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Structured PreKindergarten: Is it a Bridge for the Reading Achievement Gap for Hispanic Kindergarten Students?

Carol Hayes Artis

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By
Carol H. Artis

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Approval Page

This dissertation was submitted by Carol Artis under the direction of the persons listed below. It was submitted to the Gardner-Webb University School of Education and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Gardner-Webb University.

_____	_____
Kathi Gibson, Ph.D. Committee Chair	Date
_____	_____
Jim Palermo, Ed.D. Committee Member	Date
_____	_____
Danny Stedman, Ed.D. Committee Member	Date
_____	_____
Jeffrey Rogers, Ph.D. Dean of the Gayle Bolt Price School of Graduate Studies	Date

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Behind Every Good Woman is a Tribe of Women Who Has Her Back.

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Trust in God with all your heart and lean not to your own understanding (Proverbs 3:5)

For I know the plans I have for you. They are plans for good and not for disaster, to give you a future and a hope. (Jeremiah 29:11 NLT)

Don't worry about anything instead, pray about everything. (Philippians 4:6 NLT)

And we know that God causes everything to work together for the good for those who love God and are called according to his purpose. (Romans 8:28 NLT)

Love is patient, love is kind. It does not envy, it does not boast, it is not proud. It does not dishonor others, it is not self-seeking, it is not easily angered, it keeps no record of wrongs. Love does not delight in evil but rejoices with truth. It always protects, always trusts, always hopes, always perseveres. Love never fails. (1 Corinthians 13:3-8 NIV)

Abstract

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Educational journals, researchers, and practitioners assert that prekindergarten yields positive academic and socialization results for those who attend (Neuman, 2007; U.S. Department of Health and Human Services, Administration for Children and Families, 2010). This mixed-methods study was conducted to examine the impact of the prekindergarten program in County X Public School District on the kindergarten reading performance of Hispanic students. The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) was the instrument used for measurement. This subgroup's accountability results and school performance reflect a significant gap as compared to White students. Hispanic students, whose presence in North Carolina schools is increasing yearly, are considered at risk or in need of intense interventions. Prekindergarten is one intervention. Determining the impact of prekindergarten on literacy skills in kindergarten may provide educators and legislators the leverage needed to advocate for additional funding to support prekindergarten initiatives. This study examined the reading performance of Hispanic students in kindergarten by comparing the scores of students who attended prekindergarten in County X to the scores of students who did not attend prekindergarten. This causal-comparative study entailed repeated *t* tests. As part of this study, kindergarten teachers were interviewed, and their responses were coded and analyzed for categories and themes.

Table of Contents

Chapter 1: Introduction

Education is under significant scrutiny. While some educational stakeholders rely on research and theory for answers, other stakeholders look solely at testing and accountability results. High-stakes testing has been the impetus for sweeping educational reform. The No Child Left Behind Act of 2001 (NCLB) was adopted for the purpose of addressing reading deficiencies within elementary groups and subgroups (U.S. Department of Education [USDE], 2002). The North Carolina Read to Achieve Legislation, approved in 2012, is a part of the Excellent School Act. The law includes specific clauses designed to improve reading results for students in kindergarten through third grade (North Carolina Department of Public Instruction [NCDPI], 2014). Also, the law provides financial resources to school districts as they work to improve the reading ability of students. At this writing, the impact of this law is still unknown, but an analysis conducted by the North Carolina General Assembly revealed that about a third of North Carolina's K-3 students scored at Level I or Level II in reading, which suggested deficiencies. Nevertheless, as the new law is implemented, the expectation is that the number of students below grade level will decrease by 1% each year so that by the school year 2016-2017, only 29% of the students would be scoring at Level I and II (Impact Analysis, n.d.).

In recent years, North Carolina received several federal grants such as Reading First and Race to the Top with reading comprehension as the point of focus for each grant. Beginning in 2000, Reading First focused on implementing proven methods of early reading instruction in classrooms. Through Reading First, states and school districts received financial support to implement research-based reading strategies along with assessment tools (OIG Audit Report, n.d.). The Race to the Top grant funded bold,

locally directed improvements. Program grantees served as innovation laboratories seeking to advance new ways to educate students through a personalized approach (USDE, 2014). In spite of wide-scale educational interventions and remediation, test scores continue reflecting the need for additional measures. Without a doubt, reading is key to success in all content. As students transition into third and fourth grades, reading proficiency is important. During these grades, the curriculum shifts, and students must be able to use reading skills to perform required tasks in all subjects. According to Stevens (2010), when student reading skills are not at grade level by the fourth grade, they struggle in all subjects.

According to the National Center for Education Statistics (NCES), an organization that tracked a sample of students ages 9, 13, and 17 from 1991 to 2010 in reading, Caucasian students consistently scored higher than Hispanic and African-American students in reading (USDE, 2014). Many of the subgroups of students in this nation's schools do not perform well on state tests, nor do they graduate at the rate of their peers. The academic deficits of North Carolina Hispanic students parallel other Hispanic students in America.

In the spring of 2015, across the state of North Carolina, only 48.8% of the Hispanic population scored at the proficient level on the end-of-grade assessment administered to students in Grades 3 through 8. The same assessment showed that only 34.9% were considered college and career ready. During that same that testing cycle, only 48.5% of the Hispanic students in North Carolina high schools scored on grade level. In County X, a low wealth public school district in North Carolina designated for this study, only 37.5% of all Hispanic students tested in Grades 3-8 scored proficient on the end-of-grade assessment in the spring of 2015; and even more alarming, for third

grade, only 36.9% of the students tested scored proficient in reading (North Carolina State Report Card, 2015).

Funkhouser (2013) stated that the growth in the United States' population from 2000 to 2010 was over 50% Hispanic. Between 1990 and 2012, the Hispanic growth rate in the western part of the United States was 71% of the net growth, 116% of the net growth in the South, 112% of the net growth in the Midwest, and 51% of the net growth in the Northeast. The states with the most substantial increases in Hispanic population were North Carolina, Arkansas, Georgia, Tennessee, and Nevada (Verdugo, 2012).

The rapid influx of Hispanic residents is impacting community institutions such as schools. The 2010 U.S. Census data showed that over 800,000 or 8% of North Carolina's population is Hispanic. Further, over 12,000 Hispanics make their home in County X (U.S. Census Bureau, 2010). The rapid growth of Hispanic students, coupled with their educational deprivation, highlight the need for schools to give strategic attention to this subgroup as early as possible.

In County X, 2,814 Spanish speaking students are served in the English Second Language (ESL) program. Additionally, tutors who support instruction for this group are employed at the schools whose demographic consists of a significant number of ESL students. Language is a great impediment to immigrating Hispanic students and adults transitioning into American life. One in five Hispanics conveyed that they have difficulty speaking and understanding English (Verdugo, 2012).

Each year, thousands of students enter their first school experience already behind; this is especially true for minority students (The Journal News, 2005). Pew Charitable Trusts experts believe that language skills are acquired before children enter school. Therefore, states wanting to make significant improvements in reading need to

target parents and children before kindergarten (Pew, 2013). Support of early intervention programs such as structured prekindergarten and Head Start is longstanding. It is the consistent goal of these programs to promote school and kindergarten readiness in the academic areas as well as impact social and emotional development (Barnett, Lamy, & Jung, 2005; Cody, 1993; Neuman, 2007; U.S. Department of Health and Human Services, Administration for Children and Families, 2010). Forty states currently fund prekindergarten programs, compared to half that number 10 years ago. Overall state funding for prekindergarten increased by $116 million in 2013-2014 (National Institute for Early Education Research [NIEER], 2014). Many of the programs target children of poverty (Carter, 2009). President Obama's early pledge for large-scale funding for structured prekindergarten programs has kept prekindergarten on the lips of political pundits and, therefore, a viable consideration for budget allocations.

The attention to prekindergarten is not without merit. Structured prekindergarten and Head Start programs, hereafter referred to as prekindergarten, are those in which highly qualified teachers lead the children in a more structured way by planning activities and providing social and cognitive development strategies. Prekindergarten programs are structured to prepare students for the kindergarten setting (Brown, 2012). "These pre-kindergarten classrooms capitalize on the developmental stages of the brain while teaching socialization, thus giving children an effective foundation for school and life" (Wat, 2007, p. 2). Wright, Diener and Kay (2000) believed "that students who lack structured, quality childhood experiences, have little chance for success in school and therefore, the cycle of poverty continues" (p. 100); therefore, prekindergarten programs and early literacy programs are educational practices that must become commonplace in efforts to prevent academic failure of ethnic minorities.

Unfortunately, the data show that Hispanic students have not enrolled in prekindergarten programs at high rates. Nationally, in 2000, the data show that close to 80% of the prekindergarteners were either Black or White. Less than half of the Hispanic children eligible to enroll did so (Carter, 2009). In 2014, 55% of Hispanic children were enrolled in a prekindergarten program across the United States (Benson, 2012). In County X, the trend for enrollment in prekindergarten is similar with 37 of the Hispanic prekindergarten students being served in 2014 and 46 in 2015.

Experts agree that youngsters who receive literacy support before starting kindergarten perform better academically (Barnett et al., 2005; National Center for Early Development and Learning [NCEDL], 2008). Cognitive development and skills acquisition are cumulative over the life cycle. In other words, children who acquire skills at an early age continue building those skills as they grow older. Considering the academic status of Hispanic students in North Carolina, and specifically in County X, the need for additional and radical early childhood opportunities for Hispanic students is without question.

Statement of the Problem

Since 2004, states typically spend an average of $3,551 per child on prekindergarten services. Overall, this equals nearly $2.84 billion on prekindergarten programs yearly (Barnett, Hustedt, Robin, & Schulman, 2012). The human and financial resources invested in public school structured prekindergarten programs in North Carolina have been massive over the past few decades; and in spite of cuts to education, a substantial number of programs continue to be funded by the taxpayers. At this writing, in County X, there were 198 student slots for enrollment. Of those receiving services in 2015, 46 or 23% were Hispanic. Although the third grade end-of-grade assessment

scores for County X demonstrate less than positive results for Hispanic students, the national research data clearly state the advantages of early intervention programs (Pew, 2013). Why don't the third-grade scores in County X reflect the impact of prekindergarten programs? At this writing, no empirical data were available to quantify the comprehensive benefits of prekindergarten for Hispanic students; therefore, this study focused on the impact of prekindergarten on literacy skills of Hispanic students.

Purpose of the Study

Phase one of this mixed-methods study examined the impact of structured prekindergarten in County X on the kindergarten literacy skills of Hispanic students as measured by the Dynamic Indicators of Basic Early Literacy Skills (DIBELS). Phase one of this study was conducted to determine if participation in the North Carolina prekindergarten programs housed in County X foster literacy and thereby improve reading performance of Hispanic students in kindergarten.

Phase two of this study explored the impact of structured prekindergarten on the readiness and literacy skills of Hispanic students from the perceptions of kindergarten teachers. One-on-one interviews were used to collect data in phase two. The criteria for teacher participation in phase two follows: at least 10 years of service as a teacher and graduate and/or national board certification.

Research Questions

The following questions guided this mixed research study.

Quantitative Research Question. Do Hispanic students who attend structured prekindergarten in County X perform better on the kindergarten DIBELS literacy assessment?

Qualitative Research Question. What impact does structured prekindergarten

have on the readiness and literacy skills of Hispanic kindergarten students?

Definition of Terms

The following terms are defined in order to provide clarity for the context in which they are used in this study.

At-risk student. A student who faces school failure or has the potential to leave school early due to low educational attainment (Bredekamp & Copple, 2007).

County X. The anonymous name used for the low wealth North Carolina school district in this study.

Early childhood. Children from birth through age 8 (Bredekamp & Copple, 2007).

Economically disadvantaged. Students who receive or are eligible to receive free school meals or meals at a reduced cost. This is determined by the income of the student's family and its juxtaposition to the federal poverty line (NCDPI, 2014).

DIBELS. An assessment that measures early literacy skills from kindergarten through sixth grade through short one-on-one processes with students (Good & Kaminski, 2003).

Head Start program. The federal government education initiative that has provided children from low-income families with free access to early childhood education programs since 1965 (Administration for Children and Families [ACF], 2015).

Hispanic. An ethnonym to people of country heritage who speak the Spanish language; of, relating to, or being a person of Latin American descent living in the United States; especially one of Cuban, Mexican, or Puerto Rican origin (freedictionary.com, 2015).

Limited English proficient status (LEP). Refers to a student whose primary

language is other than English and whose English language skills are such that the student has difficulty performing ordinary class work in English (NCDPI, 2014).

Literacy. The ability to use available symbol systems that are fundamental to learning and teaching for the purposes of comprehending and composing and for the purposes of making and communicating meaning and knowledge (Stock, 2012*)*.

NCLB. Legislation passed in 2001 that largely focuses on school and teacher accountability by examining student test data and teacher qualifications (NCLB, 2002).

Prekindergarten. The school year immediately preceding kindergarten (freedictionary.com, 2015). Prekindergarten programs are a distinct group of programs designed specifically to make sure that preschoolers are ready for kindergarten. All prekindergarten programs have three characteristics in common. They are (1) governed by high-program standards, (2) serve 4-year olds or sometimes both 3- and 4-year olds, and (3) focus on school readiness (National Association for the Education of Young Children [NAEYC], 2009)

Reading readiness. Refers to an accomplishment of pre-readiness skills that are presumed to be the prerequisite for formal reading instruction in school (Burns & Snow, 2008).

Socioeconomic status (SES). This term identifies the current level of income to determine eligibility for free, reduced, or full-price meals under the national school lunch and child nutrition program and is based on income documentation (NCDPI, 2014).

Subgroups. Refers to the categories prescribed by NCLB. The categories sort students by ethnicity, SES, language proficiency, and disability (NCDPI, 2014).

Significance of the Study

This study extends the body of existing research in the area of early education

programs by revealing the impact of structured prekindergarten programs in County X on the literacy skills of Hispanic kindergarten students. The study results may likely influence decision makers in the area of prekindergarten funding in other North Carolina school districts, and especially in County X. Further, the results of this study may lead to the expansion of existing prekindergarten programs at best, or at least the continuation of existing programs.

Limitations

Kindergarten growth and performance is currently measured in North Carolina by the DIBELS assessment. Noteworthy is the implementation of a new assessment, the Kindergarten Entry Assessment in North Carolina which is also a part of the Read to Achieve Legislation (NCDPI, 2014). The new assessment was implemented across the state in August 2015, and its results measure total kindergarten readiness rather than literacy skills. Both assessments were conducted simultaneously during this study. A second limitation is the inability to ascertain if Hispanic students who did not attend prekindergarten in County X may have attended a structured prekindergarten program in another location or private setting.

Summary of Chapters

Chapter 1 provided an introduction to the problem for research. Chapter 2 provides the review of related literature as well as an historical perspective of prekindergarten in the United States and its impact on educational readiness. Chapter 3 describes the research design and the methodology used in this study. Chapter 4 summarizes the findings of the study, while Chapter 5 presents a discussion of the findings in relation to the related literature. Additionally, Chapter 5 reveals the research conclusions and the implications for future research and practice.

Chapter 2: Literature Review

Overview

Prekindergarten has much to offer the young learner. Prekindergarten students are exposed to numbers, letters, and shapes. More importantly, they learn how to socialize, get along with other children, share, and contribute to the larger class (Kanter, 2015). Educators are becoming increasingly aware that to win the high-stakes testing game, one must start the game early. No longer can early intervention strategies be postponed or implemented after reading deficits are noted in the student's first standardized test, usually given in the third grade. Instead, early intervention has become the topic and focus of educational researchers as they probe to find the solution to the ever-present question: how do we close the achievement gap? It is now clear that many of these students come to school without the prerequisite skills needed to read proficiently. As these students progress through their K-12 education, their learning deficiencies become more evident and the learning gap more pronounced. To that end, many states, North Carolina included, are funding early intervention programs that address the areas of need that many students bring to kindergarten. They do so in the hopes that by providing structured early intervention and support before school enrollment, their efforts will result in a significant reversal of the deficit. Succinctly stated, structured prekindergarten programs are considered an effective intervention, and it yields positive results for the students with the greatest needs (Neuman, 2007; Wat, 2007).

To gain a fuller understanding of the impact that structured prekindergarten programs have on the kindergarten performance of Hispanic students, a literature review was conducted. The following topics guide the literature: the history of prekindergarten,

early childhood initiatives that have been implemented in the United States, the curriculum and funding of prekindergarten programs of note, and the concept of kindergarten readiness. The review gives specific attention to Hispanic and low-income prekindergarten students. Finally, research studies that have examined the relationship between prekindergarten and student achievement are reviewed.

History of Prekindergarten

The importance of prekindergarten surfaced in the 1800s, when childcare became a need for mothers who worked in factories; therefore, daycares opened to meet this need. As time progressed, women left behind during World War II started working, and this service was again needed by women and families. A safe and orderly environment was needed and thus daycares and nurseries evolved (Marks, 1943). The United States Office of Defense Health and Welfare services created a childcare program as well (Marks, 1943). The Lanham Act, the funding source of these programs, expanded to encompass the needs of working mothers as well. It was to be used to supply teachers and other workers so the nursery schools would be kept open (Marks, 1943; Stevenson, 2015).

Additionally, during the early 1920s, Dr. Maria Montessori (1870-1952), an Italian physician, brought another form of early learning facility to the United States (Spodek, 2008). Her "Montessori schools" considered the developmental stages of children and the activities that were most effective during these stages (Cohen, 1990). Most Montessori schools begin with 3-year-old students and extend through elementary school grades. Today, Montessori schools can be found in almost every community throughout the United States, Canada, and around the globe (Spodek, 2008).

The daycare concept transitioned easily into preschools. In doing so, providing care was no longer the single focus. Instead, teaching and learning began to emerge as

the primary area to address. Head Start was established to prepare early learners for school, and it was started during an era when the well-being of the nation's poor was at the forefront. Congress determined that supporting children of poverty in this manner was an appropriate course of action. This was done to facilitate equity between the poor and nonpoor (Zigler & Styfco, 2000). With a focus on 21st-century learning, educators recognized the significance of quality prekindergarten education for all students (Barnett & Masse, 2007; Neuman, 2007). It became apparent that Head Start lacked adequate revenue to serve the ever-increasing number of low-income young children, and the Center for Public Education (CPE, 2007) status report reflected the emergence of other early intervention initiatives (CPE, 2007). Although only 10 states had prekindergarten programs before 1980 (Gilliam & Zigler 2004), a growing number in the 1980s showed interest as a part of the focus on education reform and improvement. These programs serve many, but the largest program is Head Start, which now serves more than 900,000 children. Local services are delivered by approximately 1,700 public and private nonprofit and for-profit agencies (Head Start, 2016). It is seen as an "investment in children that is intended to help them through the rest of their lives" (Garces, Thomas, & Currie, 2002). This idea, that early structured learning environments are a necessity, ignited the widespread existence of prekindergarten programs today. A new policy is the inevitable result of a widespread problem or need, but whether that policy is valid and successful depends largely upon comprehension of the problem's complexity (Rust, 2003, p. 154).

State prekindergarten programs have become more commonplace in the educational environment across the country. These programs are now sponsored by public schools as well as private profit and nonprofit organizations. Head Start largely

serves children of poverty with early education (Barnett & Husdedt, 2003). In the past decade, however, states have developed more options for children from middle- and upper-income families to receive a free preschool education (Pew, 2013). This attention to quality prekindergarten standards will be the conduit for the implementation of quality programming across the board—especially for Hispanics.

Prekindergarten in the United States

A Nation at Risk, the landmark study on the quality of education within the country, provided an impetus for the movement to provide prekindergarten programming for children in poverty (Mitchell, 2007). This mindset of addressing the ills of poverty within the educational framework has become prevalent in educational research and practice. Therefore, legislation such as the Goals 2000: Educate America Act was crafted to definitively state what our public schools were charged to do. Within this law, the government placed emphasis on early childhood programs and outlined a support system for these programs and education in general (Goals 2000: Education America Act [Goals 2000], 2004).

A Nation at Risk and Goals 2000 were the antecedents to NCLB. In 2001, this legislation was passed with a similar goal of preceding education law. Its aim was to improve the quality of the educational system in the United States with direct attention placed on early learners. It was determined that early structured learning environments were critical in this process. Although in all likelihood the gap will not be erased entirely, it can be reduced substantially through high-quality prekindergarten programs that acknowledge many children do not enter school adequately prepared (Neuman, 2007). This notion is supported by the surge in the number of children attending prekindergarten programs. According to a report from the NIEER (Barnett et al., 2005), in the United

States today, approximately 80% of all 4-year olds are enrolled in a state or federal prekindergarten. Early learning programs such as prekindergarten are a concrete mechanism to give children from diverse backgrounds access to the interventions needed prior to kindergarten. The work to craft, monitor, and evaluate prekindergarten programs is already underway in several states. Georgia was the first state to establish universal prekindergarten in 1995 for all children who wanted to receive such services; however, all states are not as far along (Davison, 2004). In 2005, Florida passed a constitutional amendment that ensures that all 4-year-old children will receive prekindergarten services. The legislation also mandates that these services be high in quality and standard based (Florida Department of Public Education, 2005).

Florida felt it necessary to set the course of academic achievement for its students at an early age and, in doing so, passed legislation with funding to accomplish said task (Clements & Sarama, 2008). Experts from NIEER forecast that universal prekindergarten is not on the immediate horizon (Barnett, Epstein, Freidman, Boyd, & Hustedt, 2008). According to NIEER (2014), for the 2012-2013 school year, prekindergarten enrollment was 28% at age 4. The number of families in which both parents must work is increasing, and the likely result of this will be an increase in prekindergarten enrollment (Barnett & Husedt, 2003). Early home childcare is no longer a viable option for these families. The challenges for these parents are the cost of these programs and the quality of education found there. Programs are available for indigent families, but there is still a need for assistance to those who are considered middle-class families.

In addition to access, the quality of programming is a national issue as well. The establishment of specific quality standards helped to achieve systemic implementation of

early education that is rigorous and developmentally appropriate. Each state-funded prekindergarten program has quality standards and requirements. NIEER uses a researched-based checklist of 10 quality benchmarks to compare quality standards across the states and their prekindergarten programs (Barnett et al., 2008). The 10 benchmark standards are as follows: attention to comprehensive early learning standards; a teacher with a bachelor of arts degree; staff with specialized training in structured prekindergarten; an assistant teacher with a child development credential; at least 15 hours per year of in-service for teachers; a maximum class size below 20; a staff-child ratio of 1:10 or better; vision, hearing, and health support service; at least one meal served daily; and regulatory site visits (Barnett et al., 2008).

NIEER published its report on the current state of prekindergarten. This study measured the quality of the programs of the 38 states that currently have some form of state-funded prekindergarten. NIEER found that North Carolina stands out, meeting 100% of the criteria for quality. Other states such as Oklahoma, Tennessee, and New Jersey's "Abbott" program met 90% of this criterion (NIEER, 2014). Although this particular study concluded quality early education programs exist, NIEER continues to evaluate the status of prekindergarten programs and determine if improvement in programming is evident across the country. "The number of state initiatives meeting fewer than five benchmarks decreased from 15 to 11" (NIEER, 2014).

There are movements whose goal it is to revise and refine the prekindergarten programming system. The Early Childhood Education and Care (ECEC) effort is one of these. Many nations, including the United States, realize that work in this area results in a better state of being for children, improvement in the quality and quantity of learning, social mobility, and economic development (ECEC, 2016). Part of the efforts revolved

around a study done in conjunction with 11 other countries in which early education policy was reviewed. Led by the Organization for Economic Co-operation and Development (OECD), the study included interviews with early education experts, during which the questions posed would later foster a systemic curriculum and practices for all countries (Karp, 2003).

OECD reviewed programming for early learners in participating countries (Karp, 2003). The review inquired about policy, governmental roles, organizational influence, and responses to the policy. It also sought to find alternatives to current ECEC procedures. Additionally, the study reviewed the effectiveness of these alternatives and subsequently highlighted those with the most stellar results. Lastly, the tools needed to sustain quality programming by ECEC were evaluated (Karp, 2003).

In concluding the study, ECEC reported that early intervention such as prekindergarten is aligned with academic progress, socialization, and positive emotional health. Furthermore, there was a noted decrease in incidences of criminal behavior and nonpromotion (Karp, 2003, p. 12). The quality of the programs in the participating countries varied, but this type of policy review and policy revision led to the improvement of early childhood intervention (Karp, 2003).

Prekindergarten Programs of Note

In looking at highly regarded prekindergarten programs, one can consult studies published 40 years ago. The first major research study was The HighScope Perry Preschool project, which was implemented in Ypsilanti, a small town in the state of Michigan. This program was created to support children experiencing poverty through early intervention in a structured academic setting. The project was designed by a panel of experts across the fields of education and health (Schweinhart, 2015). It lasted from

1962 to 1967 and tracked the academic lifestyle achievement of a sample of students who participated in a preschool program. This study grouped and tracked 123 African-American students from low socioeconomic backgrounds (Wat, 2007). The first group was provided quality prekindergarten services for 2 years, and the second group was not. The study included 3- and 4-year-old African-American children. Common characteristics were IQ scores not lower than 70 or higher than 80 and no physical handicap. They all attended the same elementary school 2.5 hours per day and received other support from staff (Wat, 2007). In addition to prescribed instructional activities, weekly home visits were conducted and group meetings with parents were held (Schweinhart, 2015). Longitudinal data were collected on the students until they were 27 years of age. The study maintained contact with approximately 95% of the initial group. This study was a forerunner in the area of examining the educational gap between students in poverty and their peers. It took into consideration the impediments and challenges of these students and the disparity of their school performance (Reedy, 2011). The Perry project tracked the participants longitudinally, and the data showed that students who attended prekindergarten not only did well on school tests but also adult assessments (Wat, 2007). Furthermore, it was concluded that the aforementioned students had a higher graduation rate than the control group (Wat, 2007). Overall, the researchers found that prekindergarten programs were a viable intervention for disadvantaged children.

The HighScope Perry study also included a cost-benefit analysis (Heckman, 2006). The analysis was the impetus for another study that looked at the fiscal benefits of early intervention. Steve Barnett, the researcher, examined the earnings of participants as adults as well as the costs of programs that aid the disadvantaged. He also analyzed the monetary impact of interventions such as special education services. The study

concluded that every dollar spent on prekindergarten saved $7.16 in tax dollars (Schweinhart, 2015). This $7.16 figure has become the most often cited statistic from the study. This study served as a validation of the work of early educators and the value of quality prekindergarten services (Schweinhart, 2015).

One cannot examine notable prekindergarten programs without reviewing the success of Head Start. There are varying opinions on Head Start; however, there is much research that supports its effectiveness. Head Start has helped produce positive results in several areas. Head Start students have better attendance and spoken vocabulary; they also display higher outcomes in language, literacy, and prerequisites for reading and writing such as letter and sound identification (Currie & Thomas, 2006). Aust (2009) reported similar findings in the area of math. A study done across the United States found that Head Start students had stronger scores on assessments than those who were in a control group of nonparticipants (U.S. Department of Health and Human Services, 2006).

Head Start dates back to 1995. Three years after its creation, the program provided full-day programming throughout the year. In 2007, Head Start quality was heightened as a result of the School Readiness Act. This legislation, which was passed in 2007, synced the goals of the Head Start program with the standards of the early learning community. There were also provisions for higher qualifications for the Head Start teaching workforce and increased program monitoring. This monitoring includes a review of child outcomes and annual financial audits. Head Start has a presence in all 50 states and U.S. territories (ACF, 2015).

Head Start's core objective is to provide intervention and support for children up to age 5. This support is not only academic but also addresses the needs of the whole

child; that is, emotional, social, physical, and mental health (Head Start, 2016). In addition to the child's well-being, Head Start includes in their focus the well-being of the family. Head Start services require family participation and education, and they are sensitive to the child and family's ethnic and cultural background (Head Start, 2016). Head Start encourages the role of parents as their child's first and most important teachers. Programs build relationships with families that support positive parent-child relationships, family well-being, and connections to peers and community. Head Start began as an early learning initiative. More than 80% of the children served by Head Start last year were 3- and 4-year olds (Head Start, 2016).

The Carolina Abecedarian Early Intervention Program has received national acclaim. The University of North Carolina endeavored to improve language skills and the development of poor children. The experimental group participated in a program lasting the entire day. It included educational activities that fostered development in the five domains of learning (Frank Porter Graham Child Development Institute [FPG], 2014). The students, 111 in total, received pre-phonics instruction twice per week for 45 weeks. Additionally, teachers and others providing care were trained in the area of sociolinguistics. The language curriculum, which was implemented throughout the school day, focused on pragmatic features rather than syntax and emphasized the contingent and conversational features of adult-child oral language (Ramey, Bryant, & Suarez, 1985). Overall, 67% of Abecedarian children graduated from high school compared with 51% of the group who did not receive interventions (FPG, 2014). The Abecedarian project is now, and will always be, associated with the sustained effects of early education, especially when it is provided to students from impoverished backgrounds (FPG, 2014).

Another notable North Carolina program was Smart Start. The original aim of

Smart Start was to prepare students for school academically and socially. The local community was given responsibility and power for determining the methods on how to effectively meet the needs of children through the community's current programs as well as through new programs. This program, which lauded partnerships between early educators and government entities, was evaluated by measuring the skills garnered by participants. A total of 512 children were tested in the areas of socialization, literacy, and numeracy. Several assessment tools were used: The Social Skills Rating System measured the social and emotional domain, for example (Gresham & Elliot, 1990). The Woodcock-Johnson (Loham, 2003) as well as the Peabody Picture Test (Dunn & Dunn, 1997) measured the cognitive domain. Letter, number, and color identification was also tested (Bryant, Maxwell, & Burchinal, 1999; Bryant et al., 2003).

The results found in this study showed that the children did, in fact, have better skills when enrolled in centers that participated in the Smart Start program, but the assessment of skills was not the only goal of the research. The study also sought to evaluate early intervention over time and determine if this intervention affects school skills. They also wanted to evaluate the quality of Smart Start programming compared with others and then link it to school success (Bryant et al., 1999; Bryant, Bernier, Peisner-Feinberg, & Maxwell, 2002).

The Chicago Child-Parent Center (CPC) is another prekindergarten program that has reported significant success. These centers served the most impoverished children in Chicago, with approximately 150 participants (Reynolds, Temple, Robertson, & Mann, 2002). The centers are funded by Title 1 and include a prekindergarten program, a kindergarten program, and even some elementary programs. This CPC program has three components: (a) development of reading and language skills, (b) parental involvement,

and (c) comprehensive services (Reynolds et al., 2002). The centers take into account diverse areas of need: health and nutrition, structure environments, quality instruction, and teacher skill development. There is also an emphasis on literacy through reading readiness instruction through reduced class size, writing, and reading activities at the center (Reynolds et al., 2002). A longitudinal study, which was a federally funded study on the effects of the CPC program, was conducted in an effort to evaluate the impact of programs of this type. Over 1,500 students from the Chicago public school system participated in the study (University of Minnesota, 2013).

Besides looking at the effects of early childhood education, the study examines the academic and social development of the participants and the impact of family and school actions. Researchers continue to collect data that demonstrate the tremendous benefits of the CPC program. The University of Minnesota (2013) reported the following findings: participants who had 2 years of prekindergarten demonstrated improved school readiness, had higher reading and math achievement scores through ninth grade, and had fewer incidences of exceptional children's service or retentions. They were more likely to complete high school and less likely to be arrested as juveniles. The CPC represents the second oldest federal preschool program after Head Start and the longest running extended early intervention program (University of Minnesota, 2013).

A final standout program was implemented in New Jersey. Touted as a state-funded universal program, it has a strong framework, which has led to longevity and success. The New Jersey Abbott Program provided voluntary prekindergarten for areas where at least 40% of children qualified for subsidized lunch. The Abbott program is one of three state-funded structured prekindergarten initiatives, and a related state Supreme Court ruling resulted in the implementation of much higher quality standards in the

program from 2002 onward. In addition to the requirements for maximum class size and teacher education, the court order included a provision for coaches to help teachers improve their classroom practice. The Abbott program served 19% of the state's 4-year olds in 2005, whereas the other two prekindergarten programs served 7%.

Impact of Prekindergarten on Minorities

As public schools endeavor to meet the mandates of both federal and state accountability programs, the biggest challenge is that subgroups of the school population consistently perform below benchmark rates. The subgroups with the most significant deficiencies are Hispanic, African American, and low-SES students. By the time some of these students reach kindergarten, they already lag significantly behind their peers academically (Chatterji, 2006; Wang, 2008). This low performance is persistent, and remediation efforts have resulted in slight, but not marked, improvement. It has become increasingly obvious that the approach must be more robust and occur at an earlier age. Prekindergarten has emerged as an important and viable strategy to promote school readiness and close achievement gaps in elementary school and beyond (Garcia & Jensen, 2009; Magnuson, Meyers, Ruhm, & Waldfogel, 2005).

The National Center for Educational Statistics released a report in 1992 in which school failure was measured through reading and math standardized testing along with dropout rates. Demographic data analyzed included sex, race, and SES. The data revealed that Black, Hispanic, and Native-American students with a low-SES background were more likely to lack basic math and reading skills than were other students. When SES and gender were controlled, Hispanic and African-American students were more likely to perform below Caucasian students on basic math and reading assessments (USDE, 2014).

Hispanic students, the focus of this study, have to contend with the impediments of poverty as well as language. LEP students often speak Spanish as their first language. A total of 79% of LEP students speak Spanish at home, whereas the remaining 21% speak one of 400 other languages (National Clearinghouse for English Language Acquisition, 2012). Young Hispanic children constitute an urgent demographic imperative. In the last 5 decades, the Hispanic population has increased from 6.9 to 35.3 million. This growth is predicted to continue, and it is theorized that the number of Hispanics will be greater than 100 million in less than 50 years (CNN, 2008).

Minorities of all racial/ethnic groups will become the majority, and many will live in poverty. Crosnoe and Elder (2004) argued that Hispanic children are the most socioeconomically disadvantaged group in the United States; therefore, it is critical that researchers and educators pay closer attention to their academic needs. As a result of these trends, Garcia and Jensen (2009) argued that more than any group, young Hispanic learners need access to free, quality prekindergarten. This will narrow the gap between racial groups when they all begin school (Garcia & Jenson, 2009).

Hispanic enrollment in prekindergarten programs remains low compared to other racial/ethnic groups, and these children participate in early childhood programs less than any other major racial minority group (Garcia & Jensen, 2009; National Task Force on Early Childhood Education for Hispanics, 2007; Rumberger & Tran, 2006). The number of prekindergarten students has increased slowly but steadily, but there are still large numbers of children who are not enrolled in prekindergarten programs. The barriers for Hispanic students to enroll in and attend prekindergarten programs are not only those brought about by their language but also the lack of access to prekindergarten in Hispanic communities. “Empirical evidence suggests that certain interventions such as

prekindergarten, are a prudent choice for positively impacting learning opportunities and outcomes for Hispanic children" (Garcia & Jensen, 2009, p. 1).

Jensen (2007) compared Spanish-speaking kindergarteners to their general education peers on a number of outcomes including SES, parent education, and mathematics achievement and found that Spanish-speaking kindergartners scored lower in mathematics. In a review of core area assessment data of kindergarten through fifth grade students, Reardon (2003) found that Hispanic children scored significantly lower than Whites in both reading and math. They did find that the gap was not as large in the following years.

The Early Childhood Longitudinal Study-Kindergarten Cohort, a national study of 14,162 kindergartners, showed significant gains for students who attended a center-based prekindergarten. Hispanic children data reflected twice the growth in skills prerequisites for reading compared with White children (Loeb, Bridges, Fuller, Rumberger, & Bassock, 2005). Rumberger and Tran (2006) concluded that "preschool should be viewed as a part of a more comprehensive and sustained effort to improve the educational outcomes of language minority students" (p. 10).

As indicated, students from poverty are also a subgroup of students who perform below their counterparts. Often, the minority subgroup and the low socioeconomic subgroup overlap or are one and the same. Sirin (2005) addressed the relationships between SES and achievement in a meta-analysis and reviewed journal articles from 1990 until 2000. The sample included 101,157 students from 6,871 schools. These students represented 128 school districts. Each study had detailed quantitative data which allowed for a compilation of all studies in reporting statistical results (Sirin, 2005). Sirin's study was a replica of a previous study conducted in 1982; however, research from the newer

study incorporated advancements in methodology and specifically used studies that were empirically valid using valuable statistics (Sirin, 2005). Research from this study revealed that SES has a significant impact on academic achievement. This impact is greater when an emphasis is placed on schools versus the individual student. Three factors appear to contribute to the SES-achievement relationship: school level, minority status, and school location (Sirin, 2005).

Reactive interventions that occur in the form of tutoring, after school remediation, or enrichment are not as effective as they need to be (Davison, 2004). Wat (2007) asserted that children with preschool experience had higher achievement scores and fewer behavior problems and were less likely to be required to repeat a grade. NCES (1995) found that the prekindergarten experience was associated with children's literacy and numeracy skills. Additionally, cognitive skills are likely to be refined by prekindergarten attendance. Baskett (1990) found that "pre-kindergarten participation promotes cognitive development, school success and helps low-income children close the educational gap that separates them from more advantaged students" (p. 94). Studies that longitudinally followed prekindergarten students showed higher levels of achievement for these students. In Michigan, students who attended a Readiness Program passed state tests in math and literacy more frequently compared with nonparticipants (Gilliam & Zigler, 2004). Other impact studies found similar results. Smith (2009) and Magnuson et al. (2005) stated that children who had prekindergarten experiences experienced lasting effects through elementary school. According to Smith, these students exhibited gains that were 2.83 points higher on math assessments and 4.489 points higher on reading assessments compared to students who did not attend prekindergarten.

FPG (2014) documented similar findings based on an 11-state study of

prekindergartens. When the researchers examined individual student achievement, they found some gains for children from the start to the end of their fourth-grade school year (FPG, 2014). In addition to the academic and social benefits of participation in a prekindergarten program, this intervention had a positive impact on students' school attendance. With regard to attendance, researchers in New York found statistically significant effects, with higher attendance rates of children who participated in prekindergarten at the fifth and sixth grades (Gilliam & Zigler, 2004).

Children aged 3-4 are ripe for cognitive and social development. Shonkoff and Phillips (2000) found that these early years provide a window of opportunity for educators to set either a sturdy foundation or a fragile stage for what follows in the later years of schooling. Furthermore, a child's ability to be attentive, focused, and follow directions emerges in the early years (Bowman, Donovan, & Burns, 2010). It is apparent that structured prekindergarten has the propensity to be an effective educational strategy.

However, the strategies used must be effective for the groups of children most at risk. Economically disadvantaged and minority students are at the forefront. An examination of prekindergarten programs that target low-income families shows that these programs can impact cognitive ability and have long-term effects on graduation rates, special education rates, and retention rates (Barnett et al., 2008). Similarly, in a study conducted in North Carolina that was designed to measure the effects of a publicly funded prekindergarten program on student achievement found that students from poverty made at least 1 month's growth for each month spent in a prekindergarten program (Aust, 2009). Furthermore, prekindergarten programs that were implemented across the board in communities and states showed immediate improvement in reading achievement of about a 0.5 standard deviation (McKey, Ganson, & Condelli, 1988; Ramey et al., 1985;

White & Castro, 1985). After conducting research on the various early childhood programs in several countries, Baskett (1990) concluded that "Pre-kindergarten experience seems to do more to boost the performance of disadvantaged children who are not from low socio-economic backgrounds" (p. 111).

Nationally, minority student achievement has not met the standards set forth by state and federal programs. "Results derived from kindergarten students across the country reflect that on math assessments, minority students scored about two thirds of a standard deviation below nonminority kindergarten students and under a half standard deviation lower on reading assessments" (Wang, 2008, p. 24). The results are conclusive; the gap in achievement is pronounced and is evident as soon as students enter school.

The research suggests that prekindergarten is a viable option for districts and schools to address low achievement. Often, these students are members of two low-performing subgroups, the aforementioned economically disadvantaged group and the minority group. As stated, the results of the HighScope Perry Preschool project tracked the achievement of low-income minority students who participated in a prekindergarten program, and this study demonstrated that the program group significantly outperformed the nonprogram group. The Perry participants had significantly higher scores on language, school achievement, and adult literacy tests (Wat, 2007). In addition, the researchers found that the HighScope Perry participants were less likely to need special education services and more likely to complete high school than the control group (Wat, 2007).

Another study done in North Carolina gauged the performance of prekindergarten participants who were largely African-American and Hispanic. It concluded that the children were better for the experience. The program participants had higher reading and math scores through age 21 than the control group (Barnett & Masse, 2007). The program

group had a lower grade-retention rate and less need for special education (Barnett & Masse, 2007). Of those participating in prekindergarten, 36% attended a 4-year college, more than double the rate of children who did not receive services (Wat, 2007). In another study based in Oklahoma where there are state-funded prekindergarten programs in place as well, researchers examined Hispanic students and found that the program increased cognitive/knowledge scores by a 0.39 standard deviation, increased motor skills scores by a 0.24 standard deviation, and increased language scores by a 0.33 standard deviation (Gormley, Gayer, Phillips, & Dawson, 2005).

Although the positive impact seems clear, most specifically in the areas of test achievement, cognitive and social development, and attendance, there is the question of whether this impact is long term. Data from the National Early Childhood Longitudinal Study found that the impact waned after third grade (Rumberger & Tran, 2006); however, these same researchers acknowledged that these students were less likely to be retained or receive special education services.

Studies have concluded that students who attend prekindergarten experience cognitive gain, increased educational benefits, and better social and emotional skills (Reynolds et al., 2002; Wat, 2007). The research emphatically reflects that participation in prekindergarten is a valuable intervention for the most disadvantaged as well as minority subgroups; however, attention must be placed on the curriculum and quality of what is being provided. Prekindergarten must resonate with research-based instructional strategies.

The notion of universal prekindergarten was studied by the Carnegie Foundation, which pointed out that the United States lagged sorely behind other nations in providing quality early education to all; also, the foundation stated that any challenges to providing

care and quality early education should be removed (Boyer, 1991). This statement reflects where and how the idea of universal prekindergarten was formed, and it also establishes the formation of this practice as a goal for our country. In this country, we falsely view prekindergarten as an unimportant precursor of school instead of a valuable support mechanism (Maeroff, 2003, p. 9).

One must also consider why some prekindergartens fail. According to Ramey and Ramey (2005), prekindergartens fail for four specific reasons. Adequate training and professional development are often not available to teachers. There is often inadequate time allotted for instruction. The programs are not proactive; rather, they are reactive or are remedial. The final reason for failure is that many programs, although well intentioned, do not just focus on student needs but instead have a broader scope, dealing with family issues as well. There is limited direct instruction.

Literacy in Kindergarten

Because the educational gap among subgroups is a definitive challenge for educators everywhere, a goal of many school districts is to promote "school readiness" for all students in an effort to diminish this gap. Students enter school with various levels of literacy achievement, and these levels have a direct impact on their school performance and reading achievement. The gap between the readiness skills educators think children need and the actual skills kindergarten students have when entering school presents an ongoing challenge for educators and policymakers. As a result, it is imperative for educators to identify the distinct set of skills that are needed to be successful when students enter school so intervention and supports can be established at an early age (Neuman, 2007; Snow, Burns, & Griffin, 2008).

Snow et al. (2008) defined readiness in the area of literacy as having the

prerequisite skills that are necessary for reading comprehension and fluency instruction (p. 113). Reading readiness is directly linked to reading ability throughout school. Students who exhibit a deficiency in kindergarten have a difficult time mastering reading in the next grades. Prediction studies have noted this fact (Lyon, Shaywitz, & Shaywitz, 2003). Participation in prekindergarten has also been found to influence not only school success but also success in adult life (Gullo & Burton, 1992; Reynolds, 1992).

Kindergarten students are expected to have emergent literacy skills and be on the path toward developing phonics skills when they enter school (Lyon et al., 2003). According to Foster and Miller (2007), "students who enter school with the basic beginning literacy skills are more likely to access the general curriculum effectively than are those who are poor in literacy" (p. 174). "Once children are on a normal developmental trajectory for reading, they enjoy many opportunities to engage in reading with success, gain general knowledge, and access a rich vocabulary" (Foster & Miller, 2007, p. 174). In contrast, students who do not acquire the basic literacy skills experience academic failure and quickly fall behind their peers in the acquisition of general knowledge and vocabulary (Foster & Miller, 2007).

Kindergarten Readiness

Educators, as well as parents, are keenly interested in ensuring that students grow and perform during their school experience. Kindergarten is a child's first exposure to public school; therefore, it is imperative that educators have a clear-cut definition of readiness. The availability and quality of prekindergarten experiences has become a hot topic in recent years. Educator discussion has revolved around what these experiences lead to (FPG, 2014).

The concept of kindergarten readiness has been debated for many years (Scott-

Little, Kagan, & Frelow, 2006). The definition of readiness varies as teachers, parents, and other professionals in the early childhood field often have very different points of view, and they certainly examine the concept through their own lens. Some educators define kindergarten readiness as the behaviors and skills needed for school success. Additionally, developmental milestones are considered as well in this definition. In recent years, readiness for kindergarten was stipulated by good health, positive school attitudes, the ability to communicate, and academic performance. There has been no consensus about what constitutes readiness; however, educators do agree that kindergarten readiness depends on many factors including the child's family and school-family interactions (Scott-Little et al., 2006, Graue, 2006)

Lin, Lawrence, and Gorrell (2003) examined how kindergarten teachers see school readiness. Their data came from 3,305 kindergarten teachers who completed questionnaires in 1998 as a part of the Early Childhood Longitudinal Study Kindergarten Cohort (ECLS-K). The teachers participating in ECLS-K rated social skills as more important to readiness than academic abilities; however, younger teachers and those from the South put more emphasis on the academic aspects of readiness.

Wesley and Buysse (2003) investigated perceptions on readiness as well. They used 20 North Carolina focus groups consisting of diverse groups including parents, preschool and kindergarten teachers, and elementary principals. The majority of participants across all four groups emphasized social/emotional development and academics. Many of the group members expressed dissatisfaction with the increased emphasis on assessment and the lack of accommodations in place for children with cognitive or physical impairments and children from non-English speaking families.

Having no definitive language that expresses the concept of readiness directly

affects educators' abilities to measure said readiness of students. Furthermore, young children are constantly changing and developing during the early years of school. Thus, accurate determination of readiness is challenging (Meisels, 2006). As such, research results in this area are conflicted. In general, social skills are seen as critical to readiness concepts as well as academic factors by both parents and educators. Nonacademic considerations are often not weighted with the same importance as socialization. These social aspects are also often excluded from early learning standards by states (Scott-Little et al., 2006). According to some estimates, approximately one third of the children beginning kindergarten are seen as at risk in some manner (be it from social, emotional, health, or academic factors) and perform lower than their non-at-risk peers on various assessments at the end of first grade (Hair, Halle, Terry-Humen, Lavelle, & Calkins, 2006). In an effort to address the needs of these and all students, prekindergarten is and has been considered as a remedy.

Summary

This literature review focused on prekindergarten programs working to improve the acquisition of literacy skills and academic performance outcomes. Based on the research cited, "It seems increasingly clear that the literacy achievement gap that is already present for many students when they enter kindergarten must be effectively closed in the early years of school" (Foster & Miller, 2007, p. 173). The validated notion that early intervention is critical when addressing education deficits has propelled prekindergarten programs that reflect the designated characteristics of quality to the forefront. Furthermore, there is a focus on not only quality but on both long- and short-term results.

Studies are emerging on effective prekindergarten practices, from teacher

qualifications to short- and long-term outcomes for students. Ramey and Ramey (2005) argued that improving the achievement of K-12 students must begin in the prekindergarten years with the provision of effective learning opportunities that are necessary for brain development and success in school. Ramey and Ramey also described children's early years as a time period of rapid growth and development and warned that what happens early in development has lasting and important consequences. Burns and Snow (2008) agreed that many reading deficiencies that teenagers and adults have could have been corrected in their early years. Although some students have succeeded on their own without prekindergarten, many students who did not participate in high-quality, developmentally appropriate prekindergarten programs started behind their peers.

Prekindergarten participation can also be credited with raising the English language proficiency of immigrant children by exposing them to English instruction at an early age (Magnuson et al., 2005). According to Hernandez, Denton, and Macartney (2007), typically, Hispanic children are more at risk. They are more likely to come from low socioeconomic backgrounds. Their parents often have lower educational levels, and their communication skills may be an impediment. There is discussion among lawmakers about moving toward the establishment of universal prekindergarten and about being inclusive of Hispanic students as well as other underserved groups.

Universal or prekindergarten-for-all programs in Georgia and Oklahoma have documented the states' progress in reducing the school readiness gap facing at-risk children (Barnett et al., 2008). It should be noted that student achievement on test scores is just one indicator of success. Challenges remain, however, in documenting prekindergarten effectiveness. "Only about half of the states with pre-kindergarten programs have conducted rigorous evaluations, and most researchers identify a need for

additional study on both short and long-term benefits of these services" (O'Brien & Dervarics, 2007, p. 24). Because the programs are structured and delivered differently across the nation, it is difficult to derive the absolute data needed to make assertions regarding prekindergarten that would influence policymakers in the direction of universal prekindergarten. It is important then that descriptors of prekindergarten quality permeate all programs.

The literature review has provided information concerning the impact that prekindergarten intervention has had on student achievement. The literature suggests that students benefit from early childhood intervention; however, the review does not provide ample insight regarding prekindergarten's impact on Hispanic students. This study, by extending previous research, will provide the information needed to address the needs of Hispanic learners, particularly in County X. Additional research is needed to examine the results from the perspective of the district's prekindergarten programs, and subsequent kindergarten data are needed to determine the impact that prekindergarten has on Hispanic students' achievements in County X and across the nation.

Chapter 3: Methodology

Overview

National Assessment of Educational Progress (NAEP) data show that the disparity between the assessment scores of Hispanic and non-Hispanic students has been unchanged for several decades (Allen, 2011). This lack of progress exists even though there has been a great amount of state and federal resources aimed at improving language for immigrants. Also, accountability legislation such as NCLB has not yielded the results desired. Interventions and programs aimed to support the education of Hispanic students are present in most schools and districts where this group represents a large portion of the demographic. Prekindergarten can be considered one of these interventions. Hispanic children benefit greatly from high-quality early education as it exposes them to the English language at a young age and improves their chances for academic success (Murphy, Guzman, & Torres, 2014). Access to and participation in early education programs are even more essential given today's significant and growing Hispanic population. This study was conducted to determine if participation in the prekindergarten programs housed in County X fosters literacy and thereby improves reading performance of Hispanic students.

Research Questions

The researcher decided to extend the quantitative results of this study by exploring the perspectives of the teachers who taught the Hispanic students after their prekindergarten year (Creswell, 2012). Therefore, the researcher chose mixed methods and completed the study in two phases. Phase one encompassed the quantitative phase, whereas phase two encompassed the qualitative phase. The following research questions drove this study.

Quantitative Research Question. Do Hispanic students who attend structured prekindergarten in County X perform better on the kindergarten DIBELS literacy assessment?

Qualitative Research Question. What impact does structured prekindergarten have on the readiness and literacy skills of Hispanic kindergarten students?

Null Hypothesis for the Quantitative Study

There will be no statistically significant increase in kindergarten reading performance for Hispanic students who participated in prekindergarten compared to students who did not participate in prekindergarten.

Hypothesis

There will be a significant increase in kindergarten reading performance for Hispanic students who participated in prekindergarten compared to students who did not participate in prekindergarten.

Research Design

This study examined the impact of prekindergarten programs in County X located in Eastern North Carolina on reading readiness skills of kindergarten Hispanic students as measured by the DIBELS assessment. In phase one of this study, using a quantitative approach, the reading performance of Hispanic students was measured by comparing the scores of the Hispanic students who attended prekindergarten in County X with the Hispanic students who did not attend prekindergarten in County X. Benchmark data were gathered three times during the kindergarten year: the beginning, middle, and end. The DIBELS composite score was used to determine literacy skills and reading performance. Data were disaggregated by total group and by ethnic (Hispanic) subgroup. A causal-comparative descriptive design was used to determine the impact of

prekindergarten participation in County X on reading performance of Hispanic students in kindergarten. A causal-comparative design is one that determines the relationship between variables after an action or event has already occurred (Brewer & Kubn, 2010). This researcher ascertained if the independent variable affected the outcome, or dependent variable, by comparing two or more sets of students and their scores. This design determined the relationship using performance data of Hispanic kindergarten students who attended prekindergarten compared to Hispanic kindergarten students who did not attend prekindergarten. The causal-comparative research design allowed the researcher to determine if the impact of prekindergarten intervention contributed to the performance in kindergarten reading skills as measured by the DIBELS reading assessment. The design of this study was a nonexperimental design that employed ex-post facto data (Brewer & Kubn, 2010). The independent variable, prekindergarten participation, had only two categories: students who participated in prekindergarten and students who did not participate in prekindergarten. The dependent variables were the 2015-2016 DIBELS beginning-, middle-, and end-of-year benchmark composite scores. The control factor was ethnicity. All quantitative data were collected and analyzed during this phase of the research design. Statistical Package for the Social Sciences (SPSS), a program designed for quantitative research, was used to determine statistical significance in the performance data.

The second phase of this research, the qualitative study, explored the perceptions of kindergarten teachers regarding the impact of structured prekindergarten on literacy skills. One-on-one interviews, a form of narrative research, conducted with kindergarten teachers provided the data for answering the second research question. The one-on-one interview process was selected because it lends itself to the collection and interpretation

of data from the point of view of the respondents. The process allowed the researcher to ask the participants a series of questions and record responses one participant at a time (Creswell, 2012). The researcher used open-ended questions to obtain the teachers' perspectives (Creswell, 2012). Each participant answered the following interview questions:

1. Do you think that age impacts kindergarten readiness and subsequent academic performance? Explain.
2. Do the students who have attend a prekindergarten exhibit more maturity and does this impact kindergarten readiness? Explain.
3. Do the students who have attended a prekindergarten have a stronger foundation in language skills that are prerequisites for reading? Explain.
4. Do you feel that the skills integrated into the prekindergarten curriculum or the experiences in prekindergarten impacts kindergarten readiness? Explain.

Research Context

This research took place in County X located in Eastern North Carolina. The district serves nearly 19,000 students. There are 11 prekindergarten classrooms housed within the elementary schools. These classrooms have all been awarded five stars by the North Carolina Division of Child Development and Early Education. Additionally, each classroom met all requirements of the North Carolina prekindergarten program. At the time of this study, there were 18 slots per class, and the program was at 100% capacity. Of the 198 students, only 46 of these participants were Hispanic.

All elementary schools in the district are Title 1 schools, which means that these schools are provided with federal funds as a result of the high numbers of economically disadvantaged children (NCDPI, 2014). The ethnic makeup follows: 63.6% of the

students are White, 32% are Black, 10.7% are Hispanic, and 2.2% are two or more races according to the district's most recent enrollment data. The participants were selected from three schools in County X where there has been a substantial increase of Hispanic immigrants and migrants. Many of these families are employed in the agricultural industry that is prevalent in this area of North Carolina. The increase in the Hispanic population in many states across the South has far exceeded the expected rates. From the school years 2000-2001 to 2014-2015 in North Carolina schools, 57.3% of student growth is attributed to Hispanic students; this accounted for an increase in the school enrollment of 45,148 (Cortina, 2014).

Participants

For phase one, or the quantitative study, the researcher chose a representative sample of Hispanic students. For phase two, or the qualitative study, 10 kindergarten teachers participated. The teachers were purposefully selected because they all had greater than 10 years of teaching experience and they each held a postgraduate degree or National Board Certification.

Instrumentation

The DIBELS assessment data were used as the measure of kindergarten reading performance in this study. DIBELS is an assessment used by North Carolina as well as other states for measuring early literacy skills in elementary school. They are designed to be short (1 minute) fluency measures used to regularly monitor the development of early literacy and early reading skills. DIBELS is comprised of seven measures to function as indicators of phonemic awareness, alphabetic principle, accuracy and fluency with connected text, reading comprehension, and vocabulary (Good & Kaminski, 2003). In speaking to Congress, Roland Good, one of the authors of the tool, reported that three

million students are assessed with this instrument at least three times a year in Grades K-3 (Dessoff, 2007). The Read to Achieve Legislation, a part of the Excellent Public School Act, requires formative assessment be done using DIBELS; therefore, DIBELS is a mandatory assessment conducted in every public elementary school in North Carolina.

The kindergarten DIBELS assessment measures the following reading skills: Initial Sound Fluency (ISF), Letter Naming Fluency (LNF), and Word Use Fluency (WUF). The LNF subtest provides a measure of risk for alphabetic principle knowledge by assessing a student's ability to identify upper and lowercase letters that are arranged in a random order. The ISF subtest measures phonological awareness by assessing a child's ability to recognize and produce the initial sound in an orally presented word. The WUF subtest measures a student's vocabulary acquisition and oral language skills. All three of these subtests are administered orally and individually in a standard format (Dessoff, 2007). The DIBELS assessment scores are converted into three levels that should be used to inform instruction: benchmark, strategic, and at-risk. Hall (2006) explained that the DIBELS assessments require standardized procedures, administration, and scoring to yield reliable and valid test results; it must be administered the same way every time for the results to be valid and reliable. In County X, the DIBELS assessments are administered orally in three sessions with a total testing time of 1 minute per assessment. Following the DIBELS guidelines and recommendations for administration of the DIBELS assessment, the students are removed from the classroom and assessed by a trained DIBELS evaluator. The assessments are given individually between one assessor and one student. The full text of the test may be found in the copyrighted instrument.

Validity and Reliability

Since the conception of DIBELS, an ongoing series of studies have been

conducted to ascertain and document the reliability and validity of the measures as well as their sensitivity to student change (University of Oregon Center on Teaching and Learning, 2008). According to Good and Kaminski (2003), DIBELS, which is a norm-referenced test, has been confirmed as reliable and valid in a multitude of studies. Good and Kaminski published a technical report that analyzed the data for the subtests and found that the reliability of the DIBELS measures is considered adequate, ranging from .72 to .94 for the various indicators. The lowest reliability measure is for the ISF at .72 (Good & Kaminski, 2003). In a University of Kansas study, three types of reliability estimates were conducted: interrater reliability, test-retest reliability, and alternate forms reliability. All reliability estimates were .80 or higher. Overall interrater reliability estimates were in the high .80s to .90s (Elliot & Fuchs, 1997), signifying high and acceptable levels of reliability. The Reading First Committee, appointed by the United States Department of Education, determined whether there was an adequate body of research to meet the minimum criteria for validity and reliability. According to Hall (2006), the committee found DIBELS to be valid and reliable as a screening, progress monitoring, and outcome measure.

Procedures Followed

Before any data were collected, the researcher sought permission to conduct research from Gardner-Webb University and County X. Necessary forms and letters of request were made and approved and are included in Appendix A. District administrators from County X were contacted to assist in the identification of prekindergarten participants as well as those who did not participate in prekindergarten. Additionally, the Department of Testing and Accountability assisted with the collection of DIBELS test results. The Assistant Superintendent of this department provided a Comma Separated

Value (CSV) file of the composite scores of the control group and the experimental group. This data file included demographic information on all of the kindergarten students in the sample. This study was conducted in such a manner as to ensure anonymity of the students and teachers. To accomplish this, neither the students' names nor the teachers' names were not used in any analysis or reporting of the data results. In addition, the researcher successfully completed the Internal Review Board process at Gardner-Webb University (Appendix B).

The procedures for collecting data for the qualitative questions are as follows. On the day of the interviews, the teachers were gathered in a conference room for an explanation of the study. Once the researcher presented the explanation and procedures, the researcher asked the participants if there were questions. Next, the teachers were seated in a separate room until called upon for the one-on-one interview session. All teachers were asked the same four questions. Each interview session was audiotaped, transcribed, and coded in order to identify themes and categories.

Analysis of Data

Phase one. In answering the quantitative research question, the researcher sought to compare of reading skills of Hispanic kindergarten students who participated in prekindergarten in County X and Hispanic kindergarten students who did not. The DIBELS scores for kindergarten students were entered electronically at each school site, and those data were compiled by the district Accountability Office for review. Once all data were gathered, a master spreadsheet was created in Microsoft Excel. Next, the Excel data were uploaded into SPSS for statistical analysis.

The statistical procedure used was the independent means *t* test. Utilizing a *t* test, the researcher analyzed the data to test hypotheses one. A *t* test analyzes two groups'

means by using statistical examination. A *t* test with two samples is commonly used with small sample sizes, testing the difference between the samples when the variances of two normal distributions are not known. A *t* test looks at the *t* statistic, the *t* distribution and degrees of freedom to determine the probability of difference between populations (Trochim, 2008)

Phase two. While the numeric data provided tremendous insight about the impact of literacy skills of these students, the qualitative data also provided insight that helped depict a comprehensive picture of the impact of prekindergarten on readiness and literacy. To analyze data collected for the qualitative phase of the research, the following procedures were followed. Once the recorded interview responses were professionally transcribed, the researcher read and examined the data for preliminary themes and categories. The interview questions and subsequent data are located in the appencies. The raw data were entered into an Excel spreadsheet. The Excel file was loaded into the NVivo for further analyses. NVivo is a software program that supports qualitative and mixed-methods research designed to help organize, analyze, and find insights in unstructured or qualitative data like interviews, open-ended survey responses, and articles. The researcher identified major categories or themes from the data and then used NVivo nodes for capturing supporting data. NVivo nodes are electronic containers that are categorized by themes. All supporting data, according to themes, are stored in the respective node. The thematic data helped to answer the qualitative research question.

Summary

Hispanic students across the county still lag behind their non-Hispanic peers in reading. A proliferation of human and financial resources has gone into remediation and

other programs designed to close this glaring achievement gap. In North Carolina, the geographical location where this study took place, the growing number of Hispanics has placed much concern on the minds of educational decision makers. For decades, research has revealed that early intervention programs rate high in achieving and promoting literacy readiness and in making up some of the educational deficits that are pronounced in minority students. None the less, the Hispanic students in County X continue to score much less than 50% proficient in reading. This study looked at the impact of structured prekindergarten programs on the literacy skills of Hispanic students. As a multi-phase study, phase one included the collection and analysis of the data captured from the DIBELS assessment, while phase two collected and analyzed one-on-one interview data from teachers. The interview data served to answer the second research question. Chapter 4 summarizes the findings of this study.

Chapter 4: Results

Introduction

This mixed-methods study took place in two phases. Phase one focused on the correlation between prekindergarten participation of Hispanic students and kindergarten reading readiness as measured by the DIBELS reading assessment. This study examined the achievement gains of Hispanic students in kindergarten by comparing the scores of the Hispanic students who attended prekindergarten in County X to the Hispanic students who did not attend prekindergarten in County X. The beginning-of-year, middle-of-year, and end-of-year DIBELS composite scores were compared within each group to measure reading proficiency. This chapter presents and analyzes the composite data from the DIBELS assessment of Hispanic kindergarten students who attended prekindergarten, as well as those who did not.

Research Questions

The following questions guided this mixed research study.

Quantitative Research Question. Do Hispanic students who attend structured prekindergarten in County X perform better on the kindergarten DIBELS literacy assessment?

Qualitative Research Question. What impact does structured prekindergarten have on the readiness and literacy skills of Hispanic kindergarten students?

Population

The sample population for phase one of this study consisted of 137 Hispanic kindergarten students who were assessed using DIBELS in the 2015-2016 school year in County X; 91 of the students did not attend prekindergarten and 46 did attend prekindergarten. The data displayed in Table 1 provide the demographic information for

all of the participants. By gender, 49% or 67 of the participants were males, whereas 51% or 69 were females.

Data Analyses

The DIBELS benchmark data indicate student progress toward achieving the designated grade-level outcome. The composite scores for the control group and the experimental group were used for analysis. The SPSS analysis of these composite scores are located in Tables 2-8. The DIBELS Composite Score compiles the scores of DIBELS subtests and provides the overall measurement of the student's early literacy skills and reading proficiency (Dynamic Measurement Group, 2010). A composite score is the total score for the following pre-reading skills: First Sound Fluency, Phoneme Segmentation Fluency, and Nonsense Word Fluency.

First Sound Fluency is tested in the beginning and middle of the year and is used to test phonological awareness ability. The students are presented pictures and are then required to select the corresponding picture that shows an item that has the appropriate beginning sound. The number of questions is multiplied by 60 and divided by the time elapsed in seconds it takes to answer the question to get the score (Good & Kaminski, 2003).

Phoneme Segmentation Fluency is assessed in the middle and end of year; and Nonsense Word Fluency is conducted in the middle and end of year. The Phoneme Segmentation Fluency test assesses phonological awareness requiring students to pronounce segmented sounds in three and four phoneme words. Correct sounds spoken in 1 minute are recorded for scoring (Good & Kaminski, 2003). The Nonsense Word Fluency assessment is comprised of random vowel-consonant and consonant-vowel-consonant nonwords. Real words might be known to the students. The students are

asked to say as many of these nonsense words in 1 minute as possible. If a student is able to say the word with ease without decoding, he or she achieves a better score (Good & Kaminiski, 2003). Table 2 and Table 3 outline benchmark data of these individual components for Hispanic students who did not attend prekindergarten and for those who did, respectively.

Table 1

Demographic Information of Participants

	n	%
Total Number of Hispanic Students	137	100
Hispanic Students with Pre-K Experience	46	33.5
Hispanic Students with No Pre-K Experience	91	66.5
Gender		
Female	69	51
Male	67	49

Table 2

Descriptive Information Regarding Participants Who Didn't Attend Prekindergarten. Benchmark Status for Phoneme Segmentation Fluency, Nonsense Word Fluency, and First Sound Fluency

Variables	*n*	%
Phoneme Segmentation Fluency (Middle Assessment)		
Well Below Benchmark	20	22
Below Benchmark	10	11
At Benchmark	61	67
Total	91	100
Phoneme Segmentation Fluency (End-of-Year Assessment)		
Well Below Benchmark	10	11
Below Benchmark	7	8
At Benchmark	74	81
Total	91	100
Nonsense Word Fluency (Middle Assessment)		
Well Below Benchmark	13	14
Below Benchmark	14	15
At Benchmark	64	71
Total	91	100
Nonsense Word Fluency (End-of-Year Assessment)		
Well Below Benchmark	5	5
Below Benchmark	10	11
At Benchmark	76	75
Total	91	100

(continued)

Variables	*n*	%
First Sound Fluency (Entry Assessment)		
Well Below Benchmark	60	66
Below Benchmark	7	8
At Benchmark	24	26
Total	91	100
First Sound Fluency (Mid-Year Assessment)		
Well Below Benchmark	22	24
Below Benchmark	15	17
Benchmark	54	59
Total	91	100

Table 3

Descriptive Information Regarding Participants Who did Attend Prekindergarten. Benchmark Status for Phoneme Segmentation Fluency, Nonsense Word Fluency, and First Sound Fluency

Variables	*N*	%
Phoneme Segmentation Fluency (Middle Assessment)		
Well Below Benchmark	6	13
Below Benchmark	15	33
At Benchmark	25	54
Total	46	100
Phoneme Segmentation Fluency (End-of-Year Assessment)		
Well Below Benchmark	3	7
Below Benchmark	4	8
At Benchmark	39	85
Total	46	100
Nonsense Word Fluency (Middle Assessment)		
Well Below Benchmark	10	22
Below Benchmark	11	23
At Benchmark	25	55
Total	46	100
Nonsense Word Fluency (End-of-Year Assessment)		
Well Below Benchmark	2	5
Below Benchmark	10	22
At Benchmark	34	73
Total	46	100

(continued)

Variables	*N*	%
First Sound Fluency (Entry Assessment)		
Well Below Benchmark	25	55
Below Benchmark	9	20
At Benchmark	12	25
Total	46	100
First Sound Fluency (Mid-Year Assessment)		
Well Below Benchmark	5	11
Below Benchmark	14	31
Benchmark	27	58
Total	46	100

Analysis of Null Hypothesis

This section addresses the proposed null hypothesis using *t* tests. A *t* test is an analysis of two populations' means through the use of statistical examination to determine statistical significance in the two groups' scores from beginning to the end of year. *T* tests were used for the following groups and comparisons. Three independent samples *t* tests were used to compare students' DIBELS composite scores. These included the following group comparisons: (1) beginning-of-the-year test scores; (2) mid-year test scores; and (3) end-of-the-year test scores for students who did attend prekindergarten and those students who did not. Paired samples *t* tests were used to compare beginning-of-the-year test scores to end-of-the-year test scores for students who attended prekindergarten; the same paired samples *t* tests were run for students who did not attend prekindergarten. The *t* tests were all administered to test the null hypotheses at the 0.05 level of significance.

Null hypothesis. There will be no statistically significant increase in kindergarten reading performance for Hispanic students who participated in prekindergarten compared

to students who did not participate in prekindergarten based on a *t* test analysis of their end-of-year score.

An independent sample *t* test was used to test Null Hypothesis 1. There was not a statistically significant difference in the scores of the students who attended prekindergarten compared to the students who did not attend prekindergarten; therefore, Null Hypothesis 1 was accepted.

Table 4

T Test – Hispanic Students Who Attended Prekindergarten End-of-Year Composite Scores Compared to End-of-Year Composite Scores of Hispanic Students Who Did Not Attend Prekindergarten

	Attended Pre-K		Did not Attend Pre-K					
	M	*SD*	*M*	*SD*	*t*	*p*	95% CI	Sig. (2-tailed)
DIBELS Score	1.91	.91	1.68	.97	1.142	0.005	[-.18, .65]	.257

Additionally, the researcher conducted a *t* test for students who attended prekindergarten comparing their beginning-of-the-year test scores and end-of-the-year test scores. The results presented in Table 5 show statistical significance meaning that these students improved from the beginning of the year to end of the year in the DIBELS composite scores. This result indicates a positive impact of prekindergarten experience on literacy performance as there was an increase in skills.

Table 5

T Test – Hispanic Students Who Attended Prekindergarten Beginning-of-Year Composite Scores Compared to End-of-Year Composite Scores

	Beginning-of-the-year score		End-of-the-year score					
	M	*SD*	*M*	*SD*	*t*	*P*	95% CI	Sig. (2-tailed)
DIBELS Score	1.91	.91	2.59	.78	-4.841	0.005	[-.95, -.39]	.000

Additionally, the researcher conducted a t-test for Hispanic students who did not attend prekindergarten comparing their beginning-of-the-year test scores and end-of-the-year test scores. The results, presenting in Table 6 show statistical significance, meaning that these students improved from the beginning of the year to end of the year in the DIBELS composite scores. While this group did show an increase as well, the improvement was more remarkable for the prekindergarten participants. Furthermore, testing and analysis also showed that the average test score increased for both groups as well, with the prekindergarten group having a greater increase. (See Table 7 and Table 8)

Table 6

T Test – Hispanic Students Who Did Not Attend Prekindergarten Beginning-of-Year Composite Scores Compared to End-of-Tear Composite Scores

	Beginning-of-the-year score		End-of-the-year score					
	M	*SD*	*M*	*SD*	*T*	*p*	95% CI	Sig. (2-tailed)
DIBELS Score	1.68	.97	2.59	.76	-5.532	0.005	[-1.26, -.58]	.000

Table 7

Students Who Attended Prekindergarten Average Test Scores at the Beginning and End of the Year

	Beginning-of-the-year score		End-of-the-year score	
	M	*SD*	*M*	*SD*
DIBELS Score	1.91	.91	2.59	.78

Table 8

Students Who Did Not Attend Prekindergarten Average Test Scores at the Beginning and End of the Year

	Beginning-of-the-year score		End-of-the-year score	
	M	*SD*	*M*	*SD*
DIBELS Score	1.68	.97	2.59	.76

Using open-ended questions found in Appendix C, phase two of this study sought to explore the impact of structured prekindergarten on the readiness and literacy skills of Hispanic kindergarten students by interviewing kindergarten teachers. All interviewees had at least 10 years of teaching experience and held either graduate certification or national board certification.

The researcher carefully read and analyzed the raw data in order to identify broad categories or themes (Creswell, 2012). The raw data were then uploaded in Excel. Next, the Excel file was loaded into NVivo software for analyses. The data files from NVivo can be found in Appendix D. Several themes emerged from the raw data: maturity and social skills, literacy and/or language readiness, and the overall advantages of the prekindergarten experience. Tables 9 displays the data obtained from the one-on-one interviews.

Table 9

Four Themes from NVivo Program

Age	Socialization and Maturity	Foundation in Language	Advantages of Prekindergarten Year
Teacher 1 Age is important	Social skills are more refined Innate readiness because of age Transitioning to kindergarten seamlessly Function in classroom successfully Adapt to structure rules, and setting; waiting their turn, sharing attention	Kindergarten is about phonemic awareness and phonics Sight recognition and letters High Frequency words and a lot of work with sounds	Preknowledge and exposure
Teacher 2 Age is very important	Social skills help them be better students If a student is not ready for Kindergarten developmentally, the experience is negative They are not ready for the rigor They are more mature and their social skills help them be better students	They start day one with letter recognition Prekindergarten students have worked with print for a year, come in knowing those letters They respond better. That year of preparation in kindergarten gives them a head start on language, writing, speaking, and knowing what to do at school. My prekindergarten students can write quicker and this typically are difficult skill.	They respond better. That year of preparation in kindergarten gives them a head start on language, writing, speaking, and knowing what to do at school. That year of instruction before kindergarten gives them a head start. My prekindergarten students can write quicker and this typically are difficult skill. They are very much ahead. Prekindergarten students have worked with print for a year

Age	Socialization and Maturity	Foundation in Language	Advantages of Prekindergarten Year
			(continued)
Teacher 3 Age tends to be one of the key factors There is a gigantic difference between a 4-yr old and a 5-yr old	The way they view things and respond to things is like night and day It shapes how and when they listen, how hard they try, and how they handle success, failure and redirection These children are kindergarten ready socially and academically.	Their language skills are so much better. They always know more sounds and recognize more letters. They are more likely to put these sounds together. Yes if they come with strong language, they do better on assessment.	Yes, prekindergarten gets them ready for the structure of kindergarten. They have so much foundation These children are kindergarten ready socially and academically.
Teacher 4 Age is important	They adapt better and understand the routines and the rules sooner Have to be ready to handle things. If they are immature we get tears and tantrums	That pre teaching in language makes them strong in all the prerequisite skills for reading. The have building blocks in their skills They are able to master the tasks in reading and writing	Prekindergarten helps. The pre-k student is just more prepared, it's step forward towards school success
Teacher 5 Sometimes they do well in spite of being younger	The students are at about the same place The pre-k student gets along better with peers.	My prekindergarten students always do better with concepts of print and first sounds. My prekindergarten students know what the cover of book is, the title, the illustrations. They have prior knowledge and this makes them more read	They have prior knowledge and this makes them more read They have already been a part of a class so the transition is easier The pre-k student gets along better with peers.

Age	Socialization and Maturity	Foundation in Language	Advantages of Prekindergarten Year
			(continued)
Teacher 6 Age impacts whether they are developmentally ready to learn.	They sit still when you ask They understand that school is a learning time If they are too young or really too immature, they may not start learning or reaching their potential to the second part of the year. My students who went to prekindergarten do seem more mature	Prekindergarten students jump right into reading skills, the concepts are familiar. They have already had activities with sound and blends. Reading is easier	That light bulb goes off a little quicker because they have already heard it and done it before. So even the format of learning is similar and their pre-k life gets them started right. They have had a whole year of formal learning and it helps. That makes lots of the activities easier, so is just about every concept My students who went to prekindergarten do seem more mature
Teacher 7 No reference	My prekindergarten kids easier to manage and direct Their immaturity slows down progress If they are mature then school isn't too traumatic Walking in a line or not talking out or while someone else is talking is new but that prekindergarten kid usually has that down pat. But these students have strong social skills. They learn respecting others and personal space and courtesy in prekindergarten	These students can point to the lowercase and the uppercase letter, and can say it and even say the sound	

Age	Socialization and Maturity	Foundation in Language	Advantages of Prekindergarten Year
			(continued)
Teacher 8 Age impacts rarely in academics but it does in social skills. I think it helps if they are bit older and more settled down.	If they have been in prekindergarten they have already established some school behaviors and understanding. They do well with their peers They aren't ready to toe the line Yes, the maturity level helps.	They usually have some fundamental skills especially in language that makes the lessons make more sense. The kids who have never been anywhere but home may not even recognize the letters in their name. They are anxious to read and write.	The kids that have been to prekindergarten are not a blank slate, they have learned things that make kindergarten assessments easier. They are anxious to read and write.
Teacher 9 I haven't seen where age is important.	They are used to school rules They also do well socially	The stronger they are in language skills the stronger they are with reading and writing. They learn this in prekindergarten I have some prekindergarten students knowing every letter and sound. Being better prepared to learn to read	They really have a better chance of reaching whatever potential they have if they have gone to pre-k. Pre-k paves the road and we just zoom right along to the finish line. They are used to school rules
Teacher 10 Age does not play a big role in how well they do.	They can handle the environment and the structure and the rigor Prekindergarten students are far ahead of their classmates on maturity and even social skills. They are ready to learn and work and get things done.	As you teach them the letters and sounds the light bulb goes off quicker for the prekindergarten students. The prekindergarten students have be doing activities in this area for an entire school year.	They are just more acclimated to what we do at school. In the classroom and outside of the classroom. Prekindergarten students are far ahead of their classmates Pre-K kids have be doing activities in this area for an entire school year

Maturity and social skills. Chronological age is often the only requirement for entry into kindergarten. However, Morrison, Griffith, and Alberts (1997) established that the age a student begins school is not a predictor for later learning. As shown in Figure 1, the teachers all referenced the maturity and social skills of the students who attended prekindergarten. Teacher 6 stated, "My students who went to prekindergarten do seem more mature and ready to learn." Teacher 10 emphatically answered, "pre-kindergarteners are far ahead of their classmates on maturity and even social skills." Teacher 6 explained, "if the students are too young or really too immature, they may not start learning or reaching their potential [until] the second part of the year." Teacher 7 believed that if the students are mature, school is not too traumatic for them. The teachers all implied that prekindergarten is an overall advantage when it comes to maturity.

Social skills. Figure 1 shows that all 10 respondents implied that the social skills of their students who had attended prekindergarten were markedly advanced. Teacher 10's answer is equally emphatic: "Pre-kindergarteners are far ahead of their classmates on maturity and even social skills." Teacher 1 posited that the social skills of prekindergarten students are more refined, and they transition to kindergarten seamlessly as they understand that waiting their turn and sharing attention are important skills. Teacher 3 explained that prekindergarten "shapes how and when they listen, how hard they try, and how they handle success, failure or redirection." Teacher 4 conveyed that they adapt better and understand the routines and rules sooner. According to Teacher 8, "If they have been in prekindergarten, they have already established some school behaviors and understanding and they do well with their peers." Teacher 9 asserted that

the students do well socially after the prekindergarten experience; whereas Teacher 7 asserted that the students have acquired strong social skills and they have learned respect for others, personal space, and courtesy in prekindergarten.

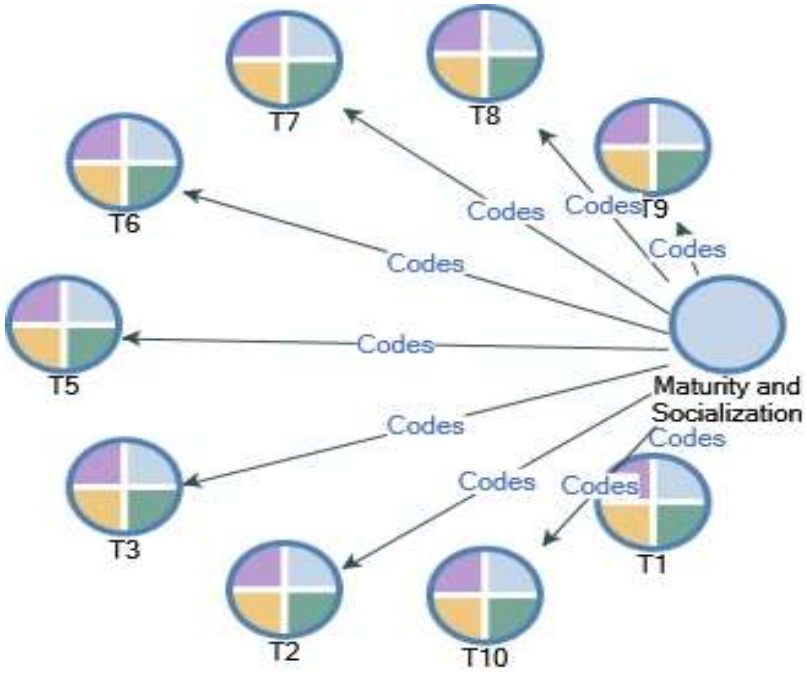

Figure 1. References to Maturity and Socialization (NVivo).

The third theme illuminated the impact of prekindergarten instruction on language and/or literacy skills. Figure 2 illustrates that all respondents referenced language skills performance in kindergarten as a benefit of prekindergarten; furthermore, they noted that the prekindergarten instruction in this area supported the curriculum and instruction for the following year. The teachers perceived that the students who participated in prekindergarten enter school knowing more letters, sounds, and blends. Phonics is integral in learning to read. The students who have foundational instruction grasp these concepts more readily. Teacher 5 shared that prekindergarten students can identify the cover of the book, the title, and the illustrations. Teacher 3 explicated, “Their language

skills are so much better, and they always know more sounds and recognize more letters." On the other hand, as stated by Teacher 8, "those kids who have never been anywhere but home may not even recognize the letters in their names." Teacher 9 emphatically stated, "Language and reading go hand in hand. The stronger they are in language skills, the stronger they are with reading and writing. They learn this in prekindergarten and Head Start." Accordingly, Teacher 4 conveyed, "pre-teaching in language makes them strong in all the prerequisite skills for reading."

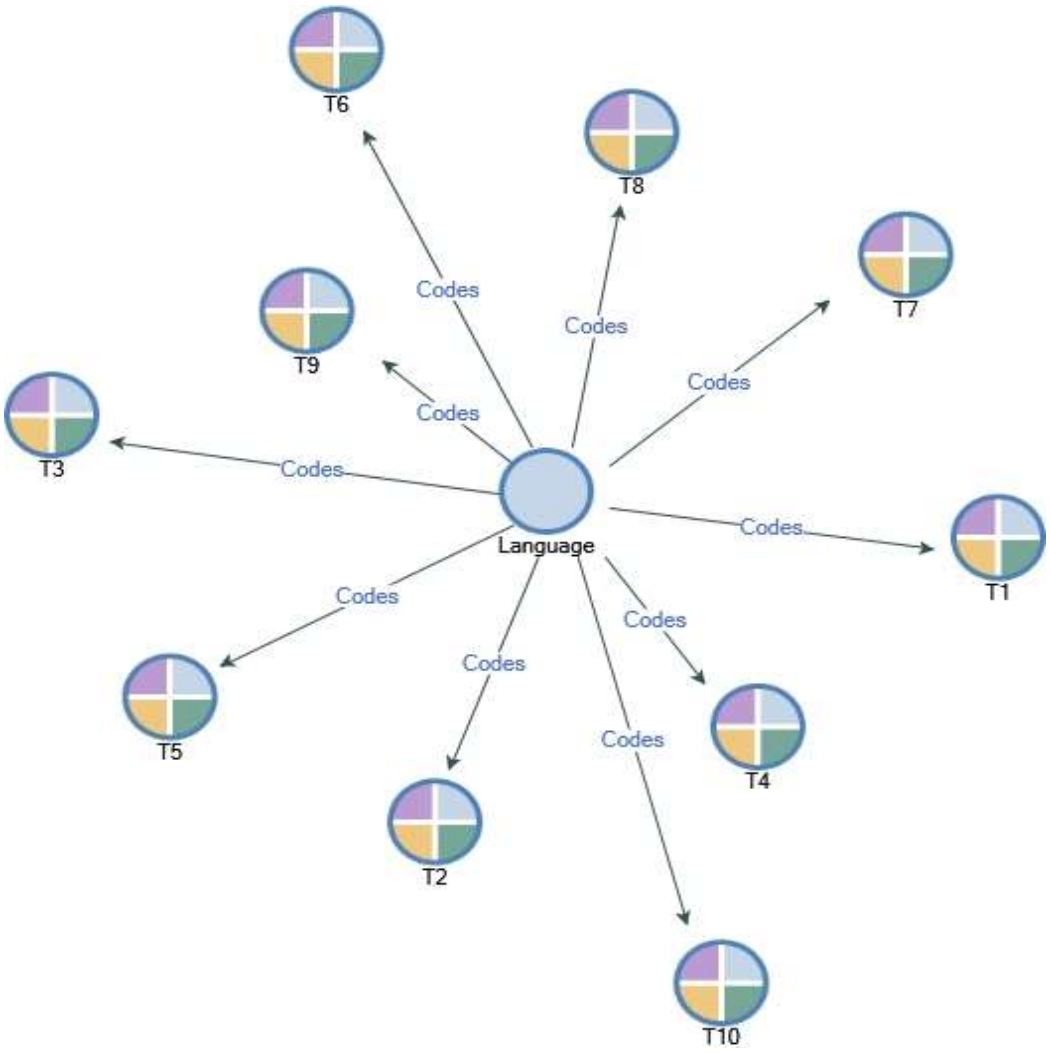

Figure 2. References to Language Skills (NVivo).

The next theme that developed compiled the overall advantages of the prekindergarten experience. The interviewees perceived that a structured classroom experience before kindergarten is one salient factor in the success of a student in kindergarten. Students who participate in prekindergarten understand the classroom environment, the role of the teacher, and have a concrete idea of what they should do while at school. Teacher 9 believes they are more acclimated to what we [teachers and students] do at school. "The year in prekindergarten gives them a head start on language, writing, speaking, and knowing what we do at school." Teacher 8 stated, "The students that have been to prekindergarten are not a blank slate; they have learned things that make kindergarten assessment easier." Teacher 9 believed, "They really have a better chance of reaching whatever potential they possess if they have gone to pre-k." Further, the teachers perceived that prekindergarten has a positive influence on students academically and socially. Teacher 4 concluded, "the pre-k student is just more prepared." Figure 3 demonstrates that all 10 respondents referenced the importance of the prekindergarten experience.

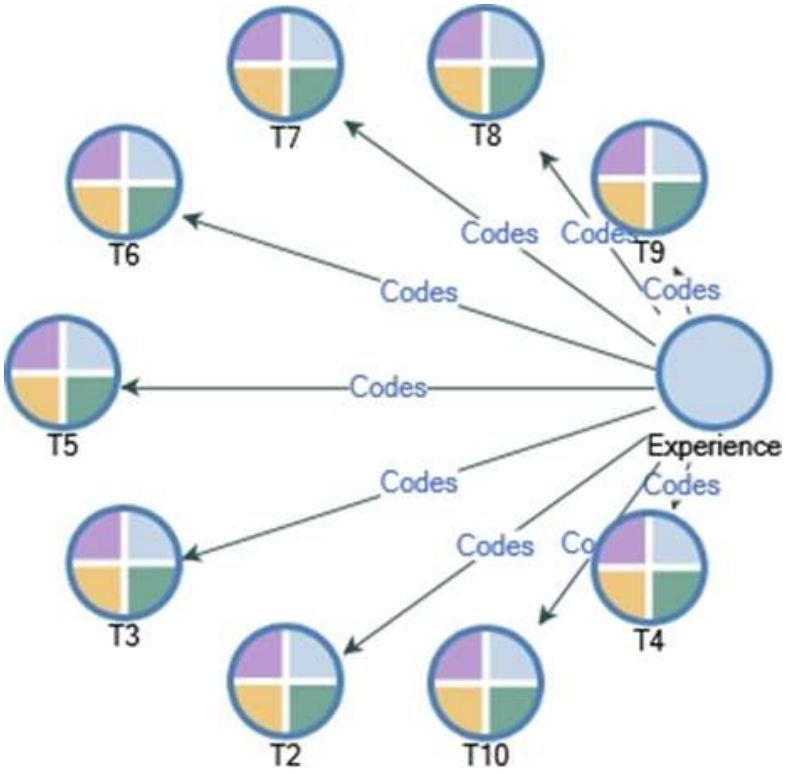

Figure 3. Teachers Referenced the Positive Effects of Prekindergarten Experience (NVivo).

Figure 4 shows that nine of 10 respondents positively referenced the areas of language and socialization and were therefore assigned codes in both.

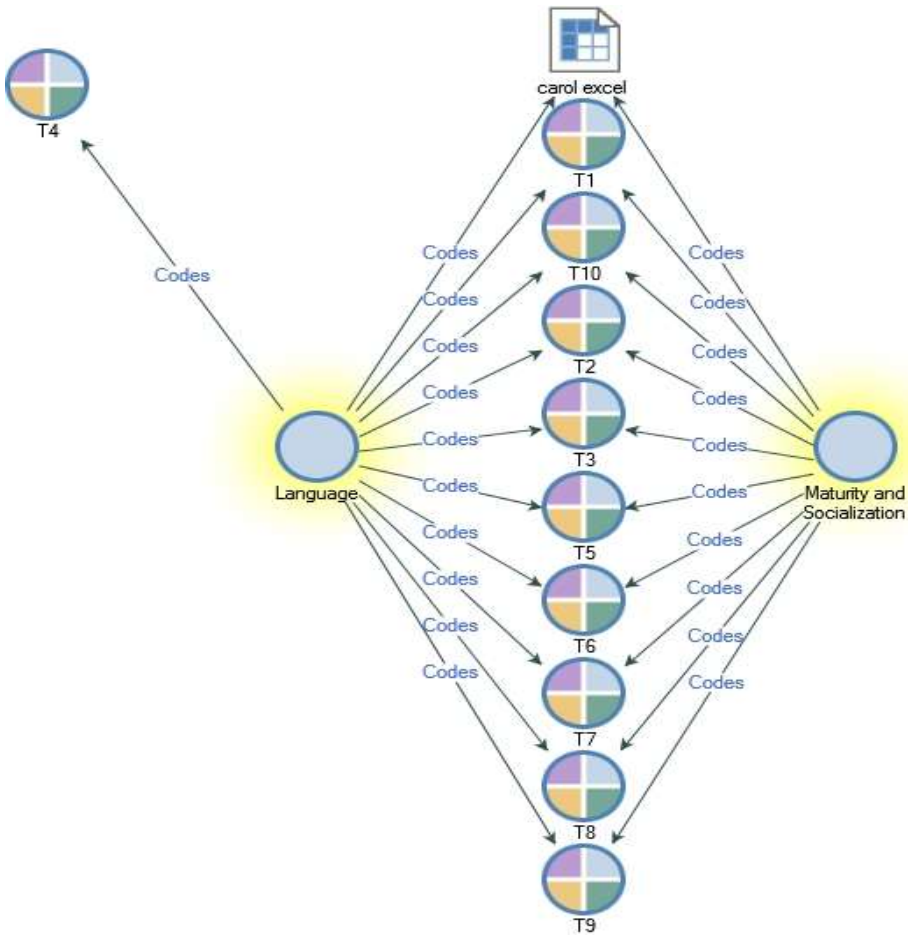

Figure 4. Nine of 10 Referenced Language and Socialization Categories (NVivo).

Conclusion

The participants were asked if they perceived that age is an important corollary with literacy and kindergarten readiness. Four of the respondents answered yes, three of the respondents answered no, and three respondents were neutral in their responses. Overall, there was no consistent agreement in whether age is important to literacy and kindergarten readiness. Nevertheless, all respondents agreed that prekindergarten benefited students per the references above.

Chapter 5: Discussion

Introduction

NAEP data showed that the disparity between the achievement of Hispanic and non-Hispanic students has remained virtually unchanged for several decades (Allen, 2011). Although schools districts have taken advantage of numerous local, state, and federal programs designed to narrow the achievement gap, many of the programs, to include accountability legislation such as NCLB, have not yielded the desired results. Prekindergarten has emerged as a viable school improvement strategy to promote school readiness and close achievement gaps in the elementary school and beyond (Garcia & Jensen, 2009; Magnuson & Waldfoegel, 2005). Experts believe early intervention programs such as federally funded prekindergarten may hold promise for helping overcome educational deprivation. Barnett and Frede (2010) reported that high-quality and effective early education can help alleviate high rates of school failure, reduce the number of dropouts, decrease crime, prevent delinquency, and better prepare high school students for the workforce. This research examined the reading achievement gains of Hispanic students in kindergarten by comparing the scores of the Hispanic students who attended prekindergarten in County X to the Hispanic students who did not attend prekindergarten in County X.

This mixed-methods study followed two phases. Phase one, the quantitative study, analyzed assessment data to answer whether Hispanic students who attended structured prekindergarten in County X performed better on the kindergarten DIBELS literacy assessment than Hispanic students who did not attend prekindergarten. Student participants included 137 Hispanic kindergarteners: 91 of the students did not attend prekindergarten, whereas 46 did attend prekindergarten.

Phase two, the qualitative study, utilized one-on-one interview sessions to explore the impact of prekindergarten on readiness and literacy skills from the perception of 10 kindergarten teachers. The interviewees, selected from the schools in County X, had at least 10 years teaching experience and held either graduate certification or national board certification. All were female in gender.

Research Questions

The following questions guided this mixed research study.

Quantitative Research Question. Do Hispanic students who attend structured prekindergarten in County X perform better on the kindergarten DIBELS literacy assessment?

Qualitative Research Question. What impact does structured prekindergarten have on the readiness and literacy skills of Hispanic kindergarten students?

This chapter provides a discussion of the findings and the research conclusions. This chapter also includes the significance of these findings along with the implications for current practice. Finally, Chapter 5 suggests recommendations for future research.

Discussion of Data Analyses, Findings, and Conclusions

To analyze the degree of impact of prekindergarten on Hispanic students, a *t* test was conducted. An independent samples *t* test is an analysis of two populations' means through the use of statistical examination. A *t* test with two samples is commonly used with small sample sizes, testing the difference between the samples when the variances of two normal distributions are not known. A *t* test looks at the *t* statistic, the *t* distribution and degrees of freedom to determine the probability of (Investopedia, 2014). The first analysis determined the degree to which prekindergarten experience impacts kindergarten reading performance of Hispanic students as measured by the end-of-year composite

scores of the two groups. No statistical significance was reflected. An independent sample *t* test was used to test Null Hypothesis 1. There was not a statistically significant difference in the scores of the students who attended prekindergarten compared to the students who did not attend prekindergarten; therefore, Null Hypothesis 1 was accepted.

Further analysis was done, again with a *t* test, to measure and compare the difference in scores from beginning of the year to end of the year and as well as the average scores of the two groups. Both groups showed improvement in scores; however, the group that attended prekindergarten had a greater increase from the beginning of their kindergarten year to the end of their kindergarten year when compared to those students in the study who did not attend prekindergarten.

Also, a *t* test comparing the average scores of the two groups was conducted. Again, the students who attended prekindergarten outperformed those who did not. It should be noted that both groups of students had members who were performing across the three levels: well below benchmark, below benchmark, and at benchmark at the beginning, middle, and end of year. However, the difference in the initial score and the end point score was greater for the students who attended prekindergarten. Because the students who attend prekindergarten are selected based on at-risk factors, it is safe to assert that the experimental group possessed deficits that their counterparts did not have. Students who attended prekindergarten in County X made greater gains from start to finish than their peers who did not attend prekindergarten. The results of this research study support the literature presented in Chapter 2 that indicated early interventions such as prekindergarten play a critical role in preparing children for school success (Andrews & Slate, 2001; Magnuson & Waldfogel, 2005; Ramey & Ramey, 2005).

The increase in scores by Hispanic students who attended prekindergarten implies

that prekindergarten certainly contributed to closing the literacy gap as both the control and experimental groups showed equal performance in kindergarten. The Harvard Graduate School of Education published a study that concluded that prekindergarten helps the most at-risk students. Gormley et al. (2005) reported that the positive results of prekindergarten can largely, and maybe entirely, be attributed to minority children and poor children. Further, children who participate in prekindergarten programs have higher language, literacy, and mathematics outcomes (Gormley et al., 2005; Gormley, Phillips, & Gayer, 2008; Hustedt, Barnett, Jung, & Goetze, 2009; Hustedt, Barnett, Jung, & Thomas, 2007; Wong, Cook, Barnett, & Jung, 2008).

To answer the qualitative research question, what impact does structured prekindergarten have on the readiness and literacy skills of Hispanic kindergarten students, the data from the interview sessions were analyzed. The findings demonstrate that the kindergarten teachers perceived that prekindergarten has a positive impact on kindergarten readiness and literacy skills especially in the three categories: maturity and social skills, literacy and/or language, and the overall advantages of the prekindergarten experience.

The kindergarten teachers perceived that students with prekindergarten experience understand classroom polices and the classroom environment. Also, these students easily transition into the structure of kindergarten. Students with prekindergarten experience have a better grasp on how to interact not only with their peers but also adults, and they are far ahead of their peers in maturity and social skills. One interviewee stated, "Prekindergarten students know how school goes." They understand routine and rules sooner, and they have stronger social skills. McNamara, Scissons, and Simonot (2004) evaluated the reading ability of a cohort of kindergarten students who were highly trained

in social skills through a kindergarten readiness program similar to prekindergarten. The study found that students highly trained in social skills were much more responsive to the instruction and had a higher mastery level in phonemic awareness. The data from the teachers interviewed in this study agree with the findings of the 2004 study which indicates that the socialization experiences in prekindergarten advance readiness for kindergarten.

Secondly, the kindergarten teachers conveyed that students who attended prekindergarten came with a stronger foundation in letter recognition and letter sounds, a precursor to the reading process. A respondent postulated, "Language and reading go hand and hand. The stronger they are in language skills, the stronger they are with reading and writing." One teacher expressed that students with prekindergarten experience know the cover of the book, the title, and the illustrations. Research conducted in the Boston Public Schools followed the progress of students who had the benefit of a year of research-based instruction in literacy, math, and writing in a structured setting prior to kindergarten. In five of seven assessments in math and seven of eight assessments in literacy, there was a statistical significance in the scores which showed that the students in that study were better prepared and performed better in kindergarten (Gormley, 2005).

The final category that developed was comprised of the overall advantages of prekindergarten. The teachers revealed that students with prekindergarten experience entered kindergarten ready to learn. One teacher said, they come in knowing "what we do at school." Another interviewee stated, "The students that have been to prekindergarten are not a blank slate; they have learned things that make kindergarten assessment easier." Further, according to one respondent, these students really have a better chance of reaching their potential in kindergarten.

The perceptions of the teachers in County X reflected those of participants in other North Carolina studies. Wesley and Buysse (2003) conducted 20 focus groups in North Carolina to investigate the impact of various interventions on readiness. The groups included parents, prekindergarten and kindergarten teachers, and elementary principals. The majority of participants across all four groups expressed similar thoughts about how children perform if they have had prekindergarten experiences before formal schooling. The consensus was that prekindergarten provides the vehicle for preparing students in the area of academics and socialization.

Recommendations for Further Action

A cost-benefit analysis should be conducted to determine the feasibility of expanding the current prekindergarten program in County X to additional sites with particular attention to the Hispanic students, as the findings of this study demonstrated the benefits for Hispanic students in literacy readiness and other important areas. Presently, there are 11 prekindergarten programs available in County X. Expanding the prekindergarten program increases access and enables more students to reap the rewards of this early childhood intervention. Also, as discussed in Chapter 1, the most recent test data showed that only 36.9% of the third graders in County X scored on grade level. Test results alone justify the need for additional support and stronger emphasis on early intervention.

The results of this study may influence educational policy in North Carolina. Subsequently, this study could lead to the implementation of universal prekindergarten. Proponents of universal prekindergarten purport that services to all students increase the equality for all children despite their SES or race (Gormley et al., 2005). Universal prekindergarten in other states has successfully documented progress in reducing the

school readiness gap that at-risk children face (Barnett et al., 2008).

Recommendation for Further Research

Further research is needed to determine the long-term effects of prekindergarten. It is recommended that stakeholders in County X conduct a longitudinal research study to track students' academic progress over time. A longitudinal study which follows each student throughout elementary, and perhaps higher grades, would provide critical data on the long-term effects of prekindergarten enrollment for Hispanic students and other students as well. Also, further research should be conducted that controls for the following variable: students who attended prekindergarten in a private setting. Further studies may suggest that the prekindergarten experience could be the key to avoiding grade retention, preventing illiteracy, and eliminating the academic achievement gaps that continue to exist among students. This study was limited to the academic achievement gains of Hispanic kindergarten students who attended prekindergarten in County X. Additional research should be conducted to determine the impact of prekindergarten programs on reading performance in other districts in the state of North Carolina.

Conclusion

The findings of this mixed-methods study suggest that the prekindergarten experience in County X has a positive impact on kindergarten readiness and literacy skills for Hispanic students. Prekindergarten is a topic of scrutiny in the educational world today. As participation in prekindergarten programs increases, the relationship between prekindergarten programs and kindergarten success will become more of a concern for educators and policymakers alike. Based on the findings of this study, it is imperative that County X consider prekindergarten as a priority on the continuum of educational services offered to Hispanic students.

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Appendix A

Letter of Request

March 25, 2016

Dr. XXXX
Assistant
Superintendent
County X Public Schools

RE: Permission to Conduct Research Study

Dr. XXX:

I am writing to request permission to conduct a research study in County X. I am currently enrolled in the Educational Leadership Doctoral Program at Gardner-Webb University, located in Boiling Springs, N.C., and I am in the process of writing my dissertation. The study is entitled, *Structured Pre-Kindergarten: Is It a Bridge for the Reading Achievement Gap for Hispanic Kindergarten Students?* This study seeks to determine the impact for those students who participated in NC Pre- Kindergarten as measure by DIBELS. If approved, the following research design will be employed:

- DIBELS scores of randomly selected students will be analyzed, comparing the scores of those who participated in structured Pre-Kindergarten with those who did not. Benchmark data gathered at the beginning (BOY), middle (MOY), and end (EOY) of the kindergarten year will be used. Data will be disaggregated as follows: by total group, by Hispanic (subgroup), and by socio-economic status.
- Selected teachers will be surveyed to ascertain if they perceive that participation in structured Pre-Kindergarten fosters literacy.

There are no foreseeable risks involved in participating in this research and there are no direct benefits to participants. However, participation in this study will contribute to the understanding of literacy and the impact of current pre-kindergarten programs and practices. It may guide future decisions and allocations with regard to early education for minorities and young learner at large. Participation in this study is confidential and voluntary. Personal information of respondents will not be collected and individual results will be assigned a randomly generated code to ensure anonymity. All data records for this study will be stored electronically and deleted after the study is completed. Published results from this study will not include any individual responses or any other information that can be used to identify participants. All results will be reported as group data.

Your approval to conduct this study will be greatly appreciated. If you should have any questions regarding this research project, you can contact me by email at XXXXX or at XXXX. Any additional questions about the rights of human subjects can be answered by the chair of my doctoral committee, Dr. Kathi Gibson (XXXXX), or by the Chair of the Gardner- Webb University Institutional Review Board, Dr. XXXX.

If in agreement, kindly sign below return this document to me at your earliest convenience.

Thank you for considering this request.

Sincerely,

Carol H. Artis
Gardner-Webb University

cc: Kathy Gibson,
Ph.D.
Dissertation
Chair

_____

Dr. XXX

Assistant Superintendent

Appendix B

IRB Approval

THE INSTITUTIONAL REVIEW BOARD
of
GARDNER-WEBB UNIVERSITY

This is to certify that the research project titled
Structured Prekindergarten: Is It a Bridge for the Reading Achievement Gap for Hispanic Students?

being conducted by Carol Hayes Artis

has received approval by the Gardner-Webb University IRB. Date 6-6-16

Exempt Research

Signed _____
Department/School/Program IRB Representative

_____
Department/School/Program IRB Member

Expedited Research

Signed _____
Department/School/Program IRB Representative

_____
Department/School/Program IRB Member

_____
IRB Administrator or Chair or Institutional Office

Non-Exempt (Full Review)

Signed _____
IRB Administrator

_____
IRB Chair

_____
IRB Institutional Officer

Expiration Date _____

IRB Approval:

✓ Exempt ____Expedited _____Non-Exempt (Full Review)

Revised 3/10

Appendix C

Open-Ended Questions Posed to Interviewees

Open Ended Questions

Do you think that age impacts kindergarten readiness and subsequent academic performance?

Do the students who have attended a pre-kindergarten exhibit more maturity, and does this impact kindergarten readiness

Do the students who have attended a pre-kindergarten have a stronger foundation in language skills that are pre-requisites for reading?

Motor Skills are integrated into the pre-kindergarten curriculum. Do you feel that motor skills instruction/experience impacts kindergarten readiness?

Appendix D

Transcribed Raw Data

Participant	Do you think that age impacts kindergarten readiness and subsequent academic performance?	*Do the students who have attended a pre-kindergarten exhibit more maturity, and does this impact kindergarten readiness*
Teacher 1	Age is very important for success.	*These children function in the classroom more successfully. They understand turn taking when speaking to each other and when the teacher talks.*
Teacher 2	Yes, if they are too young they are not ready for the rigor.	*They are more mature and their social skills help them be better students.*
Teacher 3	Age tends to be one of the key factors.	*Yes pre-kindergarten gets them ready for the structure of kindergarten.*
Teacher 4	I agree, age is important.	*Pre-kindergarten students know how school goes. A big part of the first weeks is teaching that, but they are ahead.*
Teacher 5	No, it isn't always key. Sometimes they do well in spite of being younger.	*By the time kindergarten starts, all of the students are at about the same place but some have better social skills.*
Teacher 6	Age impacts whether they are developmentally ready to learn.	*My students who went to pre-kindergarten do seem more mature and ready to learn. They have had a whole year of formal learning and it helps.*
Teacher 7	If they are too young, their immaturity slows down the progress.	*My pre-kindergarten kids easier to manage and direct. This helps in all areas.*
Teacher 8	Age impacts rarely in academics on social skills.	*Yes, the maturity level helps. The more settled they are, they easier they are to teach…and the more they learn.*
Teacher 9	I haven't seen where age is important.	*No, it doesn't make a great big difference. They are used to school and rules but it doesn't impact the skill mastery much.*
Teacher 10	Age does not play a big role in how well they do.	*Yes, the pre-kindergarten students are far ahead of their classmates on maturity and even social skills. They are ready to learn and work and get things done.*

Participant	Do the students who have attended a pre-kindergarten have a stronger foundation in language skills that are pre-requisites for reading?	Motor Skills are integrated into the pre-kindergarten curriculum. Do you feel that motor skills instruction/experience impacts kindergarten readiness?
Teacher 1	Yes the letter and sound recognition and basic language knowledge is much higher.	The motor skills are not as important. It helps, with writing, but not all the things we do.
Teacher 2	Absolutely yes. They respond to instruction.	My pre-kindergarten students can write quicker and this typically are difficult skill. They are very much ahead.
Teacher 3	Yes if they come in with strong language, they do better on assessments.	Motor skills are as important as any of the skills we teach and measure. When they have this down from their pre-kindergarten year, it helps tremendously.
Teacher 4	Their language skills have everything to do with their reading. Pre-kindergarten helps.	They all have trouble with motor skills and we have to help them all.
Teacher 5	My pre-kindergarten students always do better with concepts of print and first sounds.	They do tend to have better fine motor skills, but the gross motor skills are about the same. So it helps some, but it isn't an absolute.
Teacher 6	Pre-kindergarten students jump right into reading skills, the concepts are familiar.	The pre-kindergarten kids do have strong motor skills and that makes lots of the activities easier.
Teacher 7	The things they teach in pre-kindergarten make my job easier.	The motor skills helped them in pencil paper activities.
Teacher 8	The kids that have been to pre-kindergarten are not a blank slate, they have learned things that make kindergarten assessments easier.	Some of them can move less awkwardly and this helps them in many things that we do. The impact is not so heavy in the academics but it does help.

Teacher 9	Language and reading go hand in hand. The stronger they are in language skills the stronger they are with reading and writing. They learn this in pre-kindergarten and Head Start.	The curriculum, even in kindergarten has a lot of writing in it. When they have had pre-kindergarten they are able to do this more often.
Teacher 10	As you teach them the letters and sounds the light bulb goes off quicker for the pre-kindergarten students. We are building on things they were already exposed to. They do better on DIBELS.	Motor skills come with developmental development, it's hard to teach.