The Relationship Between Early Childhood Education and Student Success

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THE RELATIONSHIP BETWEEN EARLY CHILDHOOD EDUCATION AND STUDENT SUCCESS

by

Fina F. Gayden-Hence

A Dissertation
Submitted to the Graduate School of The University of Southern Mississippi in Partial Fulfillment of the Requirements for the Degree of Doctor of Education

May 2016
ABSTRACT

THE RELATIONSHIP BETWEEN EARLY CHILDHOOD EDUCATION AND STUDENT SUCCESS

by Fina F. Gayden-Hence

May 2016

The purpose of the study was to determine whether differences exist in performance on high-stakes accountability tests in third grade and high school among seniors who attended preschool and those who did not attend preschool. Test performance was measured using 2006-2007 third grade Mississippi Curriculum Test (MCT) reading and math scaled scores, English II and Algebra I Subject Area Testing Program-2 (SATP2) scores, and ACT composite scores. The study further analyzed the difference among groups based on retention rates, gender, and socioeconomic status. The study also examined the beliefs of parents of preschool attendees about the impact of preschool on their children’s preparation for formal school success using a parent questionnaire.

A total of 185 parent questionnaires were accompanied by signed parental consents and could be included in the study. Frequencies and percentages were provided for each of the independent variables. Analysis of the data found no statistically significant differences among students’ academic performance with regards to preschool type. However, statistically different results were found when considering a student’s Algebra I SATP2 scores with regard to retention history. In addition, statistically significant differences were detected on ACT scores when considering socioeconomic status and public school preschool. The study found no differences in reports of parental
beliefs about the impact of preschool on reading and math readiness. The study further revealed that parents’ beliefs about the impact of preschool on reading and math achievement were moderately positively correlated to subsequent performances MCT reading/English I SATP2 and MCT math/Algebra I SATP2 tests.

Most parents agree that their child attending preschool was very effective in preparing them for success in kindergarten through twelfth grades and even future employment. However, this study revealed that as children got older parents reported less involvement with homework assistance, and volunteering at their child’s school. Parents were neutral or in agreement up through grade five, after which many disagreed to volunteering at their child’s school, receiving helpful information from school, and helping with homework.
THE RELATIONSHIP BETWEEN EARLY CHILDHOOD EDUCATION AND STUDENT SUCCESS

by

Fina F. Gayden-Hence

A Dissertation
Submitted to the Graduate School and the Department of Educational Leadership and School Counseling at The University of Southern Mississippi in Partial Fulfillment of the Requirements for the Degree of Doctor of Education

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May 2016
DEDICATION

Through the blessings and help of God and family, the culmination of many of sweat and tears can be realized, so it is to them that I dedicate this work. God’s grace, mercy, and favor have surrounded me throughout this process, and I am both humbled and thankful. To my family, your unwavering support for my goals has made all of my successes possible. To Momma, I tear up just thinking about all that you have been to me throughout my entire life and especially as a mom and a student. Your constant motivation to be my best and your support on my journey to be the best has made this dedication possible. All the trips to pick up my children, babysitting, assistance with projects, transportation to and from one event or activity to another while I was in class or at the library are undeniable reasons to celebrate you. Despite your own personal illnesses and losses, your prayers and provisions helped me through the struggles of becoming a single mom of three, yet allowing me to continue my pursuit of this degree. It was your life as a graduate student and an educator that inspired and motivated me to go further. I love you for being the awesome mother, “granny,” friend, confidant, provider, educator, motivator, supporter, and exemplary role model that you have always been.

Daddy, you have made education a priority all my life and made sure that my brothers and I had every opportunity to pursue higher degrees. From my years at the Mississippi School for Mathematics and Science through undergraduate to graduate school, you have held high expectations for my future success and encourage me to keep moving higher. To my oldest brother, Roy, thank you for stepping in at a difficult time in mine and my children’s lives. Providing for the kids in the ways that you did freed me up
to continue working on this degree. You have definitely been the positive male presence they needed, and I am grateful.

I also dedicate this work to my younger brother, Chase, whose posthumous influence continues to motivate me. During the last year of his life, his persistent encouragement for me to move forward was no indication to me that he would not be around to celebrate later. Even though he was my “little” brother by twelve years, I loved and admired him and his work ethic greatly. His short life was filled with excitement and accomplishment because he “Chased” his dreams of becoming an educator like our parents and me. He inspired me with his passion for education and learning, as well as, his energy and enthusiasm in pursuing higher degrees in the field. Earning a Bachelor’s, Master’s, and Specialist’s degrees within five years of graduating high school was nothing short of amazing! This dedication is bittersweet because Chase’s goal of catching up with me and the two of us graduating with our doctoral degrees simultaneously will not be realized. I am thankful to him for not only being a great brother but also a colleague with whom I could call on and converse with intelligently about most anything, especially the field of education.

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CHAPTER I

INTRODUCTION

This study addressed the relationship of early childhood education to student success. Chapter I introduces the study. The following sections will provide details on the purpose of the study and the issues that created a need for the study. The research questions are introduced, along with pertinent definitions, study delimitations, and assumptions.

Purpose of the Study

For years, researchers from various fields of study have examined early childhood education programs in an attempt to match necessary academic and behavioral skills required to experience success in the preschool classroom (Alexander, 2015). These key components are the basis of major movements and key reforms for early childhood education (i.e., Early Head Start, Head Start, Universal Preschool) because they have been shown to have a significant impact in predicting children’s future success in their academic, professional, and personal lives (Cunha & Heckman, 2010; Duncan & Magnuson, 2013; Schweinhart et al., 2005; Weiland & Yoshikawa, 2013).

The purpose of this study was to determine whether differences exist in performance on high-stakes accountability tests in third grade and high school among seniors who attended preschool and those who did not attend preschool. The study further analyzed the difference among groups based on retention rates and ACT scores with regard to gender and socioeconomic status. Finally, this study examined the beliefs of parents of preschool attendees about the impact of preschool on their children’s preparation for formal school success.
Background

During President Lyndon B. Johnson’s administration, the need for early education in the nation’s war against poverty was recognized. In his speech announcing the creation of Head Start on May 18, 1965, Johnson stated the following:

Five and 6-year-old children are inheritors of poverty’s curse, and not its creators. Unless we act, these children will pass it on to the next generation, like a family birthmark….I believe that this is one of the constructive, and on the most sensible, and also one of the most exciting programs that this nation has ever undertaken…

(as cited in Peters & Woolley, n.d., para. 9)

Not only do school leaders and educators recognize the need for quality early childhood education programs; many federal, state, and local lawmakers, city and state government officials, and corporate and community leaders also understand the importance as well (The White House, 2013). President Obama, in his 2013 State of the Union address, proposed the expansion of access to high-quality preschool for every child in America:

In states that make it a priority to educate our youngest children…studies show students grow up more likely to read and do math at grade level, graduate high school, hold a job, form more stable families of their own. We know this works. So let’s do what works and make sure none of our children start the race of life already behind. (The White House, Fact Sheet, 2013, para.1)

In the months following the address, the president enlisted help from other leaders, on all levels and from all walks of life, to join in the effort to provide funding to help ensure that more children had access to early education. In December 2014, the president held
the White House Summit on Early Education, which garnered over $1 billion in support of America’s youngest and most valuable assets (The White House, 2014).

Even though the need is presumed by many to be prevalent and evident, in 2013, less than 3 out of every 10 four-year-olds were enrolled in a high-quality preschool. Only 39 states and the District of Columbia were funding their state’s preschool (Slack, 2013). Willen (2012) pointed out that Mississippi was the only state in the southern United States that had not committed to fund prekindergarten. In that same article, the author points out that Mississippi has high rates of poverty, low standardized test scores, and low levels of kindergarten readiness (Willen, 2012). As of May 2015, forty-one states and the District of Columbia offered state-funded preschool programs. Mississippi joined the effort in 2014 when they pushed out their first state-funded preschool initiative (Mississippi First, n.d.).

With greater demands being placed on incoming kindergarteners, the expectations in the preschool classroom have increased. Alexander (2015) points out that the push for early literacy, numeracy, and language acquisition skills have necessitated the addition of higher level expectations and standards in the prekindergarten curriculum (as cited in Christie & Roskos, 2006). Since reading, language, and mathematical skills are the most heavily emphasized areas of most schools’ academic programs, it is not surprising that educators and researchers from various backgrounds focus their efforts to study them. Findings from the National Assessment of Educational Progress (NAEP) reveal that disparities continue to exist along racial, socioeconomic, and gender lines in reading and mathematics among fourth and eighth-grade children (The Nation’s Report Card, n.d.). It is interesting to note that researchers have found that, in America, socioeconomic status
is more significantly related to academic outcomes than is the case in other nations (Markham, 2014).

Andreas Schleicher, Director of Education for Organization for Economic Co-operation and Development (OECD), says “spending in the US is regressive in that schools in disadvantaged areas end up with fewer resources than schools in socially advantaged areas (in virtually all other industrialized countries it is the other way round)” (as cited in Rubin, 2013, para. 7). In a recent study conducted in Chile, Cortazar (2015) found that children from middle- to low-income households benefited more from attending early childhood care and education (ECCE) programs than those children from lower socioeconomic households. Leaders in Chile have responded to the disparity by providing financial incentives to children of disadvantaged backgrounds through scholarships and school grants (Schleicher, 2013). A study conducted by researchers for Campaign for Youth found that for every five youths who begin high school, one will not graduate after four years (Center for Law and Social Policy, 2014). During the 2011-12 school year, on average, 81% of high school students graduated within four years after entering ninth grade; of that average, 85% of students were white and 68% were black (U.S. Department of Education, 2014a). Researchers found that these issues were not due to race or geographic locale; the youth of Caucasian background and in rural areas had similar struggles and the misfortune of disadvantaged future (Campaign for Youth, 2010). This finding is reiterated in the report, The Condition of Education 2015, which concludes that during the 2013 school year higher poverty rates among school-aged children were found in the Southern United States (23%) compared to the northeast (18%), Midwest (19%), and the West (21%) (U.S. Department of Education, 2015).
These results highlight the gaps that continue to exist between socioeconomic groups. This study will address, in part, the extent to which prekindergarten may help to diminish such gaps.

As was previously noted, Lyndon Johnson recognized the poverty that many Americans faced during his administration; one response to the plight of these citizens was the authorization of Head Start in 1965 (Richmond, Stipek, & Zigler, 1979). The Head Start for School Readiness Act of 2007 and the No Child Left Behind Act of 2001 were more recent legislative mandates that set forth expectations for the education of all children from pre-primer through secondary levels of schooling. Since its inception, the 2001 NCLB has not been updated and has held many American schools to some seemingly unaccomplishable standards; this has made it necessary for states to seek refuge through flexibility waivers. The Obama administration approved waivers for many states and allowed the states’ local education agencies more control in overseeing school efforts to increase participation and improve student performance (Bidwell, 2013; Colorado Department of Education, 2011; Illinois State Board of Education, n.d.; Texas Education Agency, n.d.). More specifically, it was hoped that waivers would give schools and other entities flexibility in delivering high-quality early education programs that will serve to tighten the gap among the nation’s youngest learners. Mandates requiring measures of academic, social, and behavioral readiness were conceived out of the notion that children from disadvantaged backgrounds would be given expanded opportunity to succeed, beginning with a solid foundation of readiness skills that would level the academic “playing field” for these populations. Hence, one of the customary objectives of Head Start, public school pre-kindergarten, and private preschool programs
is to reduce the potential for gaps in educational accessibility and attainment (Samuels, 2014).

Brain research has revealed that a very critical span of time in a child’s life is during brain formation from birth to age five because this is when he/she has the greatest opportunity to set the stage for realizing his/her full social, cognitive, and academic potential (Stone & Lindsey, 1998). Therefore, early exposure to visual stimuli, oral language interactions, and repetition is critical in the brain development of young children and their preparation for school success in later years (Frey & Fisher, 2010). Even more important is earlier intervention to combat the potential impact on the development of less advantaged environments and fewer resources that children from low-income families experience in preparation for public school entry (Reynolds, Temple, Robertson, & Mann, 2001; Schweinhart et al., 2005). According to Heckman (n.d.), the future of the country’s economy is, in large part, dependent on the success of the younger generations and “providing developmental resources pays dividends for the disadvantaged child and society as a whole by providing better future outcomes in social and economic productivity” (as cited in The Heckman Equation, para. 3).

Statement of the Problem

Education is considered by most to be a very influential factor in the economy of a community (Howard-Jones, Washbrook, & Meadows, 2012; Keeley, 2007). Prior to 1965, the United States was experiencing a high prevalence of poverty and in response, President Johnson and his administration established Head Start. This program was intended to serve as a mechanism for providing equitable beginnings for disadvantaged children (Richmond et al., 1979). In its inception, Head Start’s intent was to provide
children in poverty with opportunities for quality education equal to those of their more advantaged peers (U.S. Department of Health and Human Services, 2015a). The hopes were that an early childhood program of this nature would improve futures of children and reduce the high school dropout rate (Puma et al., 2010).

In many states and across the country, the number of high school graduates has increased and the economic impact in those areas in which they reside has been noticed. Asia’s massive economic growth back in the 1980s and early 1990s was thought by many to be a direct effect of the relatively high literacy skills of the workforce (Keeley, 2007). Based on data from the National Center for Education Statistics, the status dropout rate decreased from 12 percent in 1990 to 7 percent in 2012, with most of the decline occurring after 2000 from 11 percent (U.S. Department of Education, 2014b). However, in the same report, there was no measurable difference in the rate between 2011 and 2012. Nobel Laureate economist James Heckman found in a study of the Perry Preschool Project that one-half of the achievement gaps evident at the end of high school was present before children started kindergarten (Heckman, Moon, Pinto, Savelyev, & Yavits, 2010). He further asserted that high-quality early childhood programs have been linked to reduced retention rates in school, reduction in the need for special education services, decreased high school dropout rates, lowered teen pregnancy rates, and prevalence of living in poverty.

Multiple studies have shown that early childcare experiences can have positive impacts on the social, emotional, health, cognitive, language, and social development of a child (Burchinal et al., 2008; Peisner-Fernberg et al., 2001; Puma et al., 2010). The differences in research findings question the sustainability of the effects of a child’s early
childhood experience. Results have been mixed. Much of the research related to long-term impacts of preschool on academic achievement of attendees has produced conflicting results. Some studies suggest that the benefits of participating in early childhood education programs are temporary and are unrecognizable by second grade (Duncan & Magnuson, 2013; U. S. Department of Health and Human Services, 2010).

Initial analyses of large-scale early childhood education programs like Head Start, High Scope/Perry, and the Carolina Abecedarian study, and found that providing services from birth to age five realized more initial effects in IQ and reading and mathematics achievement (Cicirelli, 1969; Ramey & Ramey, 1998; Schnur, Brooks-Gunn, & Shipman, 1992). Follow-up studies of these large-scale programs were conducted at participant ages ranging from 10 to 21 years and revealed both support and rejection of the claims that preschool program participants sustained long-term academic, social, and economic benefits into the adulthood (Campbell & Ramey, 1995; Cunha & Heckman, 2009; Currie, 2001; Heckman & Masterov, 2007; Reynolds, Temple, Ou, Artega, & White, 2011).

Research Questions

The purpose of this study was to compare the performance of high school seniors who participated in preschool with seniors who did not attend preschool. Specifically, the researcher was interested in these seniors’ language arts and mathematics assessments on third grade MCT and high school SATP, retention history, and ACT scores. Additionally, the study sought to determine whether there were differences in MCT and SATP scores for those seniors who attended preschool and those who did not, based on gender and socioeconomic status. Finally, the study examined the beliefs of parents
regarding the impact of preschool on their children’s preparation for kindergarten and their overall academic success.

The specific research questions to be addressed include:

1. Are there differences among high school seniors, based on preschool experience (Head Start, public school pre-kindergarten, private preschool, and no preschool), on the following academic measures:
   a. Third grade Mississippi Curriculum Tests (MCT) in Reading
   b. Third grade Mississippi Curriculum Tests (MCT) in Math
   c. English II Subject Area Testing Program, 2nd Edition (SATP2) test
   d. Algebra I Subject Area Testing Program, 2nd Edition (SATP2) test
   e. ACT composite score

2. Are there differences among these academic performance measures based on student’s retention history, socioeconomic status, gender, or the particular type of preschool program that a student attended?

3. Among those seniors who attended preschool, are there differences in parents’ reports of their beliefs about the impact of preschool across the three preschool program types on the following attributes of their children?
   a. Reading readiness
   b. Math readiness

4. Are parents’ reports of their beliefs of the impact of preschool on reading and math achievement related to the subsequent MCT Reading/Math and English II/Algebra I SATP scores of their children?
5. What are the reports of parents regarding their beliefs about the impact of preschool on the achievement of their children?

6. What are reports of parents regarding the degree to which they were involved in their children’s preschool and K-12 school experience?

Delimitations

Several limitations were imposed in advance of the implementation of this study. These limitations included the following:

1. Participants were limited to the parents of students whose credits make them eligible as seniors in the 2015-2016 school year.

2. For students who had to retake an SATP, the most recent score will be used for data analysis.

3. Parent questionnaires will be limited to parents who agree to participate and return the questionnaires to the counselor who translated the code to each student’s academic and demographic data.

This study was further limited to the specific population and therefore, generalizations should be restricted to populations with similar demographics.

Assumptions

The researcher assumed that all subjects responded openly and honestly to questionnaires, and without concern that their responses would result in retaliatory behavior by the researcher and/or school district. The researcher assumed that school personnel who assisted in data collection would accurately match individual codes assigned to students for the study of the students’ performance data. Finally, the
researcher assumed that parents would accurately assess the impact of preschool on the behavior and academic performance of their children.

Definition of Terms

The following terms were relevant to and used extensively in this study and are defined specifically with respect to this research.

*Disadvantaged*: “individuals or groups who have low status in a particular society for reasons of race, sex, ethnicity, economics, language, geographic location, environment, education, disabilities, etc.”; …“Individuals or groups whose schooling is judged to be qualitatively or quantitatively inferior as compared with what is considered necessary for achievement in a particular society” (ERIC Thesaurus, n.d.)

*Early childhood education (ECE)*: any type of public or private program whose focus is on educating young children in the years prior to entering kindergarten (Bowman, 1993).

*Head Start*: an early education program provided by government agencies to assist children from under the age of five years old in learning and developing skills necessary for success upon public school entrance.

*Mississippi Curriculum Test (MCT)*: a measure of student achievement in Language Arts and Mathematics in grades 3-8 based on the 2006 Mississippi Language Arts Framework - Revised and 2007 Mississippi Mathematics Framework - Revised. In addition, to being the basis for state accountability in these grades, it was designed to meet the federal testing requirements of the No Child Left Behind Act (NCLB), 2001 (Mississippi Department of Education, 2005).
Mississippi Subject Area Testing Program, Second Ed. (SATP2): are assessments administered to students at the end of the course as part of the requirements of the federal No Child Left Behind Act and the Mississippi State Accountability Model. Algebra I is typically taken in 9th grade, but frequently in 8th grade; Biology I is typically taken in 9th grade; English II (Multiple Choice Test and Writing Test) is taken in 10th grade; and U.S. History is typically taken in 11th grade.

Preschool: refers to a type of early childhood education program designed for learning through play for children ages three to five prior to kindergarten (Encyclopedia of Children’s Health, n.d.).

Preschool or prekindergarten children: means any child who has not entered kindergarten but will have obtained four (4) years of age on or before September 1 of a school year (Early Learning Collaborative Act, 2013).

Retention history: the record of the occurrences of a student being held back in the same grade and having to repeat that grade.

Senior Status: any student enrolled in the district of study whose Carnegie units declare them as a “senior.”

Socioeconomic status: “a combination of education, income, and occupation. It is commonly conceptualized as the social standing or class of an individual or group” (American Psychological Association, n.d.).

Status dropout rate: is “the percentage of 16- through 24-year-olds who are not enrolled in school and have not earned a high school credential (either a diploma or an equivalency credential such as a General Educational Development [GED] certificate)” (U.S. Department of Education, 2014b, para. 1).
Justification

The 1965 Head Start program was born out of necessity because the president at the time, Lyndon Johnson, thought that it would assist in that era’s war against poverty. Head Start was the first ever federally funded, large-scale early childhood education intervention program (Duncan & Magnuson, 2013; Gilliam & Zigler, 2000; Kagan & Reid, 2009). Since its inception, the past fifty years have seen many new early childhood education programs come about with the common goal of education youth in preparation for kindergarten. The cognitive, noncognitive, social, behavioral, and financial benefits of Head Start and other preschool programs have been reported; however, some children still lack access to a high-quality program (Ayoub et al., 2009; Heckman, 2008; Weiland & Yoshikawa, 2013). Disparities in quality program design, access, and personnel exist and contribute to increasing achievement gaps (Magnuson & Shager, 2010). These gaps may, in turn, contribute to the increasing dropout rates, thus a decline in high school graduation (Heckman, 2008).

Even though many research findings support the case for increased expenditure on early education, the continued lack of financial support for early childhood programs puts the future of America’s youth in jeopardy. The shortfall affects not only federal programs like Head Start, but public- and privately-funded programs suffer as well. However, the negative effects of limited access to high-quality early education while they are young follow them into adolescence and adulthood (Dianda, 2015). In a review of national longitudinal data, the researcher reported that over ten percent of students entering 9th grade do not graduate in four years. “The decline in high school graduation is of interest in its own right as a measure of the performance of American schools”
(Heckman & LaFontaine, 2008, p. 2). With these projections, questions arise about the employability of the American workforce and subsequently the United States’ ranking in the global economy. According to Schleicher (2011), the United States is losing its competitive edge when compared to other the other 29 countries in the Organization for Economic Cooperation and Develop (OECD). The author cites the reason for the U.S. dropping from 2nd to 14th position in college graduation rate was because more countries were increasing funding for programs from early childhood education through high school.

On a local level, Mississippi pushed out the first law of its kind, the Early Learning Collaborative Act of 2013, regarding early childhood education. This measure would ensure funding for voluntary pre-kindergarten programs and expand access throughout the state (Mississippi First, n.d.). The state’s governor, Phil Bryant, further supports the efforts of promoting preschool in his state by partnering with the Mississippi Head Start Association in its Mississippi Works campaign (Mississippi Works, 2014).

This study was conducted in an area in Mississippi where high rates of socioeconomically disadvantaged students were prevalent. Findings from this study may be helpful in deciding the type of early childhood programs in which to invest future resources; it is further hoped that the findings will aid in the determination of which programs need to be modified. Also, this study may provide school leaders with outcome data based on preschool experiences of their students. This information could possibly serve as an impetus to local district improvement and reform efforts while informing district leaders on the state of their schools.
Summary

Research in the field of early childhood education has been ongoing since the creation of laboratory schools by early theorists. Though the research from early, informal programs may not have produced the magnitude of findings that the more modern programs have produced, those prior programs did influence the principles and foundations of the early childhood programs that would follow. Realizing the importance of educating children from disadvantaged backgrounds and the societal, academic, and behavioral impacts of attending preschool programs has become the driving force in improving the education of the young. These realizations have been key in the efforts that have influenced policy reform and funding in the field of early childhood education. With increased populations and the increased demands for educated and skilled workers, more focus is being placed on high school graduation rates. Research has revealed the possible relationship between preschool attendance and success later in life. Therefore, many federal, state, and local governmental, business, and educational agencies have begun to focus more resources on developing quality preschool experiences for young children. Legislation like No Child Left Behind (2002) and the most recent push for the expansion of preschool funding undergird the belief that access to quality early childhood education improves the quality of life for not only the participants but their families and the society as a whole.

Despite the efforts of the past presidential administrations, funding for early childhood education has experienced shortfalls. However, the present Obama administration continues to make it a national priority to push forward in providing funding to all types of preschool programs so that every child in America can “grow up
more likely to read and do math at grade level, graduate high school, hold a job, and form more stable families of their own” (The White House, 2013, para. 1). Therefore, the findings of this study would be useful in determining the economic, as well as, the educational benefits associated with early learning and preschool opportunities extended to all students and help guide decision-making for school districts regarding investment in early childhood education programs. In addition, schools will have the potential to impact the lives of children from disadvantaged backgrounds in positive, meaningful ways, thereby, closing the achievement gaps that exist among those who attend preschool and those who do not.

Chapter II includes the review of literature related to the policy influences on early childhood education. In addition, research describing the impact that preschool school programs have had on the academic performance of its participants is presented. Influences of gender and socioeconomics on preschool attendance will also be included in the literature review. Chapter III will describe the method that was utilized to conduct the study, including identifying the participants, the procedures for selecting participants and collecting data, and the statistical tests used in the analysis of data.
CHAPTER II
REVIEW OF LITERATURE

High school graduation rates and dropout rates in the United States have improved in recent years (Kena et al., 2015; Stark & Noel, 2015). However, the rates of attrition among students are still too high and differences can be seen among gender, race, and socioeconomic status (Stark & Noel, 2015; U.S. Department of Education, 2014a). While the dropout rate has decreased in Mississippi by 0.8 percent in recent years, researchers find that those who do graduate sometimes have social, educational, and behavioral difficulties that can often be traced back to early years; these difficulties can subsequently prevent them from getting a job or gaining college admission (Heckman, 2006; Sheehan, Cryan, Weichel, & Bandy, 1991; Reynolds et al., 2001). High incidences of dropouts and decreased graduation rates tend to have an adverse social and economic effect on communities. In an effort to improve a community’s chance of bringing up a society of young people who possess employable skills, Heckman contends that investing in children while they are young will be a worthwhile effort (Heckman, 2011; Heckman & Masterov, 2007).

Although learning can occur at any age, starting a child off with a solid foundation rooted in knowledge and skills necessary for future school success is advantageous. Davis and Gardener (1993) found that laying a strong foundation in the early years makes learning in the future possible. Takanishi and Kauerz (2008) add that the years between preschool and third grade form the “cornerstone of any P-16 system. They provide a strong foundation for children’s lifelong learning, educational excellence,
and eventual competitiveness in the marketplace” (p. 480). A child lacking a solid foundation will begin his/her educational career at a disadvantage.

Studies have revealed that achievement gaps between children in the bottom and top quartiles exist when children enter kindergarten (Aos, Lieb, Mayfield, Miller, & Pennucci, 2004; U.S. Department of Education, 2014). Thomas and Currie (2002) found that as students with early cognitive deficiencies progressed through school, many of them continued to experience difficulties, causing the gaps to widen even further, resulting in many of them eventually dropping out of school (Thomas & Currie, 2002). In order to close or minimize this gap, early intervention in a child’s life is necessary. Out of this necessity, programs like Head Start and other preschool programs were developed to address the needs of America’s children, their families, and the communities in which they live. Maria Montessori spoke of early childhood education as a key component in the betterment of society (McKinney, 2013). If designed properly, early childhood education can provide quality programs that will ensure that children from disadvantaged backgrounds enter school ready for kindergarten (Burger, 2013; High and the Committee on Early Childhood, Adoption, and Dependent Care and Council on School Health, 2008).

The purpose of this study is to determine whether differences exist in performance on high-stakes accountability tests in third grade and high school among seniors who attended preschool and those who did not attend preschool. The study will further analyze the difference among groups based on retention rates and ACT scores with regard to gender and socioeconomic status. Finally, this study will examine the beliefs of parents
of preschool attendees regarding the impact of preschool on their children’s formal school success.

The review of literature focused on the foundational theories of educational behaviorists and psychologists and the history of early childhood education and preschool. Studies concerning the importance of early investment in human capital and the impact of early childhood education on a child’s academic and social well-being were reviewed. The economic advantages of attending preschool are examined. High school dropout rates and funding of preschools across the nation are discussed; these elements of the literature review include statistics specific to Mississippi.

Theoretical Framework

Effective practices in early childhood education continue to be debated among researchers. Many contemporary educational innovators continue to refine original thoughts and ideas developed by Luther, Comenius, Montaigne, Rousseau, Froebel, Pestalozzi, Montessori, Dewey, and others concerning the education of young children (Follari, 2015; Wood & Bennett, 2000). In addition, multidisciplinary contributions have been noted in the areas of medicine, psychology, anthropology, sociology, and any other fields that directly or indirectly affected the behavioral, social, and educational attributes of young children. This multidisciplinary focus over past decades has provided the theoretical basis for many of contemporary studies; however, New (2005) points out that no theory specific to early childhood education exists. In this study, the following educational theories will be presented: Bruner’s constructivist theory, Vygotsky’s zone of proximal development, and Piaget’s cognitive development theories will be discussed.
Bruner (1966, 1996) and Vygotsky (1962, 1978) are considered social constructivist theorists. Predominant in contemporary understandings of Common Core Standards and personalized learning, the constructivist theory requires that the teacher takes a less active role in instructing and become more of a facilitator of learning, thus allowing the student to be the center of focus. Bruner believed that this type of discovery learning would occur when answers to questions were withheld by the teacher and students were required to find solutions on their own (Alfieri, Brooks, Aldrich, & Tenenbaum, 2011).

Bruner (1966) proposed three modes of representation in cognitive development which describes how knowledge and information are stored and committed to memory: enactive, iconic, and symbolic. The first mode, enactive representation (0 – 1 year), involves action-based memory storage in which past knowledge translates into motor responses. This stage is useful for acting out the knowledge when pictures and words are too difficult (McLeod, 2012). Iconic representation is the second stage of memory development (1 - 6 years), where information is stored as mental images. According to McLeod (2012), this stage of memory may explain why having a diagram or illustration is helpful when new ideas are being presented. The final symbolic (7 years and up) stage is the last to develop and the information is encoded as symbols, or words used in language. According to Bruner (1966), to be successful with new material, children should follow the cognitive progression from enactive to symbolic which reflects organized instruction.

Bruner’s approach to learning in early education programs would require some scaffolding; however, in older learners, teachers would act as a source of reference for
students. In either setting, the child would take part in discovery learning, which is an inquiry-based type of instruction that undergirds early childhood education programs and public K-12 Common Core curriculum.

Vygotsky (1978) is probably most known for his Social Development Theory. This theory of cognitive development proposes that children are affected by their knowledge of the social community that surrounds them and that their use of language is the most effective tool the enables them to gain social knowledge (Elgas, Lynch, Heironymus, & Moomaw, 1998). For children who have poorly developed language or for those who have language impairments, their interactions may be hindered. This is why it is important for early childhood education programs to provide thorough screenings and evaluations to each child to determine any potential for problems. As part of the accountability protocol in public schools, universal screeners are typically conducted at least three times per year. In preschool programs, as well as older classrooms, the screeners can alert educators and parents of deficiencies early in a child’s career (Follari, 2015).

Vygotsky rejected the claims that children’s development was not influenced by education and occurs spontaneously (Elgas et al., 1998). Instead, he proposed the zone of proximal development (ZPD) which describes the gap in what the child is capable of doing independently and what the child could potentially do with help from others (Eddy, 2010; Vygotsky, 1978). Vygotsky contended that children can learn within the ZPD with help and support from the adult facilitator through a process known as scaffolding (Elgas et al., 1998). Scaffolding entails teachers asking questions and providing prompts in ways that require the child to think about what is being said and decide what will work
and what will not. This type of interaction requires decision-making skills leading to
discovery through the use of language. The kind of scaffolding and assistance children
need to develop new skill sets within their ZPD will look different for different age
groups and abilities.

Cognitive constructivist theories are based on individuals understanding of their
own knowledge and style of learning, and Jean Piaget’s theory of cognitive development
has been a major influence on early childhood education (Elgas et al., 1998). During the
20th century, Piaget’s work was considered by many to be among the most significant of
influences on child development research from 1950 to 1970 (Bowman 1993). His
theories asserted that children learn by constructing their own knowledge through trial
and error within their environments. He believed that children are active learners whose
experiences should be hands-on and concrete. In response, teachers can formatively
assess their performances and provide guidance and support. His theory is based on four
stages which children go through as they develop over time (Piaget, 1970). The
sensorimotor stage (birth to age 2) is the first stage of development, and the child
attempts to make sense of the world around them by interacting with senses and motor
abilities. In the second stage, preoperational stage (ages 2-7), symbolic relationships are
established. Children in this stage are at preschool age, and his or her understanding of
objects is dependent on what they look like. Stage three is the concrete operational stage
(ages 7-11) and as its name implies, children in this stage need to have tangible
representations of concepts. Children are now beginning to conceptualize constructs of
logic. As a child progresses to stage four, the formal operational stage (ages 11 and up),
he or she is less dependent on concrete, physical objects and are able to use logic to infer.
The theoretical frameworks discussed in this study have significant educational implications. In discussing the theories, the roles of the children and the adults are specified. Adults can play an active role in engaging children in the curriculum to help them reach their full potential. Learning through stages occurs from birth through adulthood and some children progress more quickly than others through the stages which will translate into faster rates of learning. These theories also provide an understanding of how children learn to problem solve through making choices and discovery which will help them become self-motivated learners. These attributes will serve them well during their entire school careers. According to Piaget’s theory (1970), teachers can act as facilitators who develop cognitively appropriate activities and can properly guide their understanding. Therefore, children’s early learning experiences can have a significant impact on their later educational and life experiences. Prior theorists were discussed along with their contributions relative to the theoretical bases of early childhood education.

History of Early Childhood Education

In order to evaluate the impact of preschool programs on the academic performance of students, it is important to provide a brief history of early childhood education. The discussion that follows describes the evolution of what is known as modern day pre-kindergarten or preschool program. Understanding the history of early childhood education is necessary in order to comprehend the current programs and practices, as well as plan for future programs.

As far back as the fifteenth century, the idea of educating young children was made a priority when Martin Luther (1483-1546) publicly protested discrimination based
on socioeconomic class (Auleta, 1969). Instead of agreeing with societal practices that limited education for the underprivileged, Luther was among the first to raise the issue that every child possessed the right to be educated and, thus, the idea of compulsory education was born (Auleta, 1969; Giardiello, 2013; Hewes, 2005). He believed the school's role was to develop the intellectual, religious, physical, emotional, and social attributes of children. Later, these views helped establish a wide network of schools for young children in Germany. However, it wasn't until 19th century America that his ideas about universal education became reality (Giardiello, 2013).

A century later, another educational theorist, John Amos Comenius (1592-1670) reinforced Luther’s theories. He too believed in the importance of educating young children and hoped that such education would help society. Comenius also believed that “the acquisition of knowledge cannot be forced, nevertheless, a skillful master can make a child eager to savor knowledge” (Auleta, 1969). Not just a theorist, Comenius produced some of the earliest teaching materials targeted towards young children that deeply influenced education for several centuries. Comenius, like Luther, believed that all children up to age 6 should be taught in their native languages, that all people were equal before God, and that all individuals, rich, poor, male, or female, should be entitled to the same education (Lascarides & Hinitz, 2000). He was the first to introduce the concept of "grades," or different levels of education determined by each individual child's age and developmental stage. Comenius and others' beliefs led to a basic schooling system, where reading, writing, and arithmetic education was provided to very young children from age 5-11, before they began their vocational training (Auleta, 1969).
The misfortune that so many underprivileged children experience in life and school has been the center of focus for hundreds of years. Dating as far back as the 1700s, social status highly influenced who received education and the quality of that education; however, Luther and Comenius were the first to propose education for all, no matter their societal standings (Lambert, 1960). Comenius, like many modern theorists and researchers, believed that improving education would improve society. Though his teachings were novel ideas during his time, today his principles are accepted as common knowledge. Johann Heinrich Pestalozzi (1746-1827) closely followed Luther and Comenius’s works and he believed that education should develop the mental, physical, and moral child in natural, successive steps (Lambert, 1960; Deutsch & Deutsch, 1968). His principles would be practiced in schools designed to promote his theories and propagate his teachings worldwide (Palmer, Bresler, & Cooper, 2001).

Robert Owen (1771-1858) appears to have been the first to introduce an infant school in England (Auleta, 1966; Donnachie, 2003). Working on the belief that all children were inherently good and that providing them with a variety of instructional activities from infancy would help them to rise up out of their poverty, Owen established one of the first schools for three-year-olds in 1816. He spent some time studying under Pestalozzi and was firmly convinced that education, to be effective, had to begin when the child was very young (Altfest, 1977).

A few years later Friedrich Wilhelm Froebel (1782-1852), also a disciple of Pestalozzi, established one of the first kindergartens in Germany. He opened a school for young children in 1816, but the school suffered financial decline and closed. However, Froebel continued with his work and in 1837 opened a school for young children with a
lengthy name which was later changed to Kindergarten, meaning a children’s garden (Lambert, 1960). His new school emphasized play, games, and songs and included the original circle time (Auleta, 1966; Donnachie, 2003).

Froebel later established the first ever kindergarten teacher training program for young women in Germany; however, the program would be short-lived having come about during a time when laws were passed that ordered that all kindergartens be closed (Dewey, 1997). As a result, many of his followers relocated to the United States and established kindergartens here. In 1855, Margarethe Schurz began the first German-speaking kindergarten for children in America and years later, in 1860, Elizabeth Peabody established the first English-speaking kindergarten in Boston (Jenkins, 1930; Lambert 1960; Snyder, 1972). William T. Harris, Superintendent of the St. Louis public school system, began the first publicly supported kindergarten in America (Osborn, 1991).

In discussing early childhood education during the late 1800s through the mid-1900s, it is useful to include the perspectives of John Dewey, who has been referred to by Auleta (1966) as an “outstanding educational theorist of modern times” (p. 21). Dewey tied together the theories of Comenius, Rousseau, Pestalozzi, and Froebel to represent progressive theories of education. Referred to as the Father of Pragmatism, Dewey founded the Laboratory School at the University of Chicago (Pioneers in Our Field, 2000). He believed that education should be child-centered with a focus on active and interactive activities that involve the social attributes of children and their communities. His idea that children learn better while working alone and in cooperation with their peers and adults has been reiterated cooperative learning in the in contemporary classrooms.
Dewey believed that there had to be some point of convergence in Montessori’s and Froebel’s works, so his students were engaged in play that was grounded in real-world formal instruction (Cooper, Allen, Patall, & Dent, 2010). These ideas are described in Dewey’s words, as cited in Pioneers of Our Field (2000):

> When we look at early childhood classrooms today, we see children building language skills as they share snacks with classmates, learning important science concepts as they water and care for plants and developing math skills as they cook up a special treat for lunch. All the commonplace preschool activities stem from the ideas of a forward-thinking and most uncommon man (para. 5).

Maria Montessori made significant contributions to the field of early education with her successful work in pediatric psychiatry. She undertook her studies using the principle, “First the education of the senses, then the education of the intellect” (as cited in Giardiello, 2013, p. 89; “Maria Montessori,” 2000, para. 2). Her research was conducted in a setting which allowed her to observe mentally retarded children that educators and physicians had concluded could not be successively educated. Contrary to their beliefs, Montessori found that the problems of learning impaired children could be linked back to education and not their mental disease (Auleta, 1969; Bauer, Johnson, Ulrich, Denno, & Carr, 1998; Osborn, 1991). Montessori saw such dramatic improvements in her mentally disabled subjects that she conducted subsequent studies using her methods on nondisabled children with success (Burnett, 1962). In an attempt to develop activities that would allow children practice without adult interaction, Montessori created educational materials and equipment that were self-correcting and easily used independently. She also developed teaching methods that offered children
freedom of choice and encouraged independence in instructional activities which resulted in success in teaching students how to read and write (Bauer et al., 1998; Burnett, 1962). Despite beginning her groundbreaking work with socially, economically, and academically at-risk children during the late 1800s, today her views and methods form the basis of early childhood education programs worldwide (Follari, 2015; Giardiello, 2013).

The past centuries have witnessed changes to early childhood education programs and pedagogy that can be linked back to the beliefs of early researchers and theorists. The idea of education for all children despite their social status or educability promoted by Comenius, Montessori, and Pestalozzi remains at the forefront of early childhood programming. Their principles and teachings have influenced modern preschool programs and can be observed around the world.

As early as the nineteenth century, Comenius recognized that improving the education of children would improve the society in which they lived. His work promoted educating children from all social classes in an effort to fight the detrimental effects of poverty. Decades later, Head Start, the first national preschool effort in the United States was created to address issues of disadvantaged children living in poverty so as to provide them with an early education program that would put them on a level equal to their peers from non-disadvantaged backgrounds (Barnett, 2005).

Montessori’s constructivist views on student-led classrooms through play would lend to the idea universal education for children from all backgrounds (Coe, 1991). Her contributions to the field of early childhood education were many; however, there are three impressions on education that are readily visible in programs today. The first is her
view of the teacher as that of a tutor, guide or facilitator and not one who provides answers but who carefully observes and allows learning to stem from the child’s own action. This is the kind of innovative thinking that is required from present-day Common Core State Standards. The second impression made by Montessori was the light that she shed on the teaching and learning of children with developmental and cognitive disabilities. Even though discussions about at-risk students and those with disabilities did not advance substantively until the 1960s, Montessori recognized the value of focusing on children with special needs during the eighteenth century. Creating and developing assisted learning devices and activities that children could use without adult intervention were the third of the major impressions she made on nineteenth-century education. Montessori’s independent learning aids have proved very resourceful in independent learning centers in early childhood classrooms.

Contemporary Policy and Practice Context

Since the creation of the Head Start program in 1964, early childhood education has undergone significant changes. During the early twentieth century, government interest and influence on early education policy was very limited; however, today government influence plays a major role in influencing policies that affect improving services to young children (Alakeson, 2004; Wood, 2007; Yelland, 2010). More specifically, national policies like Goals 2000 and the No Child Left Behind Act of 2001 (No Child Left Behind) have evolved into a system that aims to improve quality of early education and care, promote social inclusion, provide early intervention, and improve the lives of children and their families (Alakeson, 2004; Kagan & Kauerz, 2012). In addition, the more recently proposed Preschool for All program would extend access to
high-quality, publicly-funded preschool to all children (U. S. Department of Education, n.d.b). Also, influences from the global view of the U.S. have made profound impacts on the early education of America’s youth. Fundamental changes in the workforce, including, more mothers working outside the home and the requirement of more advanced skills in the labor market have forced the country’s leaders to reconsider how early interventions should take place in a child’s life (Follari, 2015). Heckman concludes that investing in children while they are very young will help schools attain the high rates of return on investment (Heckman, 2000). Programs promising a high return on investments do not promise to remediate or eliminate the gaps in school performance in relation to education, health, and socioeconomics (Heckman, 2000; Kagan & Kauerz, 2012).

The connections between programs for children of preschool age and children of kindergarten or primary grade age have come largely from the education reform movement of the late 20th century. Early in the twentieth century, the nursery school movement emerged in order to meet the needs of children and their families (Bauer et al., 1998). With more mothers entering the workforce, family members were stepping in to care for the children of relatives. The nursery school curriculum focused on children’s health, motor skills, and fostering imagination through outdoor work and play (Schweinhart & Weikart, 1998). Along with the Great Depression and World War II came significant changes to early childhood education. With the war taking the men from home and families being separated by distance due to having to travel to find employment, the declining role of the nursery school became apparent (Lannak, 1995).

In 1935, President Roosevelt’s Works Progress Administration was a work relief program
that offered funding for the purpose of opening nursery schools (Public Broadcast System, 2009). That program ended eight years later and a few years after that, the federal government began granting funds for starting up full. In 1964, Congress passed the Economic Opportunity Act which provided a segway for the nation’s first federally-funded early childhood education program known as Head Start. The authorization of Head Start would provide assistance to millions of children facing poverty.

When Head Start began in 1965, it was developed to provide comprehensive programming to poor children and their families through the provision of education, health, nutritional, social and other services. According to the Administration for Children and Families, Head Start is “a national program that promotes school readiness of young children from low-income families. Head Start and Early Head Start programs support the mental, social, and emotional development of children from birth to age 5” (U.S. Department of Health and Human Services, Administration for Children and Families, 2015a, p. 1). President Johnson’s fight against poverty chose classrooms as the setting where the most benefit from education could be realized by the country’s most vulnerable citizens—children (Leinhardt & Bickel, 1987). The objectives of Head Start set forth by the Cooke Advisory Panel in 1965 were:

1. To improve the child's physical health and physical abilities;
2. To help the emotional and social development of the child by encouraging self-confidence, spontaneity, curiosity, and self-discipline;
3. To improve the child's mental processes and skills with particular attention to conceptual and verbal skills;
4. To establish patterns and expectations of success for the child which create a climate of confidence for his or her future learning efforts;

5. To increase the child's capacity to relate positively to family members and others while at the same time strengthening the family's ability to relate positively to the child and his or her problems;

6. To develop in the child and his or her family a responsible attitude toward society, and to foster constructive opportunities for society to work together with the poor in solving their problems; and

7. To increase the sense of dignity and self-worth within the child and his or her family. (Miller, 1987, pp. 329-330)

Since its creation in 1965, Head Start has undergone policy changes due legislative mandates. In 1972 Economic Opportunity Act would mandate Head Start to expand its services to include opportunities for children with disabilities which would require that at least 10 percent of the enrollment at Head Start centers be set aside for children with disabilities (U.S. Department of Health and Human Services, Administration for Children and Families, 2015b). As a result of this legislation, Schwartz and Brand (2001) reported that children with disabilities made up 13.2% of Head Start enrollment. The following year, in 1973, home-based programs were added to the list of services provided by Head Start. Then in 1977, after curriculum development efforts aimed at reducing language barriers for Spanish-speaking children, the Carter administration required that Head Start programs offer bilingual and bicultural programs (Martinez, 1982).
The changing of White House administration in the late 1980s and 1990s continued to alter the focus and policies of Head Start. During this time, early childhood education witnessed an increase in funding that was followed by continued expansion of services. Congress had authorized Head Start to be fully funded in 1966; however, it was not until 1981 that the passage of the Education Consolidation and Improvement Act (ECIA) allowed Congress to appropriate funding for its programs (Leinhardt & Bickel, 1987). Following this, the Reagan administration increased Head Start’s budget to over $1 billion in 1984.

The 1990s witnessed a shift in power concerning early childhood education program funding. Head Start had previously held control over early childhood services since its creation in 1965; however, new federal mandates began to shift funds into early care programs for “disadvantaged children attending daycare centers and family day care homes” (Gormley, Phillips, Adelstein, & Shaw, 2010, p. 397). The end of the twentieth century saw expanded services not only in Head Start programs but in public and private sectors, as well. The Clinton administration provided Early Head Start grants in 1995 and in 1998, Head Start was reauthorized for full-day, full-year programs (U.S. Department of Health and Human Services, Administration for Children and Families, 2015a).

Even with Project Head Start in place, concerns remained during the 1970s about American schools failing to educate vast numbers of children and the during the 1980s, some believed if downward educational trends continued, the United States would experience unacceptably high rates of unemployment and underemployment, increasingly low standards and productivity of workers, further decline in international economic competitiveness, and potential major social upheaval as the population would become
increasingly poor, minority, and undereducated (Committee for Economic Development, 1987; Heckman, 2000). In 1983, the release of the report entitled, *A Nation at Risk* during the outgoing Reagan administration prompted a change in national education focus (Rudalevige, 2003). In order to improve the nation’s standing in the global market, policymakers and business leaders believed that more should be done to prepare the nation’s youth (Delong, Katz, & Goldin, 2003; Heckman & Masterov, 2007). In response to this crisis revealed by *A Nation at Risk Report*, several legislative measures were created. Specifically, Goals 2000: Educate America Act and No Child Left Behind Act (NCLB) 2001 called upon schools across the nation to task to ensure that all students were performing at or above proficiency on grade appropriate material (U.S. Department of Education, 2002).

Enacted in 1994, the Educate America Act mandated the following six goals: 1) school readiness, 2) school completion, 3) student achievement and citizenship, 4) teacher education and professional development, 5) mathematics and science achievement, and 6) adult literacy and lifelong learning (Goals 2000, 1994). The National School Readiness Task Force found that school readiness does not rest solely on the children, but is largely dependent on and developed by the people in the child’s life and the environments in which they live (National Governor’s Association, 1995). Specifically, Goal 1 ensured that all children would provide access to a high-quality preschool that offers a developmentally appropriate program so that they are sufficiently prepared to enter kindergarten. The following objectives for Goal 1 were set forth in the Goals 2000: Educate America Act (1994):
1. all children will have access to high-quality and developmentally appropriate preschool programs that help prepare children for school;

2. every parent in the United States will be a child’s first teacher and devote time each day to helping such parent’s preschool child learn, and parents will have access to the training and support parents need; and

3. children will receive the nutrition, physical activity experiences, and health care needed to arrive at school with healthy minds and bodies, and to maintain the mental alertness necessary to be prepared to learn, and the number of low-birthweight babies will be significantly reduced through enhanced prenatal health systems. (Title I, Section 102, 1B, pp. 6-7)

At the turn of the 21st Century, education, in general, was continuing to realize changes on state and federal levels. More specifically, changes in early childhood education were more reflective of standardizing state curricula, expanding services to disadvantaged and at-risk populations, and increased funding to state and private preschool programs than ever before (Wood, 2007; Yelland, 2010). The No Child Left Behind Act of 2001 was signed into law by President George W. Bush on January 8, 2002. This Act was a reauthorization of the Elementary and Secondary Education Act of 1965, out of which Head Start was born. Secretary of Education, Rod Paige, described the mandate as “historic reform [that] gives states and school districts unprecedented flexibility in how they spend their education dollars, in return for setting standards for student achievement and holding students as educators accountable for results” (U.S. Department of Education, Office of Under Secretary, 2002, p. 3). The NCLB extended the federal government’s reach through the provision of services and put new measures
of accountability into place in hopes that of producing increased achievement on the
student level and increased accountability on the school and state levels (Editorial
Projects in Education Research Center, 2011). Specific measures in the No Child Left
Behind Act that address preschool children were Title I, Part B, Subpart 2, Early
Reading First and Title I, Part B, Subpart 3, Even Start Family Literacy Program. The
Early Reading First Program would provide early education programs that encompassed
all the developmental domains (social, emotional, cognitive, linguistic, and physical) of
eyearl childhood in preparing young children for kindergarten (No Child Left Behind,
2002). The Even Start Family Literacy Program was an outgrowth over concern about
the millions of families living in poverty and its aim was to “break the cycle of poverty
and illiteracy for low-income families” (No Child Left Behind, 2002, p. 31).

The 2007 reauthorization of Head Start under the George W. Bush administration,
the Improving Head Start for School Readiness Act (2007) had the intended purpose of
strengthening the quality of Head Start programs through aligning of school readiness
goals with state early learning standards, requiring higher qualifications for Head Start
teachers, increasing monitoring of programs, redesigning the training and technical
assistance system that support Head Start programs and restricting program grant periods
to every five years (U.S. Department of Health and Human Services, Administration for
Children and Families, 2015a). In addition, Head Start began to include services for
homeless children and their families in 2007. There was a provision in the reauthorization
that allowed monies provided to Head Start centers that did not demonstrate high quality
through evaluations to be re-appropriated to local community agencies (U. S. Department
of Health and Human Services, 2015b). As a part of the requirement of the Act,
governors must create state advisory councils that “include representatives from health, education, child care, Head Start, and early intervention (IDEA, Part C) programs or agencies” (p. 91) and focus on providing services that address all needs of young children (Kagan & Kauerz, 2012).

Throughout history, presidents have altered and reauthorized some aspect of the mandates of their predecessors and President Obama has not been an exception. In 2009, he signed the American Reinvestment and Recovery Act into law, which provided over 60,000 additional Early Head Start and Head Start units (U. S. Department of Health and Human Services, 2015b). Four years later, in a State of the Union address (The White House, 2013) President Obama called on Congress to expand access to high-quality preschool to every American child with the following plea:

In states that make it a priority to educate our youngest children…studies show students grow up more likely to read and do math at grade level, graduate high school, hold a job, form more stable families of their own. We know this works. So let’s do what works and make sure none of our children start the race of life already behind. (para. 1)

The President’s Preschool for All proposed initiative would provide federal dollars to public preschools in all 50 states to serve low- to moderate-incomes of families who are at or below 200% poverty levels with the extra incentive to offer services to above income guidelines (The White House, 2013). President Obama’s plan would expand on current programs run by the state, thus continuing to add to the changes seen over the past three decades (Cascio & Schanzenbach, 2013). Also, under this proposal, to ensure that children are receiving high-quality education, preschool programs would have
to meet the following quality indicators: (1) state-level standards for early learning, (2) employ qualified teachers for all preschool classrooms, and (3) plan for implementation of comprehensive data and assessment systems (The White House). In addition, Head Start would be allotted funds to expand their menu of services while state preschools would receive funding to offer more slots to 4-year olds.

In the years since the Head Start Act was signed into law, the challenge of providing high-quality preschool for all still exists. Since 1965, many agencies on federal, state, and local levels have recognized the critical importance and benefits of children attending preschool and most have made the task of providing state funding for early childhood education a priority. In 2013, Mississippi’s governor, Phil Bryant, committed to funding of preschool through the signing of the Early Learning Collaborative Act. However, for some states, no provisions have been made for government funding of preschool.

Pertinent Research and Professional Perspectives

Given the focus of this study, it is important to examine the perspectives and findings of others regarding these research issues. This section begins with a review of preschool program types and will follow-up with a review of impact studies on model preschool programs and their findings in regards to short-term and long-term benefits of preschool attendance. Next, the academic impacts of participation in early childhood education as related to retention and gender will be examined. Research examining the parents perspectives regarding the impact of early childhood will also be presented. The last section analyzes what past research has revealed regarding the economic impact of attending preschool. More specifically, the cost benefit analyses associated with early
childhood education programs will be examined, as well as the economics of high school graduation and dropout rates. The researcher will conclude the review of literature with findings and conclusions about the impact of early childhood education on socioeconomic status.

Impact of Preschool Program Type on Student Achievement

Participating in early childhood programs can produce academic and social benefits well beyond kindergarten. However, these programs can vary in aspects of programming and quality. For the purposes of this study, program quality and the following three types of early childhood education or preschool programs will be discussed: Head Start, public preschool or pre-k, and private preschool.

Dating back to Pestalozzi and Owens, early education focused on children from impoverished, disadvantaged backgrounds (Follari, 2015). Researchers have concluded that children from disadvantaged backgrounds benefit the most from participating in high-quality preschool (Huang, Invernizzi, & Drake, 2012; Magnuson & Shager, 2010). Determining the quality of early education programs has produced mixed reviews. Some researchers and government agencies utilize rating scales and assessment systems to determine the quality of early education settings (Yazejian, 2012). Early Childhood Rating Scale (ECERS-R) and the Classroom Assessment Scoring System (CLASS) are examples of two instruments used in determining the quality of programs like the Educare Learning Network, a nationwide network of early childhood education schools and Head Start (Harms, Clifford, & Cryer, 2005). Yazejian (2012) reported that when average scores on the ECES-R were compared, Educare classrooms had an average score of 5 while studies of other national preschool classroom quality ranged from 3.5 to 4.8.
Legislative mandates require that impact studies of the federally-funded Head Start Program be conducted on a national level. A study conducted to examine school readiness at kindergarten entry for children who attended Head Start compared to those who participated in other types of child care programs found that children who attended Head Start scored higher on early reading and math than children in other preschool settings (Lee, Zhai, Brooks-Gunn, Han, & Waldfogel, 2014). In the same study, researchers found that children who attended Head Start scored lower in early reading when compared to children in public school pre-kindergarten and found no differences in any measures compared to children in other center-based programs.

Gormley et al. (2010), conducted a study to determine the comparative advantages of attending one of the largest universal pre-k programs, Tulsa, Oklahoma’s federally funded Head Start, and the state-funded pre-k program. Researchers noted that in the Tulsa study, the state officials characterized both their Head Start and state-funded pre-k as being high quality. In a reanalysis of the data set of disadvantaged preschool children, Gormley and his team (2010) found stronger pre-reading and pre-writing scores among state-funded pre-k program participants compared to Head Start participants. The study found that both pre-k and Head Start programs were equally effective with no statistically significant differences among the groups.

Considering the quality of the preschool program is important when seeking to determine the overall effectiveness of that program. Definitions of “quality” of preschool settings and programs vary among researchers and are problematic when considering program effects. The difficulty in defining the quality of early childhood settings stems from the complexity of the system of early childhood education itself (Cryer, 1999).
According to Mashburn et al. (2008), when considering the quality of early childhood education programs, one must take into account the complete view of the experiences the child encounters in the preschool classroom and school setting that are thought to influence their development. In addition, funding plays a huge role in quality and number of preschool programs and they vary by state (Workman, Griffith, & Atchison, 2014).

Studies have found that early education programs employing high quality learning activities and opportunities may alter the projected learning path and success of at-risk children by promoting more benefits in cognitive, social, and emotional outcomes (Cresnoe, Leventhal, Wirth, Peirce, & Pinta, 2010; Elder & Shanahan, 2006). The benefits of high quality programs are dependent on the preschool settings being compared and the experiences and characteristics of the children in the study (Bronfenbrenner & Morris, 1998). Program quality becomes a critical concern when lower quality child care environments become the alternative to high quality preschool programs (Currie, 2001).

A number of studies have examined the connections between quality preschool programs and cognitive outcomes. Peck and Bell (2014) assert that research prior to their study suggested that having more resources and positive interactions in preschool settings (higher quality) would be predictive of improved social and cognitive measures. However, their findings provided little evidence that these measures of program quality have an impact. They concluded that despite the quality of Head Start, low or high, there was no indication of the program’s effect having lasting impacts on into third grade (Peck & Bell, 2014). In another study by Hill, Brooks-Gunn, and Waldfogel (2003), researchers
found that IQ scores of 8 year-olds who attended 400 out of 500 days of high-quality early care performed higher on IQ tests than those children with less frequent attendance.

Upon examining the literature, the researcher found only one study that examined the regional comparisons of different types of preschool programs. Recently, different types of early childhood and care programs were analyzed based on where they were located in the U.S. Zhai, Waldfogel, and Brooks-Gunn (2013) found that when compared to other regions, the Southern region had higher enrollment rates in public preschool (pre-k) than in Head Start. Pre-K programs in the South were determined to be of higher quality due to higher percentages teachers holding 4-year degrees or higher (Barnett, Lamy, & Jung, 2005). These researchers also conducted a secondary analysis of data using the national data sample from the Fragile Families and Child Well-Being Study (FFCWS) to determine the effects of regional Head Start and pre-k programs on academic measures. The study found that children who attended preschool in the South the year before entering kindergarten compared to children across regions who attended Head Start had higher cognitive scores than their peers who did not attend preschool or Head Start. They further concluded when comparing the South to other regions, Southern Head Start programs had larger effects on early reading scores when compared to other center-based programs; Southern pre-k programs had larger effects than any other child care program on reading scores (Zhai et al., 2013).

Additional studies comparing preschool program and Head Start showed differences when analyzing academic achievement. For example, Joo (2010) reported that children who participated in Head Start had lower average scores on the Woodcock-Johnson-Revised Test of Achievement than those in other early childhood education
programs. Another study conducted by Lee and colleagues (2014) examined data from children born in 2001 in the Early Childhood Longitudinal Study-Birth Cohort to compare the school readiness at kindergarten entry of Head Start attendees and children who attended other types of preschool. The study compared those who attended Head Start with those attending four specific types of early childhood care: pre-k, other types of center-based care, other non-parental care, and parental care and revealed that those children attending Head Start scored lower on early reading measures than those who attended pre-k but scored comparably on all measures when compared to other center-based programs (Lee et al., 2014). In the same study, researchers found opposite effects when they compared those who attended Head Start (higher early reading and math scores) with children participating in other non-parental care.

Using data from the ECLS-K, Fram, Kim, and Sinha (2012) reported differences among groups of children based on the type of early education program they participated in. Researchers found that children who attended center-based preschool programs performed better on reading and math assessments when compared to those who received parent-only care. Additional findings by Fram et al. (2012) suggest that the earlier the child began participating in center-based preschool programs, hence the greater influence on performance (i.e., the effect size increased in reading and math). Loeb and colleagues analyzed the same data set and conducted direct assessments on the subjects in the fall of their kindergarten year. Results showed that children who attended a center-based preschool program prior to kindergarten demonstrated 1.1 point increase in reading skills over those who did not; and attending preschool increased math performance by 1.2 points (Loeb et al., 2007).
The studies reported in this section revealed greater gains in academic measures among those who attended pre-k than those who did not, although one study found that there were no differences in academic outcomes (Zhai et al., 2011). The researchers in this study used the data set from the Fragile Families and Child Wellbeing Study (FFCWS), a large cohort of low-income children in urban areas and compared children on two variables: Head Start participants versus all participants and Head Start participants versus children who attended specific early childhood programs. After analysis of the data, scores of children who participated in Head Start and those who did not participate in Head Start were nearly equal (Zhai et al., 2011).

When considering types of preschools, researchers tended to find that public school pre-kindergarten programming was more academically focused than Head Start of the 1960s (Bellm, Burton, Whitebook, Broatch, & Young, 2002; Magnuson & Shager, 2010). Today, however, Head Start, as well as other preschool options have expanded their academic offerings. Lee et al. (2014) and Magnuson and Shager (2010) contend that the lines along the quality and focus of programs that once separated Head Start from public school pre-kindergarten and other types of preschool programs have become blurred.

Studies of the Impact of Model/Demonstration Preschool Programs

There are large amounts of evidence from studies of large-scale early childhood education interventions confirming the impacts of quality preschool programs on a child’s learning (Anderson et al., 2003; Currie, 2001; Duncan & Magnuson, 2013; Huang et al., 2012; Lee et al., 2014; U. S. Department of Health and Human Services, 1999). Some researchers have been doubtful of the reported long-term impacts of preschool
programs due to the fact that the studies did not follow-up with participants through high school and adulthood (Magnuson & Waldfogel, 2005; Department of Health and Human Services, 2014b). The discourse that follows will provide a more in-depth discussion about the impact of small and large-scale early childhood intervention programs that are considered model programs on P-12 school and later life follow-up studies. These models provided access to quality programs and offered comprehensive services to children from low-income, disadvantaged and their families in an effort to reduce academic disparities resulting from economic disparities which have heavily influenced policy and program development in the field of early childhood education (Reynolds, Miedel, & Mann, 2000). Several such programs will be discussed in the sections that follow.

Each of the model or demonstration programs discussed in this paper also founded their curricular design and implementation in Piagetian and Montessorian constructivist philosophies and methods (Goffin, 1994; Elkind, 2003). Montessori’s constructivist views emphasize that the construction of knowledge and intelligence rests in the self-guided path of the child. These views are reflected in her statement: “The hands are the instrument of man’s intelligence” (Montessori, 1964/1967, p. 27). The High/Scope program was founded on constructivist leanings (Elkind, 2003). Activities in high-quality preschool settings focus on the intellectual and social development of the children by incorporating active learning through play (Gettman, 1987). Magnuson and Shager (2010) noted that in the Perry Preschool program teachers employed an “active learning model” as a way to further the children’s developmental gains. .
In 1964, Head Start legislation provided the first large-scale, federally-funded early childhood intervention program in the United States to focus on children from low-income, disadvantaged backgrounds. After Head Start, several other intervention programs followed and are considered targeted demonstration or model preschool programs which have produced notable effects across academic, social, health, and behavioral domains (Hill, Gormley, & Adelstein, 2012). The Chicago Child-Parent Center Program, High/Scope Perry Preschool Program, and the Abecedarian Project are three public preschool programs making large-scale impacts in the U.S. that are considered “flagship early childhood intervention programs” (Heckman, 2011, p. 34). Although studies have demonstrated short- and long-term academic benefits of early education programs, this review will focus on studies of long-term since that is the topic of this study.

**Chicago Child-Parent Center Program.** The Chicago Child-Parent Center (CPC) was initially launched in 1966 and funded the following year by Title I of the Elementary and Secondary Education Act (Department of Early Childhood Education, Chicago Public Schools (DECE), 2011). This was the second federally funded early intervention program with the goal of providing assistance to families living in poverty (Follari, 2015). In order to provide access to the underprivileged, underserved population, families meeting certain income guidelines were given priority in selection and parents were required to volunteer a minimum of one half-day per week. This half-day program operated 5 days a week and focused on decreasing school absenteeism rate and increasing student achievement in a high poverty area of Chicago designated a Title I school (Department of Early Childhood Education, Chicago Public Schools, 2011).
Using data from the Chicago Longitudinal Study, Temple and Reynolds (2007) found that the children began their education early (at age 3 or 4) lessened the likelihood of needing remediation services or being retained. In addition, researchers found that children who began the program and age 3 or 4 old were less likely to need intervention or remediation services (special education or retention); and the participants were more likely to graduate from high school and less prone to commit crimes in their youth.

*High/Scope Perry Preschool Program.* This was an experimental study conducted by David Weikart and colleagues from 1962 through 1967 in an Ypsilanti, Michigan school district. This was an early intervention program design that targeted low IQ three and four-year-olds from disadvantaged backgrounds to help them avoid difficulties and failures in school (Magnuson & Shager, 2010). Perry Preschool program children participated in a half-day program taught by teachers with at least a bachelor’s degree and the program incorporated home visits. The Perry High/Scope curriculum reflected the constructivist learning principles and beliefs of Piaget (Follari, 2015). The original cohort began with 123 African-American children, with 58 being randomly chosen to receive a high-quality preschool program for ages 3 and 4; 65 were assigned to no preschool program group. The High/Scope Educational Research Foundation has collected data since the first cohort in the 1960s and continues to collect data annually on both groups beginning at age 3 and continuing through adulthood (age 40) (Follari, 2015).

Longitudinal analysis of Perry Preschool Program data indicates both short- and long-term benefits for children from disadvantaged backgrounds participating in a high-quality preschool education programs (Duncan & Magnuson, 2013; Schweinhart, 2013).
These benefits spanned the following domains: education, economic performance, crime prevention, family relationships, and health (Schweinhart, Barnes, & Weikart, 1993; Schweinhart et al., 2005; HighScope Perry Preschool Study, 2005; Yoshikawa, 2013). Up through age 40, educational findings show that those who participated in the program had higher levels of school completion, significantly better attitudes toward school, and more superior performance on cognitive and language tests than those who did not participate. When gender comparisons were made, larger percentages of females were high school graduates than males. The economic trends discovered in this study showed that at age 40, significantly more participants in the program group were employed and the males in this group accounted for the larger population of employment. The program group had significantly higher median annual earnings and more stable living arrangements and lesser use of public assistance than the group who did not receive preschool treatment.

*The Carolina Abecedarian Project.* Another preschool intervention study conducted by the Frank Porter Graham Institute at the University of North Carolina (UNC) at Chapel Hill was the Abecedarian Project. Like the High/Scope Perry Preschool, this was a large-scale, controlled experimental study designed for the purpose of determining the presence and magnitude of benefits of early childhood education for poor children (University of North Carolina, n.d.). This randomized study assigned infants born in 1972 to either the early educational intervention group or the control group and continued for five years. The original cohort included 111 infants from predominantly minority backgrounds (98% African American) who met criteria of being at a socio-demographic risk of experiencing academic difficulties and cognitive delays (Reynolds et al., 2010). From birth to age five participants received full-time intervention in a
childcare setting, with each child having their own individualized education plan that would focus on social, emotional, language, and cognitive development through a variety of activities and games. The program included a parent component and employed highly qualified teachers with elementary, early childhood, and special education.

Findings from follow-up studies conducted at 12, 15, and 21 years of age provided evidence that children from disadvantaged backgrounds who participate in the early education program may reap numerous benefits (Campbell & Ramey, 1995; Heckman & Masterov, 2007). The following conclusions were made regarding children who received the early childhood educational services in the Abecedarian program: 1) they had higher cognitive scores from toddler years to age 21; 2) they scored higher in reading and math tests of achievement from primary grades through young adulthood; 3) they had higher number of years of education and were more apt to attend a four-year post-secondary institution; 4) they waited longer, on average, to begin having children; 5) they experienced enhanced language acquisition and development; 6) they had mothers who went further in their education and who had higher employment rates (Campbell & Ramey, 1995; Cunha & Heckman, 2009; Reynolds et al., 2011; University of North Carolina, n.d.). It was noted by researchers at UNC that the cognitive and academic benefits from this program were stronger than those in most other early childhood programs (University of North Carolina, n.d.).

Results from these intervention studies emphasize the benefits of early investments in the life of a child and highlight the more important social responsibility of making their home lives better through early education (Currie, 2001; Heckman, 2006, 2011). Cunha and Heckman (2007) found that early intervention programs have effects
on reducing or eliminating gaps in a child’s early education and into adulthood. However, these gaps are due less to the quality of schools and more likely to the environment in which the child lives (Cunha & Heckman, 2009).

**Academic Impact of Early Childhood Education**

**Impact on cognition and achievement.** There is a large body of research confirming both short- and long-term effects that high-quality early education can have on the cognitive and academic outcomes of children from disadvantaged backgrounds (Barnett, 1995; Karoly, Kilburn, & Cannon, 2005; Reynolds, Magnuson, & Ou, 2010) and those from more advantaged backgrounds (Burchinal, Peisner-Feinberg, Bryant, & Clifford, 2000). There is a general consensus among studies confirming the short-term academic benefits of early childhood education programs (Barnett, 1995; Barnett, 2010; Camilli, Vargas, Ryan, & Barnett, 2010). However, some studies have raised doubts about the long-term impact of preschool programs due to the fade out phenomenon (Barnett, 1995; Currie & Thomas, 1995; Huang, et al., 2012), yet other studies have confirmed their academic and fiscal benefits (Aos et al., 2004; Barnett, 1998; Karoly et al., 2005).

Fade out “refers to the diminishing effect size of ECE attendance on children’s test scores over time, as children age” (Morrissey, Hutchison, & Burgess, 2014, p. 2). There are some studies of early childhood education that suggest the benefits associated with preschool attendance are short-lived with impacts fading out and becoming unnoticeable beyond second grade. Researchers found that in later years, those who did not attend formal preschool performed similarly on academic measures when compared to those children who attended an early childhood education program (Duncan &
Magnuson, 2013; U.S. Department of Health and Human Services, 2010/2012). Initial evaluations of large-scale programs like Head Start, High/Scope Perry, and Abecedarian were conducted it was found that gains on achievement test scores by the programs’ participants tended to diminish as the child aged (Cicirelli, 1969; Schnur, Brooks-Gunn, & Shipman, 1992).

Three decades after heavily-criticized initial studies of large-scale early childhood education programs, the U.S. Department of Health and Human Services undertook a randomized impact study of Head Start. The Head Start Impact Study that began in 2002 examined the effect of program attendance on pre-reading, pre-writing, and vocabulary of 3- and 4-year-olds. The experimental study comparing children who attended Head Start with those who had not, demonstrated short-term gains in tests of pre-reading, prewriting, and vocabulary for 3-year-olds and gains in only pre-reading and prewriting among 4-year-olds (Morrissey et al., 2014).

Further examination of the literature revealed more recent findings concerning the impacts of high-quality preschool programs on academics. For example, in the Virginia Preschool Initiative study, researchers found that overall, children who participated in the program were more likely to meet the state’s minimum literacy competencies upon kindergarten entry than those who did not (Huang et al., 2012). In as study of Tulsa, Oklahoma’s state-funded prekindergarten program, attendees performed at higher levels on pre-reading skills (by 9 months), pre-writing skills (by 7 months), and pre-math skills (by 5 months) than children who did not attend the program (Gormley et al., 2008).

Another study by Weiland and Yoshikawa (2013) sought to determine impacts of a public school pre-kindergarten on children’s language, literacy, and mathematics
domains. The research team used data from over 2000 students who had attended Boston Public School’s prekindergarten program. Their findings suggest that participation in preschool produced positive impacts on measures of mathematics, literacy and language skills (Weiland & Yoshikawa, 2013).

Reviews of literature on over 84 preschool program evaluations found that on average, children gain about a third of a year of additional skills across language, reading, and math (Yoshikawa et al., 2013). Other studies reporting long-term impacts of attending preschool were examined during this review of literature. Deming (2008) found a relationship between Head Start participation and increased reading, vocabulary, and math performance. In a reanalysis of previous work by Currie and her team (2001) on the effects of Head Start, Deming (2008) uncovered much larger positive effects on long-term impacts namely, high school graduation.

An additional study by Duncan and Magnuson (2010) looked at the implications of improved academic skills increasing the likelihood of long-term impact. In their analysis, Perry Preschool program participants demonstrated improved literacy and numeracy skills which the researchers assert can translate into later-in-life success from high school through adulthood. Researchers concluded that improved academic skills may have prevented retention or placement in special education (Duncan & Magnuson, 2010).

In order to determine whether cognitive outcomes were affected by participation in an early childhood program, a comprehensive review of programs was conducted by Anderson et al (2003). They identified over ten studies that examined cognitive outcomes, including IQ. Their findings revealed positive effects of preschool
participation on IQ that persisted within 1 year after the intervention and then 3 to 10 years (Anderson et al., 2003).

While there is ample research on the long-term impact of preschool attendance, the review of literature disclosed limited findings to the contrary. Ludwig and Miller (2007) conducted a county-level reanalysis of Head Start participants and compared them to non-participants on academic measures. They found that there was no statistically significant difference in eighth-grade math scores of those who participated in Head Start and those who did not (Ludwig & Miller, 2007).

Additional research reported finding little sustainable impact of preschool on attendees was conducted by Peck and Bell (2014). They studied third-grade outcomes and found no indication that children who participated in Head Start, regardless of the program’s quality, performed at a level significantly different than those who did not attend Head Start. Additionally, the U.S. Department of Health and Human Services (2010) reported that the academic benefits initially experienced by Head Start participants were nearly or non-existent at first and third grade follow-ups.

*Retention*. Researchers of early childhood education programs often use retention rates as a measure of academic effect on the cognitive development of participants (Gomby et al., 1995). Retention rates have academic and social implications. “Retention in grade is highly predictive of failure to graduate from high school, and high school graduation is an important precursor to socioeconomic well-being and improved health status” (Anderson et al., 2003, p. 37). Historically, research has provided evidence that children from low-income, disadvantaged backgrounds have an increased likelihood of being retained than their non-disadvantaged peers (Burger, 2013; Reynolds et al., 2007).
Research has shown that holding a child back in the same grade can have negative effects on their self-esteem and morale (Jimerson, Anderson, & Whipple, 2002) and on the school system (Xia & Glennie, 2005). Despite research findings on the detriment of repetition of grades, Planty and colleagues (2009) report the largest portion of retentions occur in early elementary, one in every ten students in from kindergarten through eighth grade has been held back in at least one grade.

Gilliam and Zigler (2000) conducted evaluations of 18 state-funded preschool programs that considered retention a critical measure in determining the effectiveness of the states’ pre-k programs. According to the researchers, “in many ways positive impacts in this outcome [retention rates] may be one of the most robust findings for state programs, because every state that evaluated this outcome found a statistically significant impact at one or more grade levels…” (Gilliam & Zigler, 2000, p. 459). Findings in this study revealed that by third grade, 26% of Maryland’s preschool participants had been retained, while 45% of non-preschool attendees had been retained; at fifth grade, 28% retention rate among preschool attendees compared to a 50% retention rate among those without state preschool; at eighth grade, 34% of those who attended state-funded preschool had been retained while, 55% of non-preschoolers had been retained; and by tenth grade, 44% of students who did attend Maryland’s program had been retained compared to a 64% retention rate among those who had not participated in the state’s preschool.

Several of the studies in the meta-analysis conducted by Anderson and her team (2003) also used retention rates to measure cognitive ability and their findings revealed a decrease in retention among students in early childhood education programs. In another
study by Copple, Cline, & Smith (2003), results demonstrated positive effects for preschool programs on retention rates; however, the lack of sufficient participant data posed limitations on calculating effect sizes. Gilliam and Zigler (2004) also found from the results of 18 states’ prekindergarten programs that reduced retention in kindergarten and boasted effects that would be far reaching into middle school. In addition, the researchers concluded that a child being retained or held back in a grade increases the likelihood that that student will drop out of school prior to graduation (Anderson et al., 2003; Gilliam & Zigler, 2004).

Results from follow-up studies of preschool programs yielded similar findings. In a follow-up, Deming (2008) conducted a reanalysis of data from a study by Currie and colleagues. Upon sibling comparison, the researcher found that those who attended Head Start had increased academic outcomes and subsequently lower rates of retention when compared to their siblings who had not attended Head Start (Deming, 2008). Huang, Invernizzi, and Drake (2012) examined data from the Virginia Preschool Initiative (VPI) to compare the repetition rates of children who participated in VPI and those who did not. Their findings showed that more non-VPI participants were retained in kindergarten than VPI participants which led them to conclude that VPI attendees were less likely candidates for kindergarten retention (Huang et al., 2012).

Fifteen-year follow-up studies were also conducted on some early model programs. Temple and Reynolds (2007), in a follow-up study of model preschool intervention programs, found a lower retention rate (31%) among those 15 year-olds who attended a model program and those who did not. More specifically, researchers found that 15-year-olds who had attended the Chicago Child-Parent Center’s program had a
retention rate of 23% whereas those who did not attend the program had a retention rate of 38% (Temple & Reynolds, 2007).

While some studies found that preschool attendance impacts academic outcomes by reducing the likelihood of retention, other studies did not. In an early large-scale intervention program, the Early Training Project, Currie (2001) found that no statistically significant difference in retention rates existed among those children who did participate in the program and those who did not. The researcher attributes this outcome to the lack of statistical significance to the small sample sizes, 44 treatments and 21 controls (Currie, 2001). This study, aside, however, the majority of studies disclosed fewer retentions among pre-school participants than among their peers who did not attend pre-school.

**Gender influences.** When considering gender as a variable for this project, the researcher consulted several studies. Follow-up studies of some well-known projects were examined to investigate gender differences in program outcomes among preschool attendees. The High/Scope Perry Preschool, Abecedarian, and the Chicago Child-Parent Center projects, as well as Head Start and other programs, were included in this review of the literature.

In a follow-up study of the Perry Preschool Project, Belfield et al (2006) found that almost four times as many females who participated in the preschool graduated from high school compared to males; the Perry preschool males who completed high school took twice as long as females who attended preschool. In addition, researchers found that among these high school graduates who went on to college, only about 5% of females and no males graduated from college. Similar results were revealed in a follow-up study from the Abecedarian program. Campbell and his team (2008) analyzed data that
suggested that females who attended those programs were more likely to complete high school and graduate from college than peers who did not attend while males showed no significant difference.

A follow-up study of participants to age 40 revealed that the Perry program had strong effects that would provide long-lasting impacts that would persist into adulthood (Schweinhart et al., 2005). Additional analysis of the 40-year follow-up data by Heckman and his team (2010) confirmed previous findings. When considering education in the K-12 setting, additional findings were that females who attended Perry program were less likely to receive special education services than females who did not; when compared to Perry program females, most non-Perry females who stayed in school longer were retained in a grade and many eventually left high school without a diploma (Heckman et al., 2010). Findings in regard to post-high school training suggested that females who participated in the Perry program were more likely to attend a vocational training program than their same-sex counterparts while non-preschool males were more likely to attend vocational training than males who attended the Perry preschool program. It was interesting that this follow-up study reversed the findings of the earlier study that achievement faded over time (Schweinhart, 2013).

A 15-year follow-up study of the Chicago Child-Parent Center (CCPC) program was conducted by Reynolds, Temple, Robertson, and Mann (2001). Reynolds and his team analyzed the data from 989 children who attended the Chicago program and 550 children who did not, but may have attended a different preschool program (2001). At age 20, school dropout data suggested that boys experienced the greater benefit from preschool participation than girls. School dropout differences between boys who attended
the CPCC (51%) and boys who did not (67.7%) were significantly different; however, there was not a meaningful difference among girls who attended CPCC (42.4%) and those who did not (42.7%) (Reynolds et al., 2010). Also, boys attending CPCC completed high school at a higher rate than their same-sex counterparts (42.6% and 29.0%, respectively) and the girls who attended the CPCC completed high school at a high rate, though not significantly different from their comparison groups.

Joo (2010) conducted an analysis of data from the Panel Study of Income Dynamics (PSID) to determine how boys and girls who participated in Head Start performed on the Woodcock-Johnson-Revised Tests of Achievement (WJ-R) compared to those children who did not attend Head Start. Joo focused on 599 children who were 7-12 years old in 1997 and 12-17 years old in 2002; these students had also been identified as participating in an early childhood and care education program (2010). The total scores in for the WJ-R in areas of math and reading were collected and based on gender, both boys and girls who had participated in preschool settings other than Head Start scored higher than boys and girls who attended Head Start (Joo, 2010).

The review of literature on the effects of gender on preschool revealed a study outside the U.S. In a Chilean study on the impact of the country’s public early childhood education programs on fourth grade academic achievement, Cortazar (2015) analyzed data from the Educational Quality Measurement System, SIMCE, to determine gains in mathematics, social sciences, and reading. Based on gender, boys who participated in a preschool program scored higher, on average, in math, reading and social sciences than boys who did not participate in any type of preschool (Cortazar, 2015). Overall, the
study did find a difference among boys and girls, with boys scoring higher on all three tests (Cortazar, 2015).

Although there were several studies demonstrating the differential effect of preschool on boys and girls, the review of the literature did reveal one study that found no significant difference. The study conducted by Maldonado in 2008 analyzed participants’ third-grade reading and math scores on the Texas Assessment of Knowledge and Skills (TAKS) to determine differences on the tests based on gender. Data analysis indicated that there was no significant difference among children who attended preschool and those who did not with regard to gender (Maldonado, 2008).

*Parent perception.* In this study parents’ beliefs regarding the benefits of their child’s preschool experience will be explored. Upon review of pertinent literature, it was discovered that most studies are of programs that consider the effects that participation in early childhood education programs has on the child, which is the major premise of early childhood education. There was very limited research examining the parents’ beliefs about their children’s preschool experience or performance.

The literature on early childhood education programs has consistently regarded the parental role as critical to the success of the program. A study by Galper, Wigfield, and Seefeldt (1997) focused on “parents’ beliefs about their children’s prospects for the future and their school-related abilities” (p. 897). The researchers conducted their study using parents of students in the District of Columbia’s Head Start–Public School Transition Demonstration who were entering kindergarten. Parents were asked their views regarding their children’s abilities and performances on academic tasks (alphabets, numbers and reading), sports and friends with questions like, “How good is your child
at…? “How important is it to you that your child does well in…?” and “Is your child doing as well as you thought in…?” (Galper et al., 1997, p. 901). Parents rated academic tasks highest in importance over sports and friends and conversely, when asked their beliefs regarding how well their child was doing on all tasks, they rated academic measures lower than sports and friends (Galper et al., 1997). Overall, Galper and colleagues found that children who attended Head Start reaped greater gains from the program when the parents’ beliefs about their children’s abilities were positive.

One other study was found that examines the accuracy of maternal beliefs about their child’s success. Mothers and their children were administered both a Piaget test and an IQ test where parents had to provide probable responses of their child and for all children in general (Miller, 1986). Researchers in this study found that parents could only moderately accurately predict their child’s success given the limited knowledge of the child’s abilities (Miller, 1986). Possible explanations for the moderate correlation was a parent’s tendency to be optimistic in regards to their own children’s abilities; and they also tend to not want to overestimate what young children are able to do but will for older children (Miller, White, & Delgado, 1980).

Parental involvement. A thorough literature review revealed only a few studies that addressed the link between parental involvement and student achievement on the preschool or early childhood level. One of the largest studies found investigated the parental involvement of over 700 parents of preschool and Head Start children from disadvantaged socioeconomic backgrounds (Marcon, 1999). The study used teacher rating scales and found that increased and active parental involvement resulted in the increased acquisition of preschool skills (Marcon, 1999). Another study that utilized a
parental involvement rating scale was conducted by Taylor and Machida (1994). They examined teacher ratings of the parents of sixty-three Head Start children in rural California. The researchers report that the active involvement of parents and student skills and behavior were positively correlated.

A more recent study by Arnold, Zeljo, Doctoroff, and Ortiz (2008) investigated the relationship between parental involvement during the preschool years and the preliteracy skills of the children. The study population included the parents, teachers, and 163 preschoolers. Parents were rated on a scale by teachers and student achievement was measured using standardized assessments. Arnold et al. (2008) found that the more involved parents were in their children’s academic lives the greater the child’s prereading skills. The researchers also looked at socioeconomic status and parental involvement and they reported that the two variables were positively correlated.

Economic Impact of Early Childhood Education

Cost-benefit analysis associated with early childhood education. Some states have dramatically increased public allocations for early childhood education and have subsequently witnessed dramatic increases in preschool enrollees; however, many states have simultaneously witnessed a decline. Resmovits (2013) reports that researchers at Rutgers University’s National Institute for Early Education Research reported in their annual yearbook, The State of Preschool 2012, that funding for the school year 2011-2012 proved to be the lowest in the decade prior. This points to a much larger problem since early childhood education has been deemed “a ladder to the middle class” (Resmovits, 2013).
Economists often refer to educational funding as a type of investment in human capital (Becker, 1993). James Heckman, one of the nation’s leading economists, believed that economic models of human capital should include the concept of ability that is fluid and influenced by investment and that skills gained at any time will have a direct effect on skills gained later (Heckman 2007, 2011). Furthermore, Anderson et al. (2003), reasoned that in order for society to reap substantial gains on investments, it must invest early and then follow-up with additional investments. With ongoing investments of time and effort in educating young children, benefits can then be realized in high school (Sheehan, et al., 1991; Votruba-Drzal et al., 2008).

Over the years, there have been debates concerning the importance and potential impact of early childhood education, or preschool. As far back as 1968, Hess posed the following question: "Do preschool years deserve the fiscal resources and professional talent allocated to them?" (p. 2) To answer this question, Heckman brought together a multidisciplinary panel and they found that early childhood development directly influences economic, health, and social outcomes for individuals and society (Heckman, Stixrud, & Urzua, 2006; Heckman, 2011). According to the Heckman Equation, fully funded early childhood education is imperative in order to decrease fiscal constraints on society, thereby improving the economy. Heckman (2006) offered the following assertions in support of this claim: 1) early childhood development drives success in school and in life; 2) investing in early childhood education for at-risk children is an effective strategy for reducing social costs; and 3) investing in early childhood education is a cost-effective strategy for promoting economic growth.
Cost benefit analysis was conducted by various researchers on the Perry Preschool Program, the Abecedarian Project, and the Chicago Child-Center Program. Programs such as these are expensive, but have impressive payoffs. Using data from a follow up study of the participants of the Chicago Parent-Child Program, Temple and Reynolds (2007) determined the cost benefit associated with attending the preschool program to range from $5.98 - $10.15.

Other studies of the cost-benefit ratio of the previously discussed programs revealed that despite the variation in the amount of return, each of the programs consistently had a positive impact on the economy (Heckman et al., 2010; Temple & Reynolds, 2007; Schweinhart et al., 1985). The Texas Early Childhood Education Coalition (2008) reported that the Abecedarian program returned $3.74 for every $1 invested; the Chicago Child-Parent Center Program returned $7.14 for every $1 invested; and the Perry Preschool Program returned $8.74 for every $1 invested. The High/Scope Educational Research Foundation reported findings that suggested for every dollar spent on the original Perry Preschoolers, $7 was saved in special programs and services that might have been required later in life had they not received early intervention through preschool (Heckman, 2007; Heckman et al. 2010). Temple and Reynolds (2007) predicted that by the age of 65, those participants in the Perry Preschool study would become high school graduates who would earn approximately $202,176.00 more than their peers who drop out.

The economics of high school graduation and dropout rates. The high school dropout rate is a topic of concern among local, state, national and even global leaders. This is due, in large part, to the economic impacts that dropping out school has on society
(Heckman, 2006; Rumberger, 2011). The literature review revealed many studies that measured these impacts.

Several studies demonstrated that students who leave high school prior to graduation have an increased likelihood of being unemployed or if employed, earning less than the job would pay someone who did have a high school diploma (Heckman, 2006; Rumberger, 2011; Rumberger & Thomas, 2000; Swanson & Editorial Projects in Education, 2009). Swanson and Editorial Projects in Education (2009) also found that high school dropouts become societal liabilities since they are more likely to participate in public welfare programs, develop depression, engage in criminal acts, and be incarcerated (Belfield & Levin, 2007; Heckman et al. 2010).

In a follow-up study of High/Scope Perry Preschool program at age 40, Heckman et al (2010) found a major benefit experienced by attendees was reduced incidents of criminal activities as evidenced by arrest records, lifetime crime profiles, convictions, charges, and incarcerations. Heckman and colleagues (2010) found data to suggest that prior to age 27, female Perry attendees received less welfare than female non-attendees, however, at age 40 follow-up, the results were reversed. This team further reported that overall welfare usage by males was lower in non-attendees (Heckman et al., 2010).

Based on data from the U.S. Department of Education, National Center for Education Statistics (2014b), the high school dropout rate has decreased over the last 20 years. High school dropout rates are reported by the National Center for Education Statistics as status dropout rates; this term refers to the percentage of 16- to 24-year olds who are not enrolled in school and have not earned a high school diploma or General Equivalence Diploma (U.S. Department of Education, 2014b). From 1990 to 2012, the
status dropout rate decreased from 12 percent to 7 percent, with the largest drop occurring between the years 2000 and 2011; and from 2011 to 2012, there was no measurable difference in the rate between 2011 and 2012 (U.S. Department of Education, National Center for Education Statistics, 2014b).

The concern surrounding the employability of high school dropouts and even some who graduate has increased due to labor demands requiring a more educated workforce (Heckman & Lafontaine, 2008; Yoshikawa et al., 2013). A survey of the literature revealed studies that speak to job training and preparation for the workforce. Federally sponsored training programs created during the 1960s were to address the reduced earnings of the less-skill workers and poverty rate of the unemployed (LaLonde, 1995). The Manpower Development and Training Act (MDTA) of 1962 brought about the creation of Job Corps, a training program designed to provide a comprehensive menu of services for disadvantaged youths. However, there were additional job training programs developed to meet the needs of a growing disadvantaged U.S. population.

“Education and training programs are falling far short of their potential. A competition among states to provide workers with better information may point the way forward” (Jacobson & LaLonde, 2013). In a study of job training evaluation programs, LaLonde (1995) found that programs geared toward job training for adult males and youth prior to the study were ineffective. He noted that evaluations of workforce programs often reported that the job training had no effect on the participants or that the disadvantaged men and youth who had undergone the training earned less afterward (LaLonde, 1995). Another study by Freeman and Simonsen (2015), examined the impact of policy and practice intervention on high school dropout and completion rates.
Researchers found that studies that provided interventions that included training and preparation for high school students in grades 10 through 12 demonstrated significant decreases in dropout rates and increases in school completion rates (Freeman & Simonsen, 2015).

Studies discussed previously in the paper suggest that retention rates can be an early predictor of high school dropout rates. Despite what is known about the expense of retaining a child, this practice is evident in the literature. Eide and Goldhaber (2005) provide an analysis of the costs and benefits of grade retention and provide broad estimates of what the benefits would have to be in order to make retention cost-effective.

Although a large body of evidence finds that retention is not effective, there is a smaller collection of early studies that boast the benefits of retaining a child. Eide and Goldhaber (2005) found that in an eight-year study conducted by Alexander and colleagues, which included documented progress data of over two hundred Baltimore students, found that being retained had a positive effect on their academic achievement and self-esteem. Eide and Showalter (2001) reported marginal decreases in the probability of a retained child dropping out of school.

Regardless of the cause, dropping out of high school has definite negative societal and economic impacts. Currie (2001) contends that for this reason, providing quality education early in a child’s life may help to compensate for unequal outcomes. She further asserts that it is much more difficult later in life to overcome the effects of growing up poor. As the search of literature revealed, after a student drops out of high school, job training efforts are found to be ineffective (LaLonde, 1995) which strengthens
the case for early intervention through preschool attendance (Currie, 2001; Heckman, 2011; Yoshikawa et al., 2013).

*Influence of early childhood education on socioeconomic status.* In the United States, one of the richest nations in the world, child poverty is substantially higher than is the case in most other major Western industrialized nations (Boyden & Bourdillon, 2012; Yelland, 2010). According to the National Center for Children in Poverty (2014), approximately 11.1 million children ages 5 to 17 years old were in families living in poverty in 2012. Even though the poverty rate for school-age children in 2000 was lower (15 percent) than in 1990 (17 percent), the percentage of children living in poverty rose 6 percent in 2012 (21 percent). In poverty situations, children are more susceptible to the far-reaching detriment which has the potential to produce negative early childhood experiences thereby causing damage across social, emotional, cognitive and physiological domains (National Scientific Council on the Developing Child, 2007; Polakov, 2010). Literature documents that children of poverty or from disadvantaged environments are more likely to perform lower than their non-disadvantaged peers (Joo, 2010; Yueng, Linver, & Brooks-Gunn, 2002).

President Lyndon Johnson’s purpose for signing the Head Start Act in 1964 was to wage a war against poverty in the U.S. By virtue, Head Start was designed to minimize the detrimental impacts of poverty on child outcomes. Head Start programs provide comprehensive developmental services for children from low income, low socioeconomic status, or disadvantaged backgrounds.

A number of studies have indicated that the impacts of early childhood education vary based on the socioeconomic status of the participants. While some researchers
(Gormley et al., 2005; Burchinal et al., 2000) have suggested that there are no statistically significant differences in the benefits of preschool programs received by children from advantaged as well as disadvantaged backgrounds, Magnuson, Ruhm, & Waldfogel, (2007) countered that larger cognitive gains were observed among children from disadvantaged backgrounds who attended preschool.

These statistics provided the basis for several proposals and expansions of federal programs. Education and early childhood programs witnessed increased allocations, as well as poor families with children, were able to reap the benefits of billions of dollars in additional funding for Head Start, Early Head Start and many other federal education programs (Joo, 2011).

The goal of childhood intervention programs is to eliminate or decrease the limitations children of poverty experience in the physical, cognitive, and emotional areas of life (Blackman, 2002). Comprehensive early childhood development programs are designed to improve the cognitive and social-emotional functioning of preschool children, which, in turn, influences readiness to learn in the school setting (Anderson et al., 2003; Barnett & Belfield, 2006). Low family income and community poverty are also related to racial and ethnic achievement gaps.

Heckman and colleagues looked at how family environments impact test score data across schools and found that by statistically controlling for the effects of family, the racial and socioeconomic gaps substantially narrowed (Heckman, 2011). These findings supported the research evidenced in the Coleman Report, which concluded that it was not the school environment, but the characteristics of the family that accounted for much of the variability in test data (as cited in Heckman, 2011). The High-Scope Perry Preschool
Program, the Abecedarian Project, and the many other intervention programs that have followed have provided strong support for the idea of investing in children and their families in order for more quality educations and favorable adult outcomes (Heckman et al., 2010; Heckman, 2011; Howard-Jones et al., 2012).

For many years, researchers have contended that in order to strengthen the economy and reduce deficits in their society, there must be substantial investments in early childhood education programs (Campbell et al., 2014; Heckman, 2006; Herrnstein & Murray, 1994). Disadvantaged early environments create deficiencies in the skills and socialization of children and often diminish productivity, increase social costs and add a financial burden to the communities in which they occur. In a series of papers, Heckman asserts that investing in the lives of children at an early age will reap substantial financial, health, and social benefits; and contends that intervening in a child’s life early has a tremendous effect on shaping positive outcomes in adulthood (Heckman Equation, n.d.).

Summary

There is extensive evidence that early educational interventions can provide benefits ranging long-lasting effects that are realized by the time child reaches adulthood. This chapter contained research which evaluates historical perspectives of early childhood education. Studies reviewed in this report supported the theories of early researchers and economists that found early education experiences appear to predict later economic, social, behavioral, and cognitive outcomes.

The contemporary policies that have influenced the practice of early childhood education programs since the creation of Head Start suggest that the societal benefits of participating in preschool far outweigh the costs of funding preschool efforts. Literature
demonstrated that, despite the fact that policymakers, business owners, educators have increased funding for preschools on local, state, and federal levels, a portion of American children still do not enroll in early education programs. Many studies concurred that increased allocation to fund more and better-quality preschools have contributed to reducing deficits and lessening difficulties that may be experienced later in their school career and adult lives.

Various preschool programs have shown positive effects on attendees’ achievement and cognitive development. Results from numerous studies indicated these effects have been shown to vary in persistence based on program type. Studies also suggested that early phases of Head Start were criticized for being low-quality and distinguishable from public school pre-kindergarten programs. However, upon close look, the literature contends that the inequalities and inadequacies that once separated preschools based on type have been blurred.

The evaluations of large scale and small scale studies and model programs like the High-Scope Perry Preschool Program, Abecedarian Project, and the Chicago Child-Parent Center Program were included in this review. A vast majority of the programs and their evaluations demonstrated that early childhood education programs have a positive effect on improving academic achievement and cognition, increasing readiness to learn, reducing grade retention, improving dropout prevention efforts, and subsequently improving the economy and lives of families from all socioeconomic backgrounds.

Results varied based on preschool attendance and gender. The literature concerning gender demonstrated mixed reviews. Several studies found that boys who attended preschool did not perform as well academically as girls who attended preschool.
Other studies found the opposite and yet a small sampling of research found no differences in academic performance with regard to gender.

With the abundance of evidence of the benefits of early childhood education presented in this review, participation in a preschool program was associated with increased earning potential, lower incidences of retention and dropping out, and with an increase in high school graduation rates. A cost-benefit analysis for attending model or demonstration programs was conducted based on earnings of attendees, their past criminal records, and their participation in social welfare programs. Subsequent robust returns on the state’s investment dollars were well-documented. For example, research indicated that through provisions of expanded access and funding of preschool education children perform better, which lessens their chances of experiencing academic difficulties and later dropping out.

Research on the socioeconomic influences of attending preschool revealed that a large portion of children in the U.S. live in poverty, which places them at economic and academic disadvantages before they begin school. Many of the programs documented in the literature based their enrollment on the socioeconomic status of the parents. The results indicated that preschool children from disadvantaged backgrounds realized benefits that persisted longer than for those preschoolers from more advantaged backgrounds. Overall, the literature suggests that all children benefit from attending a quality preschool program, regardless of socioeconomic status.
CHAPTER III

METHODOLOGY

This chapter presents a detailed description of the research design that was chosen for this study to compare the academic performance of high school seniors who participated in a preschool program of any kind compared to the performance of seniors who did not attend preschool. The study further analyzed the difference among preschool groups with regard to gender, retention history, and socioeconomic status. In addition, the study examined the beliefs of parents of preschool attendees about the impact of preschool on their children’s formal school success. The rationale for the setting and population studied, the instrumentation and materials used to gather data aimed at answering the research questions, and the data analysis techniques are discussed. An explanation of the variables, the Mississippi Curriculum Tests (MCT) and the Mississippi Subject Area Testing Programs, Second Edition (MSATP2) are also provided.

Research Design

The research design for this study regarding the academic performance of high school seniors and beliefs of their parents used quantitative analyses. Data were compiled from archived scores from the students’ third grade reading and math MCT results, their high school SATP2 tests in English II and Algebra I, and their most recent American College Test (ACT) administration. In addition, archival data pertaining to the students’ retention history, gender, and socioeconomic status were collected from the cumulative records by high school counselor at each site. Additional data were gathered from questionnaires completed by the parents of high school seniors. Questions regarding preschool attendance and type, as well as the beliefs about the impact of preschool on
attendees was included in the data collected from parents. The variables for this study included preschool experience type, parents’ reports of their beliefs about the impact of preschool on reading and math achievement, the students’ archived third grade MCT Reading and Math scores, English II and Algebra I SATP2 scores, and ACT composite scores. Additional variables used in the analysis included students’ archived retention history, gender, and socioeconomic status.

Research Questions and Hypotheses

This study examined the preschool attendance of high school seniors and differences in their performance on high-stakes accountability tests, retention history, and measures of academic achievement (ACT scores). The study also examined differences in performance among groups with regard to retention, socioeconomic status, and gender. Finally, the study examined parents’ beliefs about the impact of preschool on their children and on subsequent academic measures.

The specific research questions addressed in this study were as follows:

1. Are there differences among high school seniors, based on preschool experience (Head Start, public school pre-kindergarten, private preschool, and no preschool), who attended preschool and those who did not attend preschool on the following academic measures?

   a. Third grade Mississippi Curriculum Tests (MCT) in Reading
   
   b. Third grade Mississippi Curriculum Tests (MCT) in Math
   
   c. English II Subject Area Testing Program, 2nd Edition (SATP2) test
   
   d. Algebra I Subject Area Testing Program, 2nd Edition (SATP2) test
   
   e. ACT composite score
2. Are there differences among these academic performance measures based on student’s retention history, socioeconomic status, gender, or the particular type of preschool program that a student attended?

3. Among those seniors who attended preschool, are there differences in parents’ reports of their beliefs about the impact of preschool across the three preschool program types on the following attributes of their children?
   a. Reading readiness
   b. Math readiness

4. Are parents’ reports of their beliefs about the impact of preschool on reading and math achievement related to the subsequent MCT Reading/Math and English II/Algebra I SATP2 scores of their children?

5. What are the reports of parents regarding their beliefs about the impact of preschool on the achievement of their children?

6. What are reports of parents regarding the degree to which they were involved in their children’s preschool and K-12 school experience?

The hypotheses related to the research questions are as follows:

H1: There are differences among high school seniors, based on preschool experience (Head Start, public school pre-kindergarten, private preschool, and no preschool), on the following academic measures:
   a. Third grade Mississippi Curriculum Tests (MCT) in Reading
   b. Third grade Mississippi Curriculum Tests (MCT) in Math
   c. English II Subject Area Testing Program, 2nd Edition (SATP2) test
   d. Algebra I Subject Area Testing Program, 2nd Edition (SATP2) test
e. ACT composite score

H2: There are differences among these academic performance measures by group based on students’ retention history, socioeconomic status, gender, or the particular type of preschool program that a student attended.

H3: Among those seniors who attended preschool, there are differences in parents’ reports of their beliefs about the impact of preschool across the three preschool program types on the following attributes of their children:
   a. Reading readiness
   b. Math readiness

H4: Parents’ reports of their beliefs about the impact of preschool on reading and math achievement are related to the subsequent MCT Reading/Math and English II/Algebra I SATP2 scores of their children.

Participants in the Study

This study was conducted in five high schools in the state of Mississippi. Convenience sampling was used in this research. Permission to conduct the study was sought from superintendents of the districts in which these high schools were located. A sample letter to superintendents is provided as Appendix A. Parents of 2015-2016 seniors from these high schools were asked about their children’s preschool attendance. Prior to the 2015-2016 school year, districts in Mississippi were not required to collect preschool information from students entering school. However, in April 2015, the Mississippi Department of Education notified districts of a new requirement to gather prior educational experience as a part of the kindergarten enrollment process beginning with the school year 2015-2016. In the current study, parents of seniors who attended
preschool were asked to rate the extent to which they believed that preschool participation impacted their child’s reading and math readiness. The study offered a geographically diverse participant sampling.

There was no active student participation in the study. The archived academic data of students from the sample schools included the 2015-2016 seniors’ third grade MCT scores, English II and Algebra I SATP2 scores, and latest ACT scores. Before any data were provided, designated school counselors matched students’ data to parent responses and later de-identified students before any data were provided to the researcher. Once permission was granted by the school districts, the researcher requested approval from The University of Southern Mississippi’s Institutional Review Board (IRB). The approval document from the IRB is attached as Appendix B.

Instrumentation and Archival Data Acquisition

Archival Data

Archival data were collected for the students whose parents return a signed consent to participate in the study. The following paragraphs describe these data sources. They consisted of standardized test scores and data on students’ retention history, socioeconomic status as operationalized by free/reduced price lunch participation, and gender. With the No Child Left Behind Act of 2001 (NCLB) requiring that all students achieve proficiency by 2013-2014, states adopted testing programs that would assess how well students were mastering the curriculum and how effective the instructional programs were being implemented throughout the state at the beginning of the 2003-2004 school year. In response, the Mississippi Statewide Assessment System was developed and included the Mississippi Curriculum Test (MCT) for elementary and the Mississippi
Subject Area Testing Program (SATP) for high school students. This system of assessment promotes instructional improvement in classrooms throughout the state and provides valid, reliable data for accountability purposes. However, the accountability system was revamped in 2009 and the present day program includes the second editions of both assessments, MCT2, and the SATP2. For this study, data from the first edition MCT and the SATP2 were utilized.

The MCT and SATP2 are part of the accountability program for Mississippi public schools and were established in response to the Mississippi Student Achievement Improvement Act of 1999 for every public school district in the state of Mississippi. The Act required that “standards for high school graduation shall include student mastery of minimum academic skills as measured by assessments developed and administered by the State Board of Education” (Mississippi Department of Education, 2010, p. 7). Archived third grade 2006-2007 MCT scores and the latest English II and Algebra I SATP2 scores for the 2015-2016 seniors were used to compare the differences in performance among those who attended preschool and those who did not. The reliability and validity of the MCT and SATP2 scores were demonstrated by test developers and ensured by the Mississippi Department of Education.

The 2006-2007 MCT measured student performance in reading, language, and mathematics in grades 2 through 8 and was based on the Mississippi Curriculum Frameworks which defines what students are expected to know and be able to do and are the basis for teacher instruction (Mississippi Department of Education, 2005). Students do not receive a pass or fail score on the MCT. Instead, they are assigned a performance level based on their responses on the assessment. There were four performance levels for
each test: Minimal, Basic, Proficient, and Advanced. At the time of testing, no district policies requiring certain scoring levels in order to be promoted to next grade were in effect.

The general performance level descriptors (PLD) for all sections of the MCT are as follows: Advanced—students consistently perform in a manner clearly beyond that required to be successful at the next grade; Proficient—students demonstrate solid academic performance and mastery of the content area knowledge and skills required for success at the next grade; Basic—students demonstrate partial mastery of the content area knowledge and skills required at the next grade; and Minimal—students do not demonstrate mastery of the content area knowledge and skills required for success at the next grade level (Mississippi Department of Education, 2005).

Table 1 outlines the scale score range that correlates with performance levels for third grade language arts and mathematics. Once permission was obtained from the superintendent, the researcher gathered 2006-2007 reading and mathematics scaled scores for each senior participant in the study.

Table 1

*Performance Levels for Third Grade MCT*

<table>
<thead>
<tr>
<th>Performance Level</th>
<th>Reading</th>
<th>Mathematics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced</td>
<td>&gt; 519</td>
<td>&gt; 514</td>
</tr>
<tr>
<td>Proficient</td>
<td>452-518</td>
<td>440-513</td>
</tr>
<tr>
<td>Basic</td>
<td>425-451</td>
<td>403-439</td>
</tr>
<tr>
<td>Minimal</td>
<td>&lt; 424</td>
<td>&lt; 402</td>
</tr>
</tbody>
</table>
The SATP and the more recent second edition, SATP2 are high school end-of-course tests given in Algebra I, Biology I, English II, and U.S. History from 1877 to assess secondary academic content and problem solving. There are four levels of performance on the SATP2 tests: Advanced, Proficient, Basic and Minimal. Passage of all these tests is required for graduation and is used to hold schools and districts accountable for academic achievement and growth and measurement of Adequate Yearly Progress (AYP). A passing scale score is one that falls at or above Proficient level. Table 2 lists the cut scale score values of the paper pencil test with their performance levels.

Table 2

Performance Levels for SATP2

<table>
<thead>
<tr>
<th>Performance Level</th>
<th>English II</th>
<th>Algebra I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced</td>
<td>661 - max</td>
<td>661- max</td>
</tr>
<tr>
<td>Proficient</td>
<td>650 – 660</td>
<td>650 – 660</td>
</tr>
<tr>
<td>Basic</td>
<td>642 – 649</td>
<td>642 – 649</td>
</tr>
<tr>
<td>Minimal</td>
<td>Min – 641</td>
<td>Min – 641</td>
</tr>
</tbody>
</table>

A performance level is assigned for a student taking any subject area test. The general performance level descriptors (PLD) established by the Mississippi State Board of Education policy (Mississippi Department of Education, 2011) are as follows:
1) Advanced—Students at the advanced level consistently perform in a manner clearly beyond what is required to be successful in a more advanced course in the content area; 2) Proficient—Students at the proficient level demonstrate solid academic performance and mastery of the knowledge and skills required for success in a more advanced course in the content area; 3) Basic—Students at the basic level demonstrate partial mastery of the knowledge and skills in a course and may experience difficulty in a more advanced course in the content area; and 4) Minimal—Students at the minimal level are below basic and do not demonstrate mastery of the knowledge and skills required for success in the course in the content area (p. 7).

Participant Questionnaire

The instrument entitled Parent Questionnaire (see Appendix C) was used to collect data for the study. The number of instrument items was kept to the most essential so that participation would not be viewed as a burden. The instrument was designed by the researcher and consists of seven questions: the first two are related to the literature on the benefits of attending preschool and the remaining five allowed the researcher to retrieve information about parents’ level of school involvement and their beliefs regarding the effectiveness of their child’s preschool attendance on their achievement in later school years. The instrument also had space for a unique student ID number which was placed on each instrument prior to distribution.

Research Question 1 was supported by Items 1 and 2 in the instrument and by archival data. This question required that preschool attendance or non-attendance be established and compared those who attended with those who did not attend on several
academic measures. Research Question 2 sought to determine differences among preschool attendees and non-attendees based on students’ retention history, socioeconomic status, and gender, and was supported by Items 1-2 and archival data. Research Question 3 was supported by Items 1 and 2, which detailed the type of preschool program the participant attended, and by Item 6, which asked parents to report their beliefs about the effectiveness of their children’s preschool program on reading and math readiness. Research Question 4 was supported by archival achievement data and by Items 6 regarding parents’ beliefs about the relationship between preschool attendance and reading and math achievement. Research Question 5 was supported by Items 6 and 7, which considered the parents’ beliefs about the overall effectiveness of preschool in preparing their children for formal schooling and the impact on their children’s subsequent academic and later-in-life success. Research Question 6 was supported by Items 3-5 regarding the degree to which parents were involved in their children’s preschool and K-12 school experience. The items for Part I consisted of two questions that addressed whether or not a child attended preschool and, if so, which type. The options for preschool attendance at age 3 were as follows: Public school pre-kindergarten, Head Start, Private Preschool, and No Preschool. The options for preschool at age 4 were the same as options for age 3. Items 1 and 2 were included to reduce confusion for parents when considering preschool age. Only data for students at age 4 was used. Part II consisted of five items related to the parents’ reported level of support and parental involvement and their beliefs regarding the relationship between their children’s preschool attendance and their academic performance in subsequent years. Items 3 and 4 in the instrument specifically addressed the frequency in which parents
reported they received information on ways to help their child in school (Item 3) and the
frequency that parents reported they volunteered at their child’s school (Item 4). The five
grade bands for Items 3 and 4 were preschool, kindergarten through second grades, third
through fifth grades, sixth through eighth grades, and ninth through twelfth grades. Item 5 in the instrument asked parents to rate their level of agreement with the statement
regarding often helping their children with homework across four different grade bands
which included kindergarten through second grades, third through fifth grades, sixth
through eighth grades, and ninth through twelfth grades. Item 6 and 7 asked parents to
describe how effective their children’s attendance and participation in preschool was in
preparing them for academic achievement in reading and math and their future across
five levels including kindergarten through second grades, third through fifth grades, sixth
through eighth grades, ninth through twelfth grades, and his/her future employment. The
five options to address Items 3-7 rating the parents’ agreements to statements regarding
school and parental involvement, and effectiveness of preschool in preparing their
children for formal school entry at different grade levels were strongly disagree, disagree,
neutral, agree, and strongly agree.

After permission was granted by the selected school districts and Institutional
Review Board (IRB) approval was obtained, the questionnaire was distributed by the
school counselor to the parents of seniors in the various school districts. Once the
counselor received each signed parental consent letter and parent questionnaire, he/she
collected archival data from the student’s cumulative records. The school counselor then
de-identified all data collected before to providing it to the researcher, thus ensuring that
the researcher would not know the identities of any students. The researcher then analyzed the data using quantitative statistical models.

In order to strengthen the validity of the participant questionnaire, a panel of experts reviewed it and made comments/suggestions using the Expert Panel Review Form (Appendix D). The panel consisted of professionals with experience with and specific knowledge of the different types of early childhood education programs and their curricula. The panel was comprised of a retired state superintendent, a curriculum director, and a preschool director and served to ensure that the parent questionnaire would elicit pertinent information verifying preschool attendance, type of preschool program, and parents’ beliefs regarding the effectiveness of the program. The panel members’ recommendations were used to make modifications to finalize the instrument for use in the study.

Data Collection Procedures

The researcher secured the permission of the superintendent in each school district in which the study took place. Once this permission was obtained, the researcher submitted the research protocol to The University of Southern Mississippi’s Institutional Review Board for approval to proceed with this study. Once approval was granted, the researcher met with the high school principal and counselor at each participating high school to explain the purpose of the study and the process for distributing and collecting questionnaires and subsequently gathering archival data. The counselor was the individual who collected the returned instruments and compiled the related archival data on behalf of the researcher.
The parent questionnaire, informed consent document, a consent form, and a pre-addressed stamped envelope were provided to each parent. The parent consent information and the parent consent letter and signature form are provided as Appendix E and Appendix F respectively. The school counselor coded each parent questionnaire with unique ID numbers from the data chart. No student’s name appeared on a questionnaire. The match between the code and the student’s name was known only by the designated school counselor. For those students whose parents returned the signed consent form and completed questionnaire, the counselor matched the individual unique ID number to the appropriate student’s achievement, retention, socioeconomic, and gender information in the data chart. The school counselor de-identified or removed all names from the file prior to delivery to the researcher.

The parental consent document provided parents information relating to the voluntary nature of this study and assured them that there would not be negative repercussions for them or their child if they chose to decline participation or withdraw from the study. It was further explained that the unique student ID number, its use, and the fact that the student’s identity would not be revealed to the researcher. It was also explained that the role of the designated school counselor was to ensure the anonymity of the parent, including during the separating of the signed consent forms from the questionnaires. The parent participants were informed that returning the signed consent form and completing the questionnaire would indicate that they did agree to participate in the study. After these documents were received by the counselor, he/she collected the archival data from the students’ cumulative records and posted in the data file.
Upon completion of the questionnaire, parents had two options for returning the instrument and consent: 1) mailed it to the counselor in the pre-addressed, stamped envelope provided in the packet or 2) allowed their child to return the sealed instrument to the locked box at school. During data collection, all data was kept in a locked file cabinet in the office of the designated school counselor. Once data for students was transferred to a data form and then de-identified by the counselor, so that the data form included only the unique student ID numbers, the data files were provided to the researcher. The signed parental consents were retained by each school’s counselor and remained in a locked cabinet until the conclusion of the study. At that point, each counselor was notified that all signed consents would be destroyed by shredding. All questionnaires and data files, both hard-copy and electronic, including those held by the designated school counselor and the researcher, were destroyed by the researcher upon completion of the study. Raw, de-identified student-level data and questionnaire responses were viewed solely by the researcher and members of the researcher’s committee. Neither the researcher nor committee members had access to the identities of any students.

High school counselors selected to receive and process participant responses received written guidance and training from the researcher on how to label and distribute the parent questionnaires and consent forms, as well as training on the process for collecting and properly securing returned instruments. The researcher also explained the processes for matching student data to the unique student ID number on the instrument. The researcher provided all materials needed for the training. The researcher further explained the informed participation guidance and processes to the counselors, including
the fact that their own participation in this study was voluntary and greatly appreciated and they could withdraw at any time without consequence. After the training, each counselor was provided with a consent form that included information about the voluntary nature of their participation, an overview of the training that was provided to them, information about the reward and the rationale behind it, and a place for their signatures if they chose to participate. Each counselor who consented to assist the researcher received a $35 gift card upon the researcher’s receipt of the requested data, as explained in the training. The letter to the counselors and the training agenda are attached as Appendix G.

Data collection in this study focused on those students whose credits make them eligible to be seniors during the 2015-2016 school year. This group will first be divided into two categories: attended a preschool program or did not attend preschool at age 4. The former group is subdivided into seniors who attended public school pre-kindergarten, Head Start, or private preschool. Archival data for students whose parents respond to the survey was gathered from the cumulative records of high school seniors who were currently enrolled in each participating high school by the school counselor after parent consent was received. Data pertaining to the socioeconomic status was retrieved from the food services coordinator by the school counselor.

Data charts developed by the researcher were provided to each school district. The data chart was created to assist the researcher in streamlining the data-capturing process for the high schools in the study. As was noted previously, the fields for these charts were only populated with data for seniors whose parents consented to participate in the study. The chart included archival data such as student’s name, student’s ID number,
retention history, gender, lunch status, 3rd grade MCT scores, English II and Algebra I SATP scores, latest ACT composite score, and preschool attendance and type. The school lunch status was obtained to determine the socioeconomic status of the participants. The categories will include free/reduced lunch or paid lunch. Retention history included the grade(s) in which a participant was retained. The data charts were completed by the school counselor. In order to preserve confidentiality, the “Student’s Name” column was removed or contents deleted from fields in the file by the counselor, which only left the unique student ID numbers assigned by the district, used to linked the archival data in the chart to the matching number on completed parent questionnaire. After compilation and de-identification of the data, each counselor returned the requested information (according to the district’s protocol) to the researcher. Prior to analyses, the researcher grouped responses by individual school.

**School Counselor Training**

High school counselors were chosen from volunteers or appointed by the principal. Each counselor at each school received a $35 gift card as a reward for their assistance during the data collection phase of this study. The researcher informed the counselor in writing that the reward was not dependent upon the number of parents who responded to the parent questionnaire, and that parents were not to be coerced into participation.

*Labeling and distribution of parent documents.* The designated school counselor at each school informed the researcher of the number of students in their senior class and chose the unique identification number ranges. The researcher then pre-numbered the charts for each school with the counselor’s chosen student ID ranges and provided both
digital and printed copies of these data charts. Once the counselor received the pre-numbered chart, he/she entered the names of the seniors into the “Student’s Name” field. Next, the researcher assembled all required documents into packets in preparation for mailing. Each mailing packet included: a pre-numbered parent questionnaire, an informed consent document, a consent signature form, and a pre-addressed stamped envelope for returning the signed consent form and the questionnaire to the counselor. The researcher provided all assembled packets. Finally, the counselor matched the student ID number on the parent documents to the names and ID numbers on the data chart and distributed the packets to parents of all seniors. In the event that a parent had more than one senior, he/she was provided a separate questionnaire for each child.

*Collecting and properly securing returned instruments.* Parents were provided written directions in the informed consent information document. The process for returning the signed consent form and questionnaire to the counselor in the sealed instrument one of two ways was explained. Parents were instructed to place documents into the provided pre-addressed stamped envelope and seal it before returning. A lock box was provided to each school and placed in a location designated by the counselor if parents chose this option. A pre-addressed stamped envelope was provided if parents chose to mail their instrument and consent back to the counselor.

After retrieving all returned envelopes, the counselor separated the signed parental consent forms from the parent questionnaires. They were placed into the appropriate envelope labeled either “Parent Consent: Counselor Keeps” or “Parent Questionnaires: Return to Researcher”. Next, the student ID number on the returned questionnaire was matched to the ID number and name in the first two columns on the
At this time, the counselor highlighted and marked a “Y” under the “Consent Received” column on the chart for all returned instruments. Then the student data was collected from cumulative folders and other sources and recorded in the appropriate fields in the data chart. This process was repeated for every parent instrument received. At the end of the data collection phase, the counselor ensured that all required data that was available were included for all students whose parents consented to participate in the study. Any student without parental consent had the fields corresponding to their names left blank in the data chart. Lastly, de-identifying the data by deleting the column containing the students’ names was conducted. Only columns containing the student’s unique ID number, gender, student retention history, free/reduced or paid lunch status, 3rd grade MCT reading and math scores, English II and Algebra I SATP2 scores, and ACT composite scores remained. Finally, the counselor provided the data chart and the parent questionnaires in the envelope provided to the researcher. The envelope containing the signed parental consents was retained by the counselor at each school until notified by the researcher to destroy them.

Data Analysis

Descriptive statistics, such as mean scores, standard deviations, frequencies, and correlations were conducted and allowed the researcher to analyze and summarize quantitative data. Charts, tables, and graphs were used to present data in an organized manner.

A correlational matrix was run for the five variables in Research Question 1 and the related Hypothesis 1 to determine levels of correlation among the variables. The researcher employed a multivariate analysis of variance (MANOVA). For Research
Question 2 and related Hypothesis 2, the study employed multiple regression on models that emerged from analysis of Research Question 1. For Research Question 3 and the related Hypothesis 3, a correlational matrix was conducted on the two variables in order to determine levels of correlation among the variables. The researcher then employed a multiple analysis of variance (MANOVA). For Research Question 4 and related Hypothesis 4, the study employed multiple regression on models that emerge from analysis of Research Question 1. Research Questions 5 and 6 employed descriptive statistics, including mean and standard deviation.

Summary

In Chapter III, the researcher presented the research design, research questions, participants, and the instruments to be used in this study. The questionnaire was developed to determine whether seniors attended preschool and if so, the type of program. The study further examined the beliefs of parents about the relationship between their children’s preschool attendance and their performance on multiple academic measures. There are many debates in early childhood education about which type of preschool program yields better, longer-lasting results when the children enter their formal school careers. However, educators appear to agree that early exposure to a high-quality preschool program of any type is beneficial for children. Being mindful of this, the researcher in this study examined high school seniors’ student assessment data in third grade and high school, along with retention history, ACT, socioeconomic status, and gender, in relation to their preschool attendance and their parents’ beliefs regarding their experiences.
CHAPTER IV

RESULTS

The purpose of this study was to explore the relationship between preschool attendance and student academic achievement throughout formal schooling. This research was conducted to determine whether differences exist in the academic achievement of high school seniors who participated in a preschool program with those seniors who did not. The study also examined the beliefs of parents of preschool attendees about the impact of preschool on their children’s preparation for formal school success using survey methodology. Multiple linear regression analysis and MANOVA were utilized to determine statistical relationships between the study variables. Participants’ demographic data, as well as, the means and standard deviations for the variables in this study are summarized in this chapter.

Six high schools in six different Mississippi school districts consented to participate in this research. Five schools actually returned data and participated. Table 3 shows the enrollment of the 2015-16 senior classes.

Table 3

2015-16 Senior Class Enrollments by School

<table>
<thead>
<tr>
<th>School ID</th>
<th>Senior Class Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>142</td>
</tr>
<tr>
<td>2</td>
<td>61</td>
</tr>
<tr>
<td>3</td>
<td>85</td>
</tr>
<tr>
<td>4</td>
<td>54</td>
</tr>
</tbody>
</table>
Table 3 (continued).

<table>
<thead>
<tr>
<th>School ID</th>
<th>Senior Class Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>143</td>
</tr>
<tr>
<td>6</td>
<td>252</td>
</tr>
</tbody>
</table>

This study examined the beliefs of parents of preschool attendees about the impact of preschool on their children’s formal school success and was collected via a seven-item parent questionnaire. Most items contained subsets of items. All parents of 2015-2016 seniors in the consenting schools received a questionnaire. Completed parent questionnaires and signed parental consent forms were returned to the counselor then retrieved the archival demographic and testing data from each student’s record and inserted this information into a data chart provided by the researcher. Student names were removed and only the unique student identification number remained to link the parent questionnaire to the de-identified demographic and test data.

Seven hundred twenty-eight parent questionnaires and consents were provided to the six schools that consented to participate. The counselor at School 5 did not distribute 143 of the parent documents. Of the 594 distributed, 185 parent questionnaires were returned for a return rate of 31.1%. The questionnaires returned without parental consent were retained by the counselor and excluded from the study. Items with more than one response selected were excluded from the study. SPSS was utilized to analyze the data.
Descriptive Analyses

Descriptive statistics, including mean scores, standard deviations, and frequencies were calculated for all of the research variables. These results are presented first. The results relating to the analysis of the research questions follow.

The variables for this study included preschool experience type, retention history of participants, socioeconomic status, and gender. Additional variables included parents’ reports of their beliefs about the impact of preschool on reading and math achievement, the students’ archived third grade MCT Reading and Math scores, English II and Algebra I SATP2 scores, and ACT composite scores.

Table 4 provides results of descriptive analysis of each of the following variables for the 2015-2016 high school seniors whose parents consented to participate in the student: preschool attendance by type, retention history, socioeconomic status, and gender. Of the 183 respondents, 80.9% of them attended some type of preschool during the year preceding kindergarten entrance while 9.1% of them did not. More specifically, 15.8% attended a public school preschool, or pre-k, program, 52.5% attended Head Start while 12.6% attended a private preschool program. Retention data revealed that 10.9% of the study participants were retained at least once during their P-12 schooling. No retention data was provided for two participants. Information regarding the socioeconomic status of students revealed that 80.3% were eligible for free and/or reduced lunch and 19.1% did not qualify and/or paid full price. No socioeconomic data was available for one of the subjects. Males made up 45.9% of the participant population while females accounted for 53.6% of the seniors. When evaluating Table 4, trends regarding the data emerge. More participants attended preschool than did not. When
considering preschool type, more participants attended Head Start than did public and private preschool. More female subjects than males were included in the study. Two of the six schools in the study did not collect socioeconomic information on families due to their participation in the community provision program. This grant program that schools provide allows every student in the district to eat free breakfast and lunch in the district.

Table 4

*Frequencies and Percentages of Demographics of 2015-2016 Seniors*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preschool Attendance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public School</td>
<td>29</td>
<td>15.8</td>
</tr>
<tr>
<td>Head Start</td>
<td>96</td>
<td>52.5</td>
</tr>
<tr>
<td>Private Preschool</td>
<td>23</td>
<td>12.6</td>
</tr>
<tr>
<td>No Preschool</td>
<td>35</td>
<td>19.1</td>
</tr>
<tr>
<td>Retention History</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retained</td>
<td>20</td>
<td>10.9</td>
</tr>
<tr>
<td>Not Retained</td>
<td>161</td>
<td>88.0</td>
</tr>
<tr>
<td>Not reported</td>
<td>2</td>
<td>1.1</td>
</tr>
<tr>
<td>Socioeconomic Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Free/Reduced</td>
<td>147</td>
<td>80.3</td>
</tr>
<tr>
<td>Paid</td>
<td>35</td>
<td>19.1</td>
</tr>
</tbody>
</table>
Table 4 (continued).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Reported</td>
<td>1</td>
<td>.5</td>
</tr>
</tbody>
</table>

Gender

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>84</td>
<td>45.9</td>
</tr>
<tr>
<td>Female</td>
<td>98</td>
<td>53.6</td>
</tr>
<tr>
<td>Not Reported</td>
<td>1</td>
<td>.5</td>
</tr>
</tbody>
</table>

Table 5 provides descriptive statistics relating to the mean 2005-2006 third grade MCT reading and math scores, SATP2 English II and Algebra I scores, and the composite ACT scores along with the standard deviations, based on preschool attendance. Proficiency on the 2007 third grade MCT in reading was 452 and above and for math students had to score 440 and above. During the 2006-2007 testing year, students in grades 3 through 8 were not required to attain a minimum score for promotion to the next grade. However, for high school students taking the end-of-course English II SATP2 and Algebra I SATP2, a minimum passing score of 650 were required for each test. The mean scores for the third-grade reading and math MCT, English II and Algebra I SATP2, and the ACT are provided in Table 5.
Table 5

*Descriptive Group Statistics Based on Preschool Type*

<table>
<thead>
<tr>
<th>Group</th>
<th>3rd Grade MCT</th>
<th>Math</th>
<th>SATP2 English II</th>
<th>SATP2 Algebra I</th>
<th>ACT composite</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Public School Preschool</strong></td>
<td>24</td>
<td>24</td>
<td>27</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Reading</td>
<td>488.08</td>
<td>500.21</td>
<td>651.74</td>
<td>659.80</td>
<td>16.24</td>
</tr>
<tr>
<td>Head Start</td>
<td>473.04</td>
<td>461.78</td>
<td>654.39</td>
<td>656.58</td>
<td>16.41</td>
</tr>
<tr>
<td>Private Preschool</td>
<td>503.11</td>
<td>495.11</td>
<td>654.38</td>
<td>659.27</td>
<td></td>
</tr>
<tr>
<td>No Preschool</td>
<td>493.73</td>
<td>478.67</td>
<td>653.56</td>
<td>659.19</td>
<td></td>
</tr>
<tr>
<td><strong>Private Preschool</strong></td>
<td>18</td>
<td>18</td>
<td>21</td>
<td>22</td>
<td>32</td>
</tr>
<tr>
<td><strong>No Preschool</strong></td>
<td>33</td>
<td>33</td>
<td>34</td>
<td>34</td>
<td></td>
</tr>
</tbody>
</table>
Table 5 (continued).

<table>
<thead>
<tr>
<th>Group</th>
<th>$n$</th>
<th>$M$</th>
<th>$SD$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Preschool</td>
<td>23</td>
<td>18.30</td>
<td>4.02</td>
</tr>
<tr>
<td>No Preschool</td>
<td>31</td>
<td>18.26</td>
<td>3.17</td>
</tr>
</tbody>
</table>

Descriptive Statistics for Parent Questionnaire

Part I of the parent questionnaire provided data pertaining to the age of preschool attendance, as well as, the type of preschool program in which their child participated. The researcher asked specific ages in Questions 1 and 2 (ages 3 and 4, respectively) so as to minimize confusion over what was meant by “preschool.” At each age, parents were asked to choose from one of the four options: Public Preschool Pre-K, Head Start, Private Preschool, or Did Not Attend Preschool. Only data pertaining to age 4 were included in the analyses for the purpose of this study. Table 4 provides the frequencies and percentages of types of preschools attended by high school seniors at age 4.

Part II of the parent questionnaire assessed parents’ beliefs regarding their child’s preschool experiences. Questions 3-5 relate to the parental beliefs with regard to the impact of preschool experience and parental involvement in their child’s school career. The questionnaire is an instrument that utilizes a five-point Likert-type scale: Strongly Disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, and Strongly Agree = 5. Descriptives include a frequency distribution of parental responses.

Question 3 asked that parents rate their beliefs concerning the level of communication between the preschool and home. More parents reported that schools frequently provided helpful information when their children attended kindergarten
through second grades (66.7%) than when they attended preschool (65.0%), third through fifth (61.8%), sixth through eighth (46.5%) and ninth through twelfth (41.5%). The frequency and percentages relating to the degree to which parents of each preschool type believed that schools provided helpful information is included in Table 6.

Table 6

_Frequencies and Percentages of Parental Reports of Frequency of School-to-Home Communication_

<table>
<thead>
<tr>
<th>Parent questionnaire items</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q3. My child’s school frequently provided information about ways to help my child when he/she attended:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3a. Preschool</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 (strongly disagree)</td>
<td>3</td>
<td>1.6</td>
</tr>
<tr>
<td>2 (disagree)</td>
<td>6</td>
<td>3.3</td>
</tr>
<tr>
<td>3 (neutral)</td>
<td>18</td>
<td>9.8</td>
</tr>
<tr>
<td>4 (agree)</td>
<td>67</td>
<td>36.6</td>
</tr>
<tr>
<td>5 (strongly agree)</td>
<td>52</td>
<td>28.4</td>
</tr>
<tr>
<td>3b. K-2nd grades</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 (strongly disagree)</td>
<td>3</td>
<td>1.6</td>
</tr>
<tr>
<td>2 (disagree)</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>3 (neutral)</td>
<td>21</td>
<td>11.5</td>
</tr>
<tr>
<td>4 (agree)</td>
<td>66</td>
<td>36.1</td>
</tr>
</tbody>
</table>
Table 6 (continued).

<table>
<thead>
<tr>
<th>Parent questionnaire items</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>5  (strongly agree)</td>
<td>56</td>
<td>30.6</td>
</tr>
</tbody>
</table>

3c. 3rd – 5th grades

| 1  (strongly disagree)     | 5         | 2.7     |
| 2  (disagree)              | 7         | 3.8     |
| 3  (neutral)               | 22        | 12.0    |
| 4  (agree)                 | 81        | 44.3    |
| 5  (strongly agree)        | 32        | 17.5    |

3d. 6th – 8th grades

| 1  (strongly disagree)     | 12        | 6.6     |
| 2  (disagree)              | 21        | 11.5    |
| 3  (neutral)               | 29        | 15.8    |
| 4  (agree)                 | 66        | 36.1    |
| 5  (strongly agree)        | 19        | 10.4    |

3e. 9th – 12th grades

| 1  (strongly disagree)     | 19        | 10.4    |
| 2  (disagree)              | 19        | 10.4    |
| 3  (neutral)               | 32        | 17.5    |
| 4  (agree)                 | 59        | 32.2    |
| 5  (strongly disagree)     | 17        | 9.3     |
Question 4 of the parent questionnaire addressed the frequency of parental involvement at school (P-12) during their child’s attendance. Parents agreed (agree and strongly agree) that they volunteered more frequently at school when their child attended preschool (53.0%) than at Kindergarten through second grades (47.5%), third through fifth grades (32.3%), sixth through eighth grades (10.2%), and at the high school level (16.4%). Table 7 displays the frequency distribution of the frequency of parental involvement through volunteering at various grade levels.

Table 7

*Frequencies and Percentages of Parental Reports of Frequency of Volunteering*

<table>
<thead>
<tr>
<th>Parent questionnaire items</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q4. I frequently volunteered at my child’s school when he/she attended:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4a. Preschool</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 (strongly disagree)</td>
<td>11</td>
<td>6.0</td>
</tr>
<tr>
<td>2 (disagree)</td>
<td>17</td>
<td>9.3</td>
</tr>
<tr>
<td>3 (neutral)</td>
<td>20</td>
<td>10.9</td>
</tr>
<tr>
<td>4 (agree)</td>
<td>38</td>
<td>20.8</td>
</tr>
<tr>
<td>5 (strongly agree)</td>
<td>59</td>
<td>32.2</td>
</tr>
<tr>
<td>4b. K-2nd grades</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 (strongly disagree)</td>
<td>13</td>
<td>7.1</td>
</tr>
<tr>
<td>2 (disagree)</td>
<td>20</td>
<td>10.9</td>
</tr>
<tr>
<td>3 (neutral)</td>
<td>26</td>
<td>14.2</td>
</tr>
<tr>
<td>Parent questionnaire items</td>
<td>Frequency</td>
<td>Percent</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-----------</td>
<td>---------</td>
</tr>
<tr>
<td>4 (agree)</td>
<td>43</td>
<td>23.5</td>
</tr>
<tr>
<td>5 (strongly agree)</td>
<td>44</td>
<td>24.0</td>
</tr>
<tr>
<td>4c. 3rd – 5th grades</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 (strongly disagree)</td>
<td>17</td>
<td>9.3</td>
</tr>
<tr>
<td>2 (disagree)</td>
<td>37</td>
<td>20.2</td>
</tr>
<tr>
<td>3 (neutral)</td>
<td>33</td>
<td>18.0</td>
</tr>
<tr>
<td>4 (agree)</td>
<td>46</td>
<td>25.1</td>
</tr>
<tr>
<td>5 (strongly agree)</td>
<td>13</td>
<td>7.1</td>
</tr>
<tr>
<td>4d. 6th – 8th grades</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 (strongly disagree)</td>
<td>27</td>
<td>14.8</td>
</tr>
<tr>
<td>2 (disagree)</td>
<td>49</td>
<td>26.8</td>
</tr>
<tr>
<td>3 (neutral)</td>
<td>33</td>
<td>18.0</td>
</tr>
<tr>
<td>4 (agree)</td>
<td>31</td>
<td>16.9</td>
</tr>
<tr>
<td>5 (strongly agree)</td>
<td>6</td>
<td>3.3</td>
</tr>
<tr>
<td>4e. 9th – 12th grades</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 (strongly disagree)</td>
<td>37</td>
<td>20.2</td>
</tr>
<tr>
<td>2 (disagree)</td>
<td>42</td>
<td>23.2</td>
</tr>
<tr>
<td>3 (neutral)</td>
<td>37</td>
<td>20.2</td>
</tr>
<tr>
<td>4 (agree)</td>
<td>23</td>
<td>12.6</td>
</tr>
<tr>
<td>5 (strongly agree)</td>
<td>7</td>
<td>3.8</td>
</tr>
</tbody>
</table>
Question 5 on the parent questionnaire addressed the frequency that parents of public preschool, Head Start, and private preschool attendees helped their children with homework during their P-12 schooling. The questionnaire results show that more parents reported that they often helped their children with homework when their child attended kindergarten through second grades (73.3%) than when they attended grades three through five (67.8%), grades sixth through eighth (43.7%), and grades nine through twelve (30.6%). The frequency distribution of parental reports of homework assistance is in Table 8.

Table 8

*Frequencies and Percentages of Parental Reports of Help with Homework*

<table>
<thead>
<tr>
<th>Parent questionnaire items</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q5. I often helped my child(ren) with homework when they were in:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5a. K – 2&lt;sup&gt;nd&lt;/sup&gt; grades</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 (strongly disagree)</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>2 (disagree)</td>
<td>3</td>
<td>1.6</td>
</tr>
<tr>
<td>3 (neutral)</td>
<td>9</td>
<td>4.9</td>
</tr>
<tr>
<td>4 (agree)</td>
<td>42</td>
<td>23.0</td>
</tr>
<tr>
<td>5 (strongly agree)</td>
<td>92</td>
<td>50.3</td>
</tr>
<tr>
<td>5b. 3&lt;sup&gt;rd&lt;/sup&gt; – 5&lt;sup&gt;th&lt;/sup&gt; grades</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 (strongly disagree)</td>
<td>9</td>
<td>4.9</td>
</tr>
<tr>
<td>2 (disagree)</td>
<td>6</td>
<td>3.3</td>
</tr>
</tbody>
</table>
Table 8 (continued).

<table>
<thead>
<tr>
<th>Parent questionnaire items</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 (neutral)</td>
<td>8</td>
<td>34.4</td>
</tr>
<tr>
<td>4 (agree)</td>
<td>54</td>
<td>29.5</td>
</tr>
<tr>
<td>5 (strongly agree)</td>
<td>70</td>
<td>38.3</td>
</tr>
</tbody>
</table>

5c. 6\textsuperscript{th} – 8\textsuperscript{th} grades

| 1 (strongly disagree)      | 20        | 10.9    |
| 2 (disagree)               | 26        | 14.2    |
| 3 (neutral)                | 21        | 11.5    |
| 4 (agree)                  | 45        | 24.6    |
| 5 (strongly agree)         | 35        | 19.1    |

5d. 9\textsuperscript{th} – 12\textsuperscript{th} grades

| 1 (strongly disagree)      | 30        | 16.4    |
| 2 (disagree)               | 27        | 14.8    |
| 3 (neutral)                | 33        | 18.0    |
| 4 (agree)                  | 30        | 16.4    |
| 5 (strongly agree)         | 26        | 14.2    |

Descriptive statistics for Questions 6 and 7 of the parent instrument will be addressed in detail later in this chapter in the “Research Questions” section.

*Research Questions*
Research question 1. Are there differences among high school seniors, based on preschool experience (Head Start, public school pre-kindergarten, private preschool, and no preschool), who attended preschool and those who did not attend preschool on the following academic measures: (a) third grade MCT in Reading, (b) third grade MCT in Math, (c) English SATP2 test, (d) Algebra I SATP2 test, and (e) ACT composite score?

Hypothesis 1 associated with Research Question 1 stated: There are differences among high school seniors, based on preschool experience (Head Start, public school pre-kindergarten, private preschool, and no preschool), on the following academic measures:

a) Third grade Mississippi Curriculum Tests (MCT) in Reading; b) Third grade Mississippi Curriculum Tests (MCT); c) English II Subject Area Testing Program, 2nd Edition (SATP2) test; d) Algebra I Subject Area Testing Program, 2nd Edition (SATP2) test; and e) ACT composite score. Archival test scores were utilized in this analysis.

Third grade MCT Reading and Math scores, English II and Algebra I SATP2 test scores, and ACT composite scores were the dependent variables used to investigate Research Question 1. Preschool was the dichotomous, (preschool – yes, preschool – no) as an independent variable. MANOVA was conducted to determine the statistical significance of the results. The overall model showed no significant differences among high school seniors on academic measures based on the type of preschool experience, $F(15,387) = 1.55$, $p = .086$. Therefore, the hypothesis was not supported by data analysis. However, the model did approach significance, and follow-up ANOVAs were performed on individual variables and a significant difference between preschool attendance and composite ACT score was indicated, $F(3,131) = 2.79$, $p = .043$. 
Research question 2. Are there differences among these academic performance measures based on student’s retention history, socioeconomic status, gender, or the particular type of preschool program that a student attended? The hypothesis related to Research Question 2 states: There are differences among these academic performance measures by group based on students’ retention history, socioeconomic status, gender, or the particular type of preschool program that a student attended. Third grade MCT reading and math scores, English II and Algebra I SATP2 test scores, and ACT composite scores (dependent variables) were the archival data used to measure academic performance and to investigate question two and related hypothesis. A multiple regression was used to determine differences among the measures of student achievement and the students’ retention history, socioeconomic status, gender, and preschool type attended. A multiple regression was run to determine whether participants’ retention history, gender, socioeconomic status, and preschool type would predict their performance on each dependent variable (MCT Reading, MCT Math, English II SATP2, Algebra I SATP2, and composite ACT scores) to test Hypothesis 2. A significant regression equation was found when Algebra I SATP2 were used, $F(6,161) = 4.948, p < .001, R^2 = .156$. A student’s retention history was the only predictor found to be significant ($p < .001, \beta = .306$) in this model. A significant regression equation was also found when composite ACT scores were used as the dependent variable, $F(6,155) = 4.526, p< .001, R^2 = .149$. Both socioeconomic status and public preschool attendance were significant predictors of academic performance ($p = .001, \beta = .274$ and $p = .049, \beta = -.183$, respectively). Therefore, significant differences in Algebra I SATP2 and ACT performance based on retention rates, socioeconomic status, and preschool type were
found, therefore, the hypothesis was supported. The three remaining regression models with the dependent variables, MCT Reading, \( F(6,157) = 1.10, p = .366, R^2 = .040 \); MCT Math, \( F(6,157) = 1.43, p = .205, R^2 = .052 \); and English II SATP2, \( F(6.159) = 1.91, p = .083, R^2 = .067 \), were not statistically significant and did not support the hypothesis.

Research question 3. Among those seniors who attended preschool, are there differences in parents’ reports of their beliefs about the impact of preschool across the three preschool program types on the reading and math readiness of their children?

Hypothesis related to Research Question 3 stated: Among those seniors who attended preschool, there are differences in parents’ reports of their beliefs about the impact of preschool across the three preschool program types on the following attributes of their children: a) reading readiness and b) math readiness. Question 6 on the parent questionnaire addressed this research question and related hypothesis. A one-way ANOVA was conducted to determine whether beliefs of parents on the impact of preschool on reading readiness were different based on preschool type their children attended. A separate one-way ANOVA on math readiness was conducted as well. Preschool types were classified into three groups: public preschool, Head Start, and private preschool. All assumptions of the tests were met. This analysis revealed that no statistically significant differences in parents beliefs that preschool had an impact on reading readiness based on preschool type, \( F(2,141) = 1.894, p = .154 \). This analysis revealed that no statistically significant differences in parents beliefs that preschool had an impact on math readiness based on preschool type, \( F(2,141) = 1.669, p = .192 \).
therefore, this hypothesis was not supported. Table 9 displays descriptive statistics related to this analysis.

Table 9

Means and Standard Deviations of Parents’ Beliefs about Impact Preschool Type has on Reading and Math Readiness

<table>
<thead>
<tr>
<th>Group</th>
<th>Public Preschool</th>
<th>Head Start</th>
<th>Private Preschool</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Reading Readiness</td>
<td>29</td>
<td>4.45</td>
<td>.69</td>
</tr>
<tr>
<td>Math Readiness</td>
<td>29</td>
<td>4.41</td>
<td>.68</td>
</tr>
</tbody>
</table>

Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

Research question 4. Are parents’ reports of their beliefs about the impact of preschool on reading and math achievement related to the subsequent MCT Reading/Math and English II/Algebra I SATP2 scores of their children? Hypothesis 4 related to Research Question 4 stated: Parents’ reports of their beliefs about the impact of preschool on reading and math achievement are related to the subsequent MCT Reading/Math and English II/Algebra I SATP2 scores of their children. A Pearson correlation was run to assess the relationship between parents’ beliefs about preschool attendance impacting reading and subsequently reading performance on 3rd grade MCT Reading and English II SATP2 tests. There was a moderate positive correlation found to exist, \( r(151) = .347, p < .005 \). A Pearson correlation was also run to assess the
relationship between parents’ beliefs about the impact of preschool on math and subsequent performance on 3rd grade MCT Math and Algebra I SATP2 tests. There was a moderate positive correlation found to exist, \( r(153) = .314, p < .005 \). These results indicate that parental reports about the impact of preschool are positively related to reading and math achievement, thus supporting the hypothesis.

Descriptive statistics for variables in Research Questions 5 and 6 were computed and include the means and standard deviations.

*Research question 5. What are the reports of parents regarding their beliefs about the impact of preschool on the achievement of their children?* Questions 6 and 7 of the parent questionnaire addressed this research question. Question 6 addressed the parental beliefs regarding the effectiveness of preschool in preparing their children for reading and math success. Table 9 displays the means and standard deviations of parent reports which are based on the five-point Likert-type rating utilized in the parent questionnaire: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree. A higher mean score was indicative of more parental belief of the effectiveness of preschool in preparing children for reading and math success.

The means for the reading factors were all above 4 or Agree (4.25 by Head Start parents) to 4.61 by private preschool parents but less than 5 or Strongly Agree. Parents of children who attended private preschool agreed that their children’s preschool experience was very effective in preparing them for reading success with a score of 4.61, public preschool parents had a mean score of 4.45 and Head Start parents had a mean score of 4.25. The means for the math factors were also above 4 or Agree but below 5 or Strongly Agree, ranging from 4.16 (Head Start parents) to 4.52 (private preschool
Parents of children who attended private preschool agreed that their children’s preschool experience was very effective in preparing them for math success with a score of 4.61, public preschool parents had a mean score of 4.41 and Head Start parents had the lowest mean score of 4.16. Overall, parents of all types of preschoolers agreed that their children’s preschool experience was very effective in preparing them for success in both reading and math. Table 9 provides a listing of means and standard deviations of parental beliefs about the effectiveness of preschool in preparing their children for reading and math success.

Question 7 of the parent questionnaire examined parental beliefs that their child attending preschool was very effective in preparing them for schooling K-12 and future employment. Table 10 displays the means and standard deviations of parent reports which are based on the five-point Likert-type rating utilized in the parent questionnaire: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree. A higher mean score was indicative of more parental belief of the effectiveness of preschool in preparing children for achievement in kindergarten through second grades, third through fifth grades, sixth through eighth grades, and ninth through twelfth grades, and for future employment.

The mean parent rating for the effectiveness of preschool in preparing attendees for future success in academics and employment ranged from 3.39 (Neutral) to 4.65 (Agree). Parents response scores for the effectiveness of preschool in preparing children for success in kindergarten through second grades ranged from 4.39 (Head Start) to 4.59 (Public Preschool) to 4.65 (Private Preschool), all in the Agree range. Parent response scores on the effective preparation of preschool attendees for success in third through
fifth grades ranged from nearly 4 (3.96, Private Preschool) to 4.01 (Head Start) to 4.45 (Public Preschool). In the sixth through eighth-grade band, parent response scores ranged from mid-3 (Neutral) to just above Agree (4.17). Parent response scores for grades nine through twelve ranged from near mid-Neutral to Agree (Private Preschool 3.43, Head Start 3.90, Public Preschool 4.0). All parent response scores related to the effectiveness of preschool in preparing attendees for future employment were in the Neutral range (Private Preschool 3.39, Head Start 3.80, Public Preschool 3.90).

Parents of private preschoolers had the highest score for kindergarten through second grades which means that these parents reported their children’s preschool experience was very effective in preparing them for school success in those grades. The highest scores for third through fifth grades (4.45), sixth through eighth grades (4.17), and ninth through twelfth grades (4.0) were reported by public preschool parents who agreed that preschool was very effective in preparing their child for success, thus having the most impact. Conversely, more private preschool parents agreed less that their children’s preschool experience was very effective in preparing them for K-12 success. When considering employability, parents of public preschoolers scored highest (Neutral, 3.90). The means and standard deviations of parental beliefs about the effectiveness of preschool in preparing their children for K-12 and success in future employment are included in Table 10.
Table 10

Means and Standard Deviations for Parental Beliefs Regarding Effectiveness of
Preschool Preparation for K-12 Schooling and Future Employment

<table>
<thead>
<tr>
<th>Q7. Attending preschool was very effective in preparing my child for success in:</th>
<th>Public Preschool</th>
<th>Head Start</th>
<th>Private Preschool</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>K-2nd grades</td>
<td>29</td>
<td>4.59</td>
<td>.57</td>
</tr>
<tr>
<td>3rd – 5th grades</td>
<td>29</td>
<td>4.45</td>
<td>.57</td>
</tr>
<tr>
<td>6th – 8th grades</td>
<td>29</td>
<td>4.17</td>
<td>.71</td>
</tr>
<tr>
<td>9th – 12th grades</td>
<td>29</td>
<td>4.00</td>
<td>.89</td>
</tr>
<tr>
<td>Future employment</td>
<td>29</td>
<td>3.90</td>
<td>.98</td>
</tr>
</tbody>
</table>

Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

Research question 6. What are reports of parents regarding the degree to which they were involved in their children’s preschool and K-12 school experience? Questions 3, 4, and 5 of the parent questionnaire examined parental involvement during PK-12.

Question 3 asked about the frequency that the school provided information to parents on ways to help their children at home across five different grade bands: preschool, kindergarten through second grades, third through fifth grades, sixth through eighth grades and ninth through twelfth grades. The means ranged from 4.16 (Agree) while their children attended kindergarten through second grades to 3.25 (Neutral) during ninth through twelfth grades. Question 4 asked about the frequency in which parents volunteered at the school when their children attended school in the same five grade bands as in question 3. The means for parent reports regarding volunteering ranged from
Neutral (3.81) in preschool to Disagree (2.46) in grades nine through twelve. Question 5 asked whether parents often helped their children with homework when children attended school across four different grade bands: kindergarten through second grades, third through fifth grades, sixth through eighth grades and ninth through twelfth grades. The means for question 5 ranged from Agree (4.50) in kindergarten through second grades to disagree (2.97) in ninth through twelfth grades. Table 11 presents the means and standard deviations of parental involvement factors based on the reports of parents.

Table 11

Means and Standard Deviations for Parental Involvement Factors

<table>
<thead>
<tr>
<th></th>
<th>Q3. Frequent ways to help child</th>
<th>Q4. Frequently volunteered</th>
<th>Q5. Often helped with homework</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>$SD$</td>
<td>$M$</td>
</tr>
<tr>
<td>Preschool</td>
<td>4.08</td>
<td>.91</td>
<td>3.81</td>
</tr>
<tr>
<td>K- 2nd grades</td>
<td>4.16</td>
<td>.85</td>
<td>3.58</td>
</tr>
<tr>
<td>3rd – 5th grades</td>
<td>3.87</td>
<td>.92</td>
<td>3.01</td>
</tr>
<tr>
<td>6th – 8th grades</td>
<td>3.40</td>
<td>1.13</td>
<td>2.59</td>
</tr>
<tr>
<td>9th – 12th grades</td>
<td>3.25</td>
<td>1.21</td>
<td>2.46</td>
</tr>
</tbody>
</table>

Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

Summary

This study analyzed whether differences in academic performance existed among students in high school based on whether they attended preschool and the type of preschool attended. In addition, a qualitative component included parent questionnaires
which were administered to the parents of high school seniors. One hundred eighty-five instruments were returned with parental consents and included in this study. The responses of parents of seniors regarding preschool attendance as it related to the impact on reading and math performance throughout their children’s K-12 schooling and subsequent employment was included, as well as the reported parents’ involvement in school while their children attended. Archival results from each student’s third grade MCT reading, third grade MCT math, English II SATP2, Algebra I SATP2, and highest composite ACT score were used in the study. There was not a significant difference on either academic outcome measure among groups based on preschool type. In addition, data pertaining to each subject’s retention history, socioeconomic status, and gender was analyzed based on academic performance measures. Results indicated that there was a statistically significant difference in Algebra I SATP2 scores based on retention history. There were also statistically significant differences in ACT composite scores among groups based on socioeconomic status and on public preschool attendance. The data also showed there were no significant differences among third grade MCT reading, third grade MCT math, or English II SATP2 based on gender or preschool type.

An analysis of parent reports from questionnaires revealed that no statistically significant differences existed in parents’ beliefs that preschool had an impact on reading nor math readiness based on preschool type. The data also provided evidence that there was a significant relationship between parents’ beliefs regarding the impact of preschool on reading achievement and the subsequent achievement based on third grade MCT reading and the English II SATP2 tests. There was also a significant relationship
between parents’ beliefs regarding the impact of preschool on math achievement and the subsequent achievement based on third grade MCT math and Algebra I SATP2 scores.

Overall, parents of all types of preschoolers agreed that their children’s preschool experience was very effective in preparing them for success in both reading and math. Parents of private preschoolers had the highest score for kindergarten through second grades which means that these parents reported their children’s preschool experience was very effective in preparing them for school success in those grades. The highest scores for third through fifth grades, sixth through eighth grades, and ninth through twelfth grades were reported by public preschool parents who agreed that preschool was very effective in preparing their child for success, thus having the most impact. Conversely, more private preschool parents agreed the least that their children’s preschool experience was very effective in preparing them for K-12 success. When considering employability, parents of public preschoolers scored highest. This meant that parents of children who attended public preschool believed that preschool was effective in preparing their children for future employment. Parental involvement data revealed that as students progressed from third through twelfth grades parents reported receiving less information from schools about how to help their children. Parents also reported that more helpful information was by schools while their children attended kindergarten through second grades but less in preschool. When considering the frequency with which parents volunteered, data shows that on average parents disagreed that they frequently volunteered while their children attended grades six through twelve. The parental involvement data also revealed that parents reported that they were undecided about whether they frequently volunteered while their child attended preschool through twelfth
grades. Overall parents did not agree that they frequently volunteered. Parents agreed
that they helped their children with homework most often when they were in kindergarten
through fifth grades and less as their children progressed from sixth through twelfth
grades.
CHAPTER V
SUMMARY

The purpose of this study was to determine whether there were differences in the academic performance of high school seniors who participated in a preschool program of any kind compared to the performance of seniors who did not attend preschool. The archival third grade MCT reading and math scores, English II and Algebra I SATP2 scores, and composite ACT scores of the high school seniors were examined. The study further analyzed the difference among preschool groups with regard to gender, retention history, and socioeconomic status. Archival and demographic data were examined. In addition, the study examined the beliefs of parents of preschool attendees about the impact of preschool on their children’s formal school success. Responses from parent questionnaires provided quantitative data for this study. Responses regarding their beliefs about the impact of preschool on their children’s education and reports of their involvement in school during their children’s K-12 school attendance were examined.

This chapter provides a discussion of the major findings relative to each of the research questions and the limitations of the study. This chapter will also provide recommendations for policy and practice as well as recommendations for future research. A summary of this study will be presented at the end of this chapter.

Discussion of Major Findings

The parent questionnaire was completed by parents of the high school seniors whose data was used in this study. The instrument collected information concerning preschool attendance, the age of entry and type of preschool. Deidentified archival data (third grade MCT scores, SATP2 scores, and composite ACT scores) provided to the
researcher by the schools were linked to the parent questionnaires. The results are discussed according to the research questions addressed by this study.

Research Question 1

Are there differences among high school seniors, based on preschool experience (Head Start, public school pre-kindergarten, private preschool, and no preschool), who attended preschool and those who did not attend preschool on the following academic measures: (a) third grade MCT in Reading, (b) third grade MCT in Math, (c) English SATP2 test, (d) Algebra I SATP2 test, and (e) ACT composite score? Descriptive statistics revealed that private preschool attendees had the highest mean scale scores of all preschool groups in third grade MCT Reading. Those seniors who did not attend preschool scored next highest, with public preschool and Head Start being the lowest. Head Start was also the lowest scoring group on Algebra I SATP2. However, public school preschool attendees scored highest on third grade MCT math and Algebra I SATP2 than any other preschool type. Private preschool attendees, on average, scored highest on ACT than the other groups. Public school preschool students were the lowest scoring group in the study on the ACT. Based on the analysis in this present study, there was no significant difference in student performance on academic measures based on preschool experience. The literature review revealed studies that produced findings that both support and discredit the findings of this study. Lee and colleagues (2014) concluded that children attending pre-k scored higher than children attending Head Start but children who did not attend preschool scored lower than Head Start attendees. Conversely, Zhai et al, (2011) reported that there were no differences in academic outcomes when comparing children who attended Head Start with children who attended
other types early childhood education programs. When looking at persistence of preschool effects, follow-up studies conducted on participants of the Carolina Abecedarian Project found that participants had higher cognitive scores from toddler years to age 21 and they scored higher in reading and math tests of achievement from primary grades through young adulthood (Campbell & Ramey, 1994; Cunha & Heckman, 2009; Reynolds et al., 2011). Some studies even suggest that the benefits associated with preschool attendance fade out over time, becoming unnoticeable by second grade (Duncan & Magnuson, 2013; U. S. Department of Health and Human Services, 2010).

Conversely, other studies reported long-term impacts of attending preschool (Deming, 2008; Yoshikawa, 2013). With the large amount of literature supporting the findings of preschool advantage in academic outcomes and the seemingly large amount of research concluding there are no differences among preschool types based on academic measure, more research should be conducted utilizing stricter quality controls over teachers, curricula, and programming.

Research Question 2

Are there differences among these academic performance measures based on student’s retention history, socioeconomic status, gender, or the particular type of preschool program that a student attended? The results of this analysis allowed the researcher to conclude that a student’s retention history was the only one of the variables shown to be a significant predictor of Algebra I SATP2 scores. In addition, the analysis revealed that socioeconomic status and public preschool attendance were significant predictors of performance on the ACT. In a meta-analysis by Anderson and colleagues (2003), researchers found when retention rates were used in measuring cognitive ability,
participation in an early childhood program decreased rates of retention in later years. Temple and Reynolds (2007) conducted a follow-up study of the Chicago Child-Parent Center’s program and found that those participants who attended the model preschool program had a lower retention rate than those who did not attend the program. The majority of studies reviewed revealed that retentions among preschool participants were lower than their peers who did not attend preschool (Anderson et al., 2003; Copple et al., 2003; Deming, 2008; Gilliam & Zigler, 2000, 2004). However, prior work by Currie (2001) posed a contrasting finding that no statistically significant difference in retention rates existed among those children who did participate in preschool and those who did not.

Descriptive data revealed that 80.3% of the target population of this study would appear to be from low socioeconomic backgrounds. However, one of the schools in the study received a community provision grant which allows all the students in the district to eat free of charge, regardless of family income. A number of studies have reported findings that support the conclusion that the impact of socioeconomics on student success varies widely. The results of this study found that socioeconomic status was a significant predictor of student performance on the ACT. However, Gormley et al. (2005) reported that there were no statistically significant differences in benefits of preschool programs based on socioeconomic status. Magnuson, Ruhm, and Waldfogel (2007) reported the opposite in a study where they observed larger cognitive gains among children from disadvantaged backgrounds of low socioeconomic status. Interestingly, Heckman and his team (2011) conducted research that revealed that the racial and socioeconomic disparities narrowed substantially when effects for family were controlled.
Results of this study further revealed that preschool type, specifically public school preschool, was a statistically significant predictor of student performance on the ACT. This finding is consistent with research by Weiland and Yoshikawa (2013) which concluded that participation in Boston’s public school preschool positively impacted mathematics, literacy, and language skills. Additional studies found that public school preschool have a larger impact on kindergarten readiness (Huang et al., 2012; Magnuson et al., 2007). In another study (Lee et al., 2014), researchers found that children who attended public school pre-kindergarten programs scored higher in early reading than Head Start attendees. However, in the same study, data revealed no differences in any measures compared to children who attended other center-based programs (Lee et al., 2014)

Research Question 3

Among those seniors who attended preschool, are there differences in parents’ reports of their beliefs about the impact of preschool across the three preschool program types on the reading and math readiness of their children? The analysis of data revealed that no statistically significant differences exist in parental beliefs that preschool had an impact on their child’s reading or math readiness regardless of preschool type. One study by Galper et al. (1997) did consider the parent’s perspective. Parents were asked their views regarding their children’s abilities on academic tasks as well as sports and friends. The importance of academic tasks was rated highest over sports and friends, however, when asked to rate their children’s’ academic abilities, parents rated their performances lower than sports and friends (Galper et al., 1997). Overall, Galper and colleagues found that greater gains were experienced by children in Head Start when parental reports were
positive. Miller’s study (1986) pointed out that parental knowledge of their children’s true abilities was not well-known. This lack of knowledge on the parent’s part may have impacted their decisions to offer assistance with homework or visit the schools. With such limited data and research available concerning parental beliefs about preschool and its impact on their children’s academic future, more research in this area is definitely warranted. Results of this study and the previously cited study may be helpful in providing more insight concerning parental beliefs and perceptions about preschool.

Research Question 4

Are parents’ reports of their beliefs about the impact of preschool on reading and math achievement related to the subsequent MCT Reading/Math and English II/Algebra I SATP2 scores of their children? With the large amount of literature that exists about early childhood education programs, there were limited studies that considered the beliefs of parents about the academic abilities of their children. There was a moderate positive correlation found to exist between preschool math and reading skills and subsequently performance on third grade MCT reading and math and English II and Algebra I SATP tests. Results indicated that the more positive the parental reports were about the impact of preschool reading and preschool math, the higher the scores on 3rd MCT Reading and Math and the SATP2 tests. One study concerning accuracy of maternal beliefs was found during the literature review. Miller (1986) administered a Piaget test and an IQ test to mothers and their children in order to predict the academic success of their children. During the test, the mothers were required to respond as they thought their children would. Researchers found that due to the limited knowledge of their child’s abilities, mothers could only moderately predict their child’s success (Miller, 1986). A more
recent study investigating the relationship between parental involvement during the preschool years and the preliteracy skills of children was conducted and results were found to be positively correlated (Arnold et al., 2008). With limited research in this area, this study may provide additional data for subsequent, more in-depth studies.

Research Question 5

What are the reports of parents regarding their beliefs about the impact of preschool on the achievement of their children? Parents of public school preschool children were in highest agreement that their child attending preschool was very effective in preparing them for success in third through fifth grades, sixth through eighth grades, ninth through twelfth grades, and future employment. However, parents of private preschool participants had the highest mean score in kindergarten through second grades with public school preschool following next. Overall, private preschool parents were in the least agreement that their child attending preschool was very effective in preparing them for success in grades three through twelve and future employment. There was very limited research available in this area of preschool education. Miller’s study (1986), from the previous section, indirectly addressed the beliefs of parents regarding their child’s abilities. However, more research is needed in this area.

Research Question 6

What are reports of parents regarding the degree to which they were involved in their children’s preschool and K-12 school experience? This study revealed that as children got older parents reported less involvement with homework assistance, and volunteering at their child’s school. In addition, parents reported that schools provided less information about ways to help their child as they got older, which may contribute to
decreased parental assistance and involvement. When conducting the literature review, the research found very limited studies investigating the involvement of parents of preschool-aged children. The few that were found dated back to late 1990 and early 2000. Marcon (1999) found that increased parental involvement positively influenced early skill mastery in all areas. Another study by Taylor and Machida (1994) examined teacher ratings of the parents of Head Start children and found similar positive correlations between parent involvement and student achievement. Arnold et al. (2008) concluded that the more actively involved parents are in their child’s school and education, the greater their pre-literate performances.

Limitations

There were factors that limited the generalizability of the findings of this study. The districts in which this study was conducted were not clustered around the same area, however, all of the schools that responded were rural, county schools within a 75-mile radius. There was very little participation from the two city schools that had agreed to participate. This greatly reduced the study population and variability of data among participating school districts. In the case of one school, the parent questionnaires were just distributed to parents with no explanation as to what the documents were. Counselors were thoroughly trained after they agreed to participate in the study. It is important that each school counselor fully supports the research and is dedicated to assisting the researcher by actively distributing and collecting parent instruments. Counselors should be encouraged to send out reminders of deadlines for returning the instruments. Future study of this nature may be better served if the researcher is able to speak directly to the
population and explain the purpose and importance of the study prior to the counselor distributing the parent materials.

Two of the schools received a community provision grant which enables all students in the district to eat free breakfast and lunch, regardless of household income. This fact further limited the accuracy of the reported socioeconomic status data. Another limitation in sampling was that only the data for students whose parents returned a signed consent and a questionnaire could be included in the study. Even though safeguards were put in place to preserve anonymity, some parents may have been hesitant about participating in this study since their signed consent was returned with their questionnaire. Some participants may have felt it necessary to rate themselves differently for fear of ridicule. There were no reports of coercion or parents feeling that their privacy was violated.

Some students may have taken compensatory classes prior to taking the SATP2 Algebra I and/or English II, which may have resulted in skewed test scores. SATP2 tests were taken at different times during the high school career. The archival student data was provided to me by the school counselors. They had to pull the data from several sources and enter into the data file I provided them. There could have been an error in entering the data. The researcher assumed that the counselor provided accurate data. The parent questionnaire provided qualitative data about parental beliefs. Parent reports of their children’s preschool experiences over a decade ago may have rendered inaccurate recollections of past early childhood education.
Recommendations for Policy and Practice

This study was conducted to determine whether students who attended preschool prior to entering kindergarten performed differently than those who did not attend preschool on various academic measures. Several model early childhood education programs like the Chicago Child-Parent Center, the Abecedarian Program, and the Perry Preschool Project, emphasized the benefits of early intervention and highlighted the effects of such programs on reducing or eliminating educational gaps and improving the social standing of children who attend and their families (Cunha & Heckman, 2007; Currie, 2001; Heckman, 2006, 2011). These programs were implemented under strict guidelines and were monitored continuously in order to ensure quality program controls. To examine the connection between the quality of preschool programs and student outcomes on academic measures, a number of studies were conducted and the reviews were mixed. Peck and Bell (2014) reported that having more resources and positive interactions in preschool programs demonstrated minimal impact on academic outcomes. Gormley and his team (2010) also found that there were no statistically significant differences among students who attended public school preschool and Head Start on academic tasks. Conversely, other research findings have shown that attending high-quality early childhood education programs of varying types does positively impact academic achievement of students (Cresnoe, et al., 2010; Lee, et al., 2014; Yazejian, 2012). In order for quality programs to be developed and implemented, funding of such initiatives must be a priority. Workman, Griffith, and Atchison (2014) assert that the number of quality preschool programs is largely dependent on funding.
Results from this study are consistent with the mixed findings of the literature review. Differences in the academic performance of the participants who attended an early childhood education program may have been the result of differences in programming, curriculum, personnel, and the amount of parental involvement and perceptions. Parental involvement and perceptions were identified as major themes in this study. Research referenced in this study supported the assertion that the role of the parent is a critical attribute of a successful early childhood education program (Galper, Wigfield, & Seefeldt, 1997); and active parental involvement resulted in increased preschool skill development and more student positive behaviors (Marcon, 1999; Taylor & Machida, 1994).

Despite the differences in research findings, one major conclusion when considering preschool attendance is that there are benefits of attending some type of early childhood education when compared to not attending. Therefore, it would be practical to design and implement high-quality programs that employ highly qualified personnel who utilize quality material to create high-quality learning settings, in which parents are encouraged to be involved. The results of this study offer several implications for both policy and practice as they relate to early childhood education and student achievement. The proposed recommendations for policy and practice are proposed:

1. Invest substantially more into future generations through early childhood education. When investments are made in the futures of children then the outlook on education and society is drastically improved.

2. Provide more training for parents at all levels, K-12. Parental involvement is important with younger children as well as older ones. In an effort to keep
everyone involved, more parental training opportunities should be offered which may help improve involvement.

3. Expand funding to include training for teachers and staff in diverse preschool programs. Quality preschool programs produce quality students.

4. Local school districts should look closely at the demographics of the parents in their district. Through needs assessment, determine what resources and programs are needed to assist in pursuing higher educational goals. This would help them be able to help their children.

5. Local education agencies (LEA) should look closely at the early childhood education programs in their communities and devise a plan with stakeholders to improve their programming and function. An evaluation of programs in the school communities should be conducted on an ongoing basis in order to develop a plan for designing and/or improving programming and function of present programs that involves all stakeholders.

6. LEAs should provide school boards with information pertaining to different types of preschool programs and the academic achievements of students to determine if local programs are efficient. The Mississippi Department of Education (2015) now requires (beginning school year 2015-2016) that preschool attendance information is collected on school registration forms for incoming kindergarten students.

7. School districts should consider curriculum alignment with preschool in mind. Personnel from local preschool agencies should be invited when planning PLC meetings so that feeder schools inform offsite early childhood
education centers of expectations of incoming kindergartners. Improved collaboration between early childhood education programs and public schools may help to ease the transition for incoming kindergarteners.

Recommendations for Future Research

After an extensive review of the literature revealed only a few studies of parental involvement that took into account the parents’ reported belief, more research needs to be done in this area. Education from the parent’s perspective often receives more buy-in and fosters a sense of ownership. The lack of established literature on the influence of parental involvement and student achievement in preschool was unexpected and disappointing. Of the few studies that were found, most were very dated. This study did provide data that clearly showed that as children get older, parental involvement decreases. With the importance of preschool and early childhood education programs on laying the educational foundation for the youth of society, recommendations for future research include:

1. This study should be replicated utilizing a more diverse sampling of participants from a larger number of school districts. This study included students from five school districts with only four responses from one of those districts. The school districts that participated ended up being very similar in demographics (rural, county schools). The two city schools that agreed to participate were underrepresented.

2. Conduct studies that investigate differences among groups of participants based on preschool type utilizing stricter quality control mechanisms. With a large amount research focusing on the quality of preschool programs and the
relation to the program’s success, more studies in this area would be beneficial to key decision-makers involved in planning and appropriations.

3. Research should be conducted to study influences of parental involvement on student achievement from the perspective of the parent. The review of literature revealed that few studies have been conducted that take into account parental beliefs about how parents themselves can be involved in their child’s schooling and the benefits of parental involvement. A study that extends the findings of the present study and considers the ratings of the parent instead of relying solely on the ratings of the teachers of the parents should be conducted.

4. A study of this nature should be conducted immediately after third grade. This may reduce the likelihood of parents not remembering specific facts about their children’s preschool experiences. Following the cohorts every three years into high school and comparing parental responses and student achievement may provide more accurate data and usable findings.

5. An extension of this research study would be to include additional subgroups like learning disabled and gifted and determine whether differences exist among them based on academic measures. With increase sources of data in schools today, the numbers and groups of data combinations are endless.

6. Additional studies that investigate the parents’ knowledge of their children’s abilities may be beneficial in increasing parental awareness and involvement.
Summary

The purpose of this study was to determine whether differences exist in the academic achievement of high school seniors who participated in a preschool program and those seniors who did not. Academic achievement data was measured by performance on 2006-2007 third grade MCT reading and math scaled scores, English II and Algebra I SATP2 scores and ACT composite scores. Additional data collected included retention history, socioeconomic status, gender, and type of preschool each student attended. The study also examined the beliefs of parents of preschool attendees about the impact of preschool on their children’s preparation for formal school success using a parent questionnaire.

A total of 185 parent questionnaires were accompanied by signed parental consents and could be included in the study. The study found no statistically significant differences among students’ academic performance with regards to preschool type. Statistically different results were found when considering a student’s Algebra I SATP2 scores with regard to retention history. In addition, statistically significant differences were detected on ACT scores when considering socioeconomic status and public school preschool. The study found no differences in reports of parental beliefs about the impact of preschool on reading and math readiness. The study further revealed that parents’ beliefs about the impact of preschool reading and math were moderately positively correlated with subsequent performances MCT reading/English I SATP2 and MCT math/Algebra I SATP2 tests.

The majority of parents agreed that their child attending preschool was very effective in preparing them for success in kindergarten through twelfth grades and even
future employment. However, this study revealed that as children got older parents reported less involvement with homework assistance, and volunteering at their child’s school. Parents were neutral or in agreement up through grade five, after which many disagreed that they volunteered at their child’s school, received help information from the school, and helped with homework.

The idea of students entering kindergarten prepared and ready to learn has been correlated with having them graduate from high school and ready to find success in college and future employment. This research project did not yield statistically significant results on several research questions, however, continued research to support funding of early childhood education programs is imperative. An even more worthwhile investment would be the parents of preschoolers as well as the parents of all students. This study was among only a few that considered the beliefs of parents concerning the impact of preschool on their children’s K-12 schooling. With increased interest in improving early childhood education programs, researchers should focus on the people who have the most influence over the lives of preschool children—their parents.
APPENDIX A

SUPERINTENDENT’S PERMISSION TO CONDUCT RESEARCH LETTER

Date

Name of Superintendent
School District Name
School District Address

Dear ________________________,

My name is Fina Gayden-Hence, and I am currently enrolled in the Educational Administration doctoral program at The University of Southern Mississippi. I am in the proposal phase of my study and will soon need to conduct research associated with my dissertation. I am requesting permission to conduct a research study that seeks to determine whether academic performance differences exist among high school seniors who participated in preschool and those who did not. The study will further examine parents’ beliefs regarding the effectiveness of their children’s preschool attendance as related to subsequent academic measures. The student performance measures will include the 2015-16 seniors’ third grade MCT scores, English II and Algebra I SATP scores, student retention rates, and ACT scores. The study will also examine differences based on gender and socioeconomics. A parent questionnaire will also be utilized in this study and will ask questions related to participants’ beliefs about their children’s preschool attendance and their beliefs regarding the impact of preschool on the achievement of their child.

My request involves archival student data from cumulative records of all your district’s high school seniors. With your approval, I am requesting that you designate a counselor in your district who can provide the following data for all 2015-2016 seniors: third grade 2006-2007 MCT scores, the most recent Algebra I and English II SATP scores, retention rates, ACT scores, gender, socioeconomics (free/reduced price lunch status), and if available, confirmation of whether the child attended preschool. All data will be collected in a manner that protects student confidentiality. The researcher will receive the data file without names and unique student identification number will be used only by your counselor-designee to link the parent questionnaire back to the child’s data provided in the spreadsheet by your district.

The final data collection component of my study will involve parent questionnaires. Upon receiving your consent, I will distribute parent questionnaires along with a letter explaining the purpose and nature of the study. The questionnaire consists of Likert-type questions that require only a check mark for each item and the instrument should take no longer than 15 minutes to complete. While there will be a unique student identification number in each instrument, the parent will not be asked to identify himself/herself. The completed instrument will be returned to your counselor, who will link the unique student identification code in the parent questionnaire back to the child’s data. The parents’ responses will provide insight into their beliefs of the impact of their children’s preschool
participation on MCT and SATP scores, as well as other academic outcome measures. Parents will be informed that their participation is voluntary, and all information obtained will be confidential. In addition, they will be informed that there are no negative repercussions if they choose not to participate in the study.

Parent participants will complete the questionnaire, place it in the pre-addressed, stamped envelope provided by the researcher and return by mail to your designated counselor. The researcher will provide the pre-addressed envelopes with postage already affixed. Counselors who serve in this role will receive specific instructions and will also keep returned questionnaires in a locked cabinet. Neither the students nor your school district will be identified in the final reports of the study. All data will be kept confidential, with only me and my committee members having access to the information. No costs will be incurred by your school district or the individual participants.

Upon completion of the study, I will make the results available, upon request, to you, your colleagues, and participants. The school employee at each high school who assists me will receive a $35 gift card upon my receipt of the requested data. Questionnaires will be distributed during the fall of the 2015-2016 school year with target return date of late September/early October 2015.

It is my hope that the research findings are found to be significant and can be used to support existing data on preschool education, as well as provide school leaders with valuable information in support of funding early childhood education programs.

Your approval to conduct this study will be greatly appreciated. I will be happy to discuss my study with you further, answer any questions or address concerns you may have. I can be contacted by phone at 601-964-1966 or by email at fina.gaydenhence@eagles.usm.edu. This project will be conducted under the supervision of my dissertation committee chairman, Dr. David Lee, who can be contacted by email at david.e.lee@usm.edu.

If you consent to my conducting research in your district, please copy and paste the content of the enclosed “Superintendent Consent Form” onto your school district’s letterhead, then print and sign it. You may scan and email the consent to me at fina.gaydenhence@eagles.usm.edu or you may return this correspondence via postal mail in the postage-paid envelope provided.

Thank you in advance for your consideration in this matter.

Sincerely,

Fina Gayden-Hence, Doctoral Candidate
The University of Southern Mississippi

Enclosure
cc: Dr. David Lee, Committee Chair

(Please copy and paste the following information onto your district’s official letterhead.)

SUPERINTENDENT CONSENT FORM

By signing and returning this form, I give Fina Gayden-Hence, a doctoral candidate at The University of Southern Mississippi, permission to conduct a research study in the ____________________________ School District during the fall semester of 2015-2016. Ms. Gayden-Hence has permission to meet with district personnel to conduct training on questionnaire distribution and collection to each senior’s parents and to obtain archival data pertaining to the senior class. I understand that the parents will mail their signed consent forms and questionnaires to the counselor where they will remain under lock and key. I understand that all responses will be kept confidential and no individual parent, student, school, or district data will be identified anywhere in her research findings. All parents, students, schools, and districts will remain completely anonymous. I further understand that participation in the study is completely voluntary.

_____________________________  ______________________
(Superintendent’s typed name here)  Date
Superintendent
APPENDIX B

IRB APPROVAL

INSTITUTIONAL REVIEW BOARD
116 College Drive #5147 | Hattiesburg, MS 39406-0001
Phone: 601.266.5971 | Fax: 601.266.4377 | www.usm.edu/research/institutional_review_board

NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board
in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health
and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following
criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data
collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to
  maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects
  must be reported immediately, but not later than 10 days following the event. This should be reported
to the IRB Office via the “Adverse Effect Report Form”.
- If approved, the maximum period of approval is limited to twelve months.

Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 15091707
PROJECT TITLE: The Impact of Early Childhood Learning on Student Success
PROJECT TYPE: New Project
RESEARCHER(S): Fina Geyden-Hence
COLLEGE/DIVISION: College of Education and Psychology
DEPARTMENT: Educational Leadership and School Counseling
FUNDING AGENCY/SPONSOR: N/A
IRB COMMITTEE ACTION: Expedited Review Approval
PERIOD OF APPROVAL: 09/22/2015 to 09/21/2016

Lawrence A. Husman, Ph.D.
Institutional Review Board

APPENDIX C
ID_____________

- Do NOT write your name on this document.
- When you are finished, please return to the school counselor in the envelope provide.
- If you have more than one child who is a senior, complete one questionnaire for each.

**Part I. Preschool Attendance** Please check ONLY ONE box for Question 1 and please check only one box for Question 2. If your child attended more than one program in a year, choose the program type attended the longest period of time.

<table>
<thead>
<tr>
<th></th>
<th>Public Preschool Pre-K</th>
<th>Head Start</th>
<th>Private Preschool (Church/Business)</th>
<th>Did NOT Attend Preschool</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. At age 3, my child attended</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>2. At age 4, my child attended</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

If your child did not attend any type of preschool, STOP HERE and return this document.

**Part II. Preschool Experience** Place a check in the box that describes your level of agreement with each statement below regarding your beliefs about your child’s preschool and formal school experience.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. My child’s school frequently provided information about ways to help my child when he/she attended:</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preschool</td>
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<td>②</td>
<td>③</td>
<td>④</td>
<td>⑤</td>
</tr>
<tr>
<td>Kindergarten through 2nd grades</td>
<td>①</td>
<td>②</td>
<td>③</td>
<td>④</td>
<td>⑤</td>
</tr>
<tr>
<td>3rd through 5th grades</td>
<td>①</td>
<td>②</td>
<td>③</td>
<td>④</td>
<td>⑤</td>
</tr>
<tr>
<td>6th through 8th grades</td>
<td>①</td>
<td>②</td>
<td>③</td>
<td>④</td>
<td>⑤</td>
</tr>
<tr>
<td>9th through 12th grades</td>
<td>①</td>
<td>②</td>
<td>③</td>
<td>④</td>
<td>⑤</td>
</tr>
</tbody>
</table>

4. I frequently volunteered at my child’s school when he/she attended:

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preschool</td>
<td>①</td>
<td>②</td>
<td>③</td>
<td>④</td>
<td>⑤</td>
</tr>
<tr>
<td>Kindergarten through 2nd grades</td>
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<td>②</td>
<td>③</td>
<td>④</td>
<td>⑤</td>
</tr>
<tr>
<td>3rd through 5th grades</td>
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<td>②</td>
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</tr>
<tr>
<td>6th through 8th grades</td>
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<td>②</td>
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<tr>
<td>9th through 12th grades</td>
<td>①</td>
<td>②</td>
<td>③</td>
<td>④</td>
<td>⑤</td>
</tr>
</tbody>
</table>

5. I often helped my children with homework when they were in:

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kindergarten through 2nd grades</td>
<td>①</td>
<td>②</td>
<td>③</td>
<td>④</td>
<td>⑤</td>
</tr>
<tr>
<td>3rd through 5th grades</td>
<td>①</td>
<td>②</td>
<td>③</td>
<td>④</td>
<td>⑤</td>
</tr>
</tbody>
</table>
You have completed this questionnaire. Your input is VALUABLE and APPRECIATED.

**Directions for Returning Your Questionnaire**

Please place your completed questionnaire in the pre-addressed, stamped envelope. You may return it in one of two ways:
1. Place it in the nearest mail drop, or
2. Have your child return it to the designated locked box at their school.

THANK YOU FOR YOUR TIME!
APPENDIX D

EXPERT PANEL REVIEW FORM

Your assistance in reviewing my Parent Questionnaire instrument is greatly appreciated. The instrument asks parents of 2015-2016 seniors to address questions regarding their child’s preschool experiences. It also asks parents their beliefs about the effectiveness of the child’s preschool experience on their overall formal schooling and their academic achievement in reading and math. I ask that you please review and analyze the instrument for its utility in verifying preschool attendance, type of preschool program, and parent’s beliefs regarding the effectiveness of the program.

After completing your analysis of the instrument, please provide the requested reviewer information and answer the questions that follow. Please contact me with any concerns or comments regarding these documents. Thank you for your time and effort toward honoring this request.

Reviewer Information

Name __________________________________ Title __________________________________

Credentials ________________________________________________________________

___________________________________________________________________________

Instrument Analysis

1. Is this instrument valid for the purpose of determining parents’ beliefs regarding preschool effectiveness in preparing their child for formal school at each grade range?

2. Is this instrument valid for the purpose of determining parents’ beliefs regarding preschool effectiveness on their child’s academic achievement in reading and math?
3. Are any of the questions confusing for parents to understand and would this prevent them from providing responses that would allow determination of their child’s participation in a pre-kindergarten program? ________________________________
________________________________________________________________________
________________________________________________________________________

4. Are any of the questions worded such that parents would not understand the intent to solicit their beliefs of the impact of their child’s preschool experience on their reading and math achievement? If so, please explain. __________________________

5. Do you have any suggestions for modifying the instrument in order to make it more useful in achieving its stated purpose? ________________________________
Dear Parent,

Your child has been identified as a senior by your school district. Congratulations on such an accomplishment!

We are interested in knowing more about the seniors and whether or not they participated in preschool programs. We would like to include your child’s information in a study entitled, *The Impacts of Early Childhood Education on Student Success in High School*.

The purpose of the research project will be to determine if achievement differences exist between high school seniors who attended preschool and seniors who did not attend preschool. The researcher will also analyze the impact of other variables on the academic achievement of seniors who did and did not attend preschool. This information will be gathered by the researcher upon receiving signed consent from parents who have agreed to have their child’s data included in the study. The researcher will submit a list of parent-approved participants names to the district office, where their information will be matched to their child’s then names will be removed and replaced with unique identification numbers so that all information provided to the researcher will be anonymous. Your child will not be identified or asked to participate in any study related activity.

As a parent of a senior, I agree to the above conditions with the understanding that I can withdraw from the study at any time should I choose to discontinue participation. I also understand that:

- The identity of participants will be protected. The identity of students will not be provided by the district to me, the researcher. The students’ names will be deleted from any data collected by the counselor who assists with gathering information for this study. The district will provide the following information and will be asked to code the data file with a unique identification number using the following groupings: (1) whether or not student attendant preschool, (2) gender, (3) retention history, and (4) free/reduced lunch status. This unique identification number is the same as the number at the top of this questionnaire. The questionnaire will be sent to the school counselor, who will match my child’s achievement information to the number before providing the data to the researcher. The researcher will not know my child’s name or any other identifying information about my child.
• Information gathered during the course of the project will become part of the data analysis and may contribute to published research reports and presentations. However, these reports will not contain any information that identifies the student participants, the school, or the district.

• There are no foreseeable inconveniences or risks involved to my child.

• Participation in this study is voluntary and will not affect my child in any way. If I decide to withdraw permission after the study begins, I will notify the superintendent of my decision.

I understand that if further information is needed regarding the research study, I can contact the researcher, Fina Gayden-Hence at fina.gaydenhence@eagles.usm.edu or her supervising professor, David Lee, Ph.D. at david.e.lee@usm.edu.

Thank you in advance for your cooperation and assistance in this endeavor.

Sincerely,

Fina Gayden-Hence

Doctoral Candidate, The University of Southern Mississippi

By signing below, I am indicating that I have read the information provided in the Informed Consent Information form and this Parental Consent Letter. Also, I have decided to participate and to allow my child’s information to be included in the study titled The Long Term Impacts of Early Childhood Learning on Student Success in High School.

____________________________________  __________________
Parent/Guardian Signature                  Date
Informed Consent Information: Participation in a Research Study

Date:

Title of Study: THE RELATIONSHIP BETWEEN EARLY CHILDHOOD EDUCATION AND STUDENT SUCCESS

Researcher: Fina Gayden-Hence

Email Address: fina.gaydenhence@eagles.usm.edu

Committee Chair: Dr. David Lee (david.e.lee@usm.edu)

What are some general things you should know about this research study?
You are asked to participate in a doctoral research study. Your participation in this study is completely voluntary and you may decline or withdraw from participation. To do so will not result in any penalty.

This research is designed to gather specific information for a study that will be used to benefit current and future educators, policymakers, and stakeholders. There is no specific benefit to you as an individual; however, risks are sometimes associated with participating in research. For this particular research, the risks are very minimal and are described in this document.

More details about this study are provided below. So that you can make a well-informed decision about your participation, please read the information. You can contact the researcher listed above if you have any questions or concerns.

What is the purpose of this study?
The purpose of the study is to determine whether differences exist between high school seniors who attended preschool and seniors who did not attend preschool. The researcher will also analyze the impact of other variables on the academic achievement of seniors who did and did not attend preschool. This study requires review of archived student reading and math performance data and a parent questionnaire.
How many people will take part in this study?
If you decide to participate in this research, you will be one of approximately 175 participants in the study.

How long will your participation in this study last?
You will be asked to complete a questionnaire. Your completion of this questionnaire should take no more than 10 minutes. If you would like, you may request a report of the results at the end of this study by emailing me at fina.gaydenhence@eagles.usm.edu.

What will happen if you take part in the study?
You will be asked to complete a questionnaire. If you choose to participate and allow your child’s data to be used in this study, you will sign and return the Parent Consent Letter along with the completed questionnaire. An envelope will be provided in which you can confidentially secure your completed survey. A self-addressed stamped envelope will be provided to you to return your questionnaire to your child’s high school counselor. To further ensure confidentiality, all responses will be locked in a secure file cabinet in the counselor’s office during the study and destroyed once the research is complete. The researcher will not have access to the consent letter or the questionnaire. The researcher will only receive a data file without names from the counselor.

What are the possible benefits of participating in this study?
Your participation and responses in this study will assist in determining the short- and long-term impacts associated with attending early childhood education, or preschool programs. This information can be used by school leaders and policymakers as justification for dedicating and appropriating funds for improving the quality and access of early childhood education programs. Your participation and responses in this study will also assist in providing school districts with parents’ perspectives on issues relating to preschool which can be used in developing new programs or improving existing programs and curricula.

What are the possible risks or discomfort involved with being in this study?
Risks associated with this study are minimal. Risks could possibly be that participants may not feel comfortable responding to questions regarding their child’s preschool experience. To relieve this risk of discomfort, the researcher will ensure that your participation is anonymous and confidential. Only the school counselor will have access to the signed consent and questionnaire responses. The researcher and the researcher’s university advisors will only have access to anonymous data for the duration of the study. Once the questionnaires are received, they will be locked in a secure file cabinet in the counselor’s office during the study and destroyed once the research is complete. The data file that is received by the researcher from the school district will not include any student’s name and it will be locked in a secure file cabinet for the duration of the study and destroyed once the research is complete.

How will your privacy be protected?
No personal information to identify participants to the researcher will be required for this survey. No personal information or other information that may identify participants will be included in any report or publication about this study. Only the school counselor will have access to the actual questionnaires, which will not include your name or your child’s name. The researcher and the researcher’s university advisors will review the results of the questionnaires in chart form without names. After the data from questionnaires is placed in the data file, they will be securely stored then shredded after one year.

**What if you have questions about this study?**
You have the right to contact the researcher and the committee chair with any questions that you may have about this study. The researcher and committee chair are listed at the beginning of this document and can be contacted regarding any questions or concerns.

**What if you have questions about your rights as a research participant?**
This study has been reviewed by the Human Subjects Protection Review Committee. This committee ensures that all research fits the federal guidelines for involving human subjects. Any questions or concerns about your rights as a research participant should be directed to the Chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5147, Hattiesburg, MS 39406-001, (601) 266-6820.
APPENDIX G

LETTER TO HIGH SCHOOL COUNSELOR

Date

Dear High School Counselor,

My name is Fina Gayden-Hence, and I am currently enrolled in the Educational Leadership doctoral program at The University of Southern Mississippi. In order to fulfill the requirements of my dissertation, I will conduct a study entitled, “The Impact of Early Childhood Education on School Success”.

I will use archival data from the 2015-2016 senior class and results of questionnaires from the parents of same senior class. I will need your assistance in distributing and receiving parent questionnaires, entering archival data into the researcher provided data chart for those students whose parents consent to participation, de-identifying the data and returning the de-identified data file to me. This means that you will remove all names of students before you return the data file to me. No district, school, student, or parent will be identified by name in any reports of this research. Your participation is strictly voluntary, and at any time, you are free to decline participation or discontinue your participation in data collection without penalty.

If you choose to participate I will conduct a training with you to provide guidance and training on how to label and distribute the parent questionnaires and consent forms, as well as training on the process for collecting and properly securing returned instruments. I will also go over the processes for matching student data to the unique student ID number on the instrument. In addition, I will further explain informed consent and guidance in the process for acquiring. All materials needed to conduct the study will be provided by me, the researcher, at the training.

Again, your participation is completely voluntary and may be discontinued at any time without consequence. However, if you consent to participate, it will be greatly appreciated! As a reward for your assistance, a $35 gift card will be provided to you upon receipt of the requested data. If you agree to participate in this study, please sign the acknowledgment of informed consent.

If you have any questions or concerns about this research study, please contact me by phone at 601-964-1966 or by email at fina.gaydenhence@eagles.usm.edu. My dissertation advisor is Dr. David Lee, who can be contacted at david.e.lee@usm.edu.

Respectfully,

Fina Gayden-Hence
Enclosure: Notice of Informed Consent for Research Participants

Participant Acknowledgement of Informed Consent

I have read the notification of informed consent. I understand that my participation in the data collection phase of this study is voluntary and that I may withdraw from participation at any time. My signature below indicated my consent to participate in this study.

Signature_________________________________________Date___________________
High School Counselors’ Data Collection Procedures Training

1) Provide letter to High School Counselor
   a) Introduce the researcher, briefly describe the purpose and rationale of the study, explain informed consent, and reiterate the voluntary nature of the study.

2) Review of documents that will be utilized in the data collection process.
   a) Data chart
   b) Notice of Informed Consent for Research Participants
   c) Parent Questionnaire
   d) Parental Consent Letter

3) Preparing Data Chart for distribution of Parent Questionnaires
   a) Counselors will choose unique student identification (ID) numbers and fill in the column in the chart labeled “Student ID #”. The number of ID numbers listed in column 2 should correspond to the number of seniors in the 2015-2016 class.
   b) The counselor will email the file containing ONLY ID numbers to the researcher who will then:
      i. Print labels corresponding to these numbers.
      ii. Assemble Parent packets of materials for each senior, identified only by an ID number, to consist of a Parent Consent Letter, a Notice of Informed Consent for Research Participants, a Parent Questionnaire, a pre-addressed, stamped envelope, and an envelope for distribution to parents.
      iii. Return assembled packets to a high school counselor who will prepare supplied envelopes for distribution. Labels will be attached to questionnaires and parent consent letters to be sent home.

4) Distribution of Parent Materials
   a) Counselor will add names of students to the data chart in his/her possession that corresponds to a student ID number.
   b) Counselor will prepare researcher-provided envelopes to distribute by adding names/addresses of parents/guardians on envelopes to match ID numbers on the data chart.
   c) OPTIONAL: School may facilitate a senior class meeting prior to distribution to briefly describe the purpose and rationale of the study, explain informed consent, and explain the voluntary nature of the study. All measures will be taken to minimize coercion.

5) Collecting Parent Materials
   a) Students may return completed parent questionnaires and signed consent forms in SEALED pre-addressed envelopes in one of two ways:
      i. Returning to the locked box in a location designated by the school principal; OR
ii. Return by U.S. Postal Service to the counselor. Those instruments received by U.S.P.S. will be placed in the locked box until matching of data occurs.

6) Matching Student Data
   a) The counselor will unlock collection box and retrieve all returned instruments.
   b) The counselor will open all sealed envelopes and determine that parental consent forms are signed.
   c) After signed consent is verified, the counselor will CONFIRM a match of name and student ID number in the data chart and mark a “Y” beside each students’ name under the third column titled “Consent Returned”.
   d) For each student who has returned a signed consent form and has a “Y” in the third column, the counselor will complete table with archival student data which includes, gender, free/reduced lunch status, retention history, 3rd grade MCT Math and Reading scores, Algebra I and English II SATP2 scores, and latest ACT composite scores.
   e) All students in the chart who did not return a signed parent consent will have their name and student ID number removed from the data chart.

7) Materials to Return to Researcher
   a) The counselor will separate the signed Parental Consent Forms from the Parent questionnaires.
   b) The signed Parental Consent Forms will be placed in the locked box in a file cabinet in the office of the counselor until the conclusion of the study. The counselor will be notified when the documents may be destroyed by shredding.
   c) The following documents will be returned to the researcher:
      i. Electronic copy of data chart (or version approved by your district) containing de-identified archival student data will be provided on disc or by email.
      ii. Questionnaires, which contain ONLY the student ID numbers, will be assembled in a large envelope provided by the researcher. The researcher will visit the school to pick up the envelope. At this time, the researcher will reward the counselor with the $35 gift card.
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