. Estoy muy interesado en las opciones de diferentes programas de pre-escuela disponibles a las familias en nuestra area y como ellos están preparando a los estudiantes para los rigores de la educación primaria. Por favor, lea esta carta cuidadosamente antes de que usted decida a participar en este estudio.

Junto a la forma, usted encontrará una encuesta breve pidiendo una información básica sobre los niños en su casa. Estoy pidiendo el nombre del niño para yo poder coincidir los resultados en la Fluencia Oral de Lectura en la evaluación de los DIBELS que actualmente se le han dado a casi todos los niños en las Escuelas del Condado Hamblen. Su niño será asignado a un código numérico, y la encuesta original sera destruida en la conclusion del estudio. Su niño no será identificado por nombre ó en ninguna otra manera en el documento final del estudio. Su participación en mi investigación será muy apreciada, pero no es requerido. Usted puede escoger de **no** devolver la encuesta ó solicitar a que su niño sea eliminado del estudio a cualquier momento sin ningunas consecuencias a su niño. Aunque sus derechos y privacidad serán mantenidas, el Secretario del Departamento de Salud y Servicios Humanos tendrán acceso a las formas de la investigación. Sus formas serán mantenidas completamente confidencial de acuerdo con los requerimientos legales y actuales. No serán revelados a menos que sea requerido por ley ó como se ha mencionado arriba.

Su participación en mi investigación será muy apreciada, pero no es requerido. Usted puede escoger de **no** devolver la encuesta ó solicitar a que su niño sea eliminado del estudio a cualquier momento sin ningunas consecuencias a su niño en enviar un email a zcdf14@goldmail.etsu.edu ó llamar al 423-586 – 2062 ext. 2539. Usted ó su niño no recibirán ningun beneficio directo en participar en mi encuesta. Los resultados pueden ser beneficiar a los que preparan las polizas en hacer decisiones sobre el futuro de los programas pre-escolares.

Los padres tienen que firmar la forma de consentimiento para que sus niños sean incluidos en el estudio. Ningun nombre del estudiante, maestro, miembro de la familia, escuela, etc, serán identificados a nadie, incluyendo al investigador despues que ha sido entrado en el análisis estadístico del software. Toda información sera destruída a la conclusion del estudio.

Ver. 04/09/10

APPROVED
By the ETSU IRB

DOCUMENT VERSION EXPIRES

page 1 of 2 APR 12 2010 Subject Initials _____

ETSU IRB


By PG
Chair IRB Coordinator

Si usted tiene preguntas adicionales sobre este estudio ó sus derechos como participante, usted puede conectarse conmigo a través de mi email de ETSU: zcdf14@goldmail.etsu.edu ó a la oficina del ETSU IRB. Si tiene cualquier preguntas ó preocupaciones sobre la investigación y desea hablar con alguien independiente fuera del equipo de la investigación ó no puede localizar a los empleados del estudio, usted puede llamar a un coordinador del IBR al 423/439 – 6055 ó al 423/439-6002.

Al firmar esta carta de consentimiento, usted estará de acuerdo a participar en el estudio al completar esta encuesta. Por favor, guarde una copia del consentimiento informado para sus archivos. Usted le está dando al investigador permiso para obtener la información de los DIBELS del estudiante del sistema de escuela y permitir los resultados ser usados como parte del estudio de la investigación.

Nombre del Padre

Fecha

APPROVED
By the ETSU IRB
APR 13 2010
By: 
Chair-IRB Coordinator

DOCUMENT VERSION EXPIRES

APR 13 2010

ETSU IRB

Preschool Experience Survey

Student's Name (please print) _____

Parent's Name (please print) _____

Current Grade:

- | | |
|---------------------------------------|---------------------------------|
| <input type="checkbox"/> Kindergarten | <input type="checkbox"/> Third |
| <input type="checkbox"/> First | <input type="checkbox"/> Fourth |
| <input type="checkbox"/> Second | <input type="checkbox"/> Fifth |

Gender of Student:

- Male
- Female

Ethnicity of Student:

- Hispanic
- African-American
- Asian
- Pacific Islander
- Caucasian (white)
- _____

Did your child attend preschool?

- Yes
- No

If you answered "yes", what type of preschool did the student attend?

- Private (church, business, etc)
- Public (school system)
- Head Start
- Daycare
- Other

If you chose "other", please explain:

Encuesta de Experiencia Pre-escolar

Nombre del Estado (manuscrito) _____

Nombre del Padre (manuscrito) _____

Grado Actual:

- | | |
|---------------------------------------|----------------------------------|
| <input type="checkbox"/> Kindergarten | <input type="checkbox"/> Tercero |
| <input type="checkbox"/> Primero | <input type="checkbox"/> Cuarto |
| <input type="checkbox"/> Segundo | <input type="checkbox"/> Quinto |

Género del estudiante:

- Masculino
 Femenino

Etnicidad del Estudiante:

- Hispánico
 Africano-Americano
 Asiático
 Isleno del Pacífico
 Caucásico o (raza blanca)

¿Su niño asistió la pre-escuela?

- Si
 No

¿Si su respuesta "si", que tipo de pre-escuela el estudiante asistió?

- Privada (iglesia, negocio, etc)
 Pública (sistema escolar)
 Head Start
 Guardería Infantil (Daycar)
 Otro

Si escogio "otro", por favor explique: _____

VITA

CHARLES D. FREEMAN

Personal Data: Date of Birth: June 15, 1969
 Place of Birth: Morristown, Tennessee
 Marital Status: Single

Education: Public Schools, Morristown, Tennessee
 B.A. Psychology, University of Tennessee, Knoxville, Tennessee
 1992
 M.A. Curriculum and Instruction, Carson-Newman College,
 Jefferson City, Tennessee 1996
 Ed.S. Administration and Supervision, Lincoln Memorial
 University, Harrogate, Tennessee 2005
 Ed.D. Educational Leadership and Policy Analysis, East Tennessee
 State University, Johnson City, Tennessee 2010

Personal Experience: Teacher, Lincoln Heights Elementary School; Morristown,
 Tennessee, 1997-2010
 Principal Designee, Lincoln Heights Elementary School;
 Morristown, Tennessee, 2006 - 2010