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The Impact Of Pre-Kindergarten Programs On Student Achievement In Mississippi Elementary Schools

Fletcher B. Harges

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THE IMPACT OF PRE-KINDERGARTEN PROGRAMS ON STUDENT ACHIEVEMENT IN MISSISSIPPI ELEMENTARY SCHOOLS

A Dissertation
Presented for the degree of
Doctor of Philosophy
in the Department of Educational Leadership
The University of Mississippi

by
FLETCHER B. HARGES

August 2017
ABSTRACT

Each of the states bordering Mississippi invests large amounts of money in providing children with state-funded pre-k programs in their public schools. However, Mississippi falls behind these states and does not similarly invest in this effort to provide many of its children with the opportunity to attend state-funded pre-k programs. Because school readiness is such a huge concern for instructional leaders of Mississippi schools, there is a need to determine the benefits associated with offering pre-k to all students throughout the state. Therefore, the purpose of this study was to examine the impact pre-k has on the academic achievement of students in Mississippi school districts. Two hypotheses were tested in order to determine if a significant difference existed between pre-k attendees and non-attendees using 2015-2016 MAP test data in reading and math. After conducting an independent samples t test, findings from this study suggested there is a significant difference between the MAP reading and math test scores of 2015-2016 third grade students in Mississippi schools who attended public school pre-k programs and students who did not. Thus, it is important to invest more resources in pre-k in efforts to close the achievement gap between MS and the neighboring states.
DEDICATION

This work is dedicated to my devoted wife and children who have supported me in all of my endeavors to advance my education and career.
ACKNOWLEDGMENTS

I want to start by thanking God; without you Lord nothing I have ever accomplished would have ever been possible. I want to thank you for watching over me, guiding me, protecting me, and keeping your strong loving arms around me. Heavenly Farther, as I have traveled up and down the dangerous roads going to work, attending classes, and going to various functions, you have been there making sure that I arrive to and from safely. There have been many days Lord when I was exhausted and tired, and I didn’t know how I was going to make it, but you always give me the strength to make it and be productive in the process. Thank you.

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some of our interactions and in turn applying it to various situations. Thank you.

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CHAPTER I
INTRODUCTION

Increasing the overall academic performance of all students has become an endeavor in which school leaders and teachers throughout the entire nation must embrace. However, prior to school entry there is a dire need for educators and policy makers to think more critically about what is necessary in order for children to succeed in school academically. What some states have done, such as Georgia, Florida, Oklahoma, Tennessee, Pennsylvania, etc., to address the long-term goals associated with students being able to experience success in school is provide the implementation of state-wide pre-kindergarten programs (pre-k) (Cooper & Costa, 2012). According to DeBruin-Parecki and Slutzky (2016), pre-k provides children, age four, with educational learning opportunities prior to entering kindergarten, and this learning can take place in private learning centers or in public schools. Therefore, although poverty and socio-economic factors affect the quality and quantity of options afforded to children, publicly funded pre-k funded programs offer families educational options for pre-school aged children allowing them to be educated prior to kindergarten.

Early childhood education programs have been in existence for many years, and they assist schools in preparing children to enter school both socially and academically prepared. However, is it not a requirement for children to attend pre-k programs. Due to children coming from families living in poverty and having low socio-economic backgrounds, some children do
not have the opportunity to receive early educational services (Hudson, 2015). Some children entering kindergarten, with this being their first time walking into the doors of schools, there are many challenges. For example, if a child has never been away from their families or placed in school settings, they have not had the same social interaction with peers as children who have experienced some form of early childhood services. Children who have also never had the opportunity to experience any system of pre-school lack knowing what it is like to engage in structured learning environments with teachers facilitating learning. Children who have never had the opportunity to attend early childhood may find it difficult adjusting to daily routines after entering school. Therefore, there is a dire need for children to attend pre-school in order for them to gain necessary developmental, social, and emotional skills acquired when children are in school (Abel, Talan, Pollit, & Bornfreund, 2016).

The aforementioned ideas are key factors in terms of school readiness. School readiness refers to children being prepared to enter kindergarten already acclimated to experiences which allow students to acquire knowledge, content, and skills which will support children academically (Bierman, Nix, Domitrovich, Welsh, & Gest, 2015). School readiness can also develop children into having productive academic learning experiences as a result of already knowing what school has to offer them. Additionally, when students are school ready, upon entering kindergarten, the curriculum in which they are presented could present fewer difficulties and adjustments due to exposure. Those who are not school ready can face the possibility of experiencing difficulties making adjustments when they have not been prepared for school entry. Students are expected to have already mastered certain developmental skills and concepts at some point prior to ever entering school.
When children have missed opportunities for learning, challenges can be in the making for the child, teacher, parents, and the school. Children in schools can be challenged because of skill deficits they can encounter as a result of having no prior knowledge to the new content presented in kindergarten. Teachers are also challenged because they are held accountable for students who lack skills necessary to make academic growth. In addition to this, teachers can also be challenged with having multiple students in the classroom with similar issues, and not enough time in a day to address them. Parents of these children who have never been exposed to early childhood services could also experience the possible turmoil of finding out their children are facing academic challenges as a result of them not being prepared for school. Lastly, schools as a whole may suffer if programs, interventions, and support teams, etc., are not in place to address the deficits of students who lack early childhood experiences prior to entering school.

Each of these aforementioned issues makes it increasingly difficult for instructional leaders to meet academic goals associated with school growth. If students are not making necessary growth due to a lack of background experiences and knowledge, principals have to come up with plans of improvement for their schools. It can be a daunting task for elementary school leaders to develop plans of improvement for children entering school with skill deficits in areas such as reading, language, and math.

**Statement of the Problem**

Studies on pre-k education indicate when students participate in early childhood education programs they can have a very positive influence on a child’s academic performance in school (DeBruin-Parecki, & Slutzky, 2016). Standards for pre-k education have been developed for all states in order to serve as a guide for instruction and to aid in allowing students
to make proper academic and developmental transitions into kindergarten. Standards provide students with the same opportunities to learn basic skills required for students to have successful outcomes in school (DeBruin-Parecki, & Slutzky, 2016). Therefore, set standards for learning are essential for teachers to have an understanding of what children should have mastered prior to them entering kindergarten.

Although pre-k programs are offered to students in the state of Mississippi in some school districts, the decision to implement the programs are left solely up to the school district and not mandated by the state. There is a limited amount of funds available in the state of Mississippi for pre-k education, and school districts must apply for these monies in order to receive funds. The alternative to applying for funding would be for school districts to fund their own pre-k programs, and student attendance would still be limited (Mississippi Department of Education, 2016.). However, since children have to meet the demands of passing state assessments in third grade and up, as required by the state, it is imperative for policy makers and educators to examine reasons as to why the state of Mississippi should seek the opportunity to fund pre-k throughout the entire state. Additionally, Suitts (2010) explains the state of Mississippi is behind most other states academically. As a result, there is a need for the state to address ways to help the children in this state become academically inclined in comparison to the performance of students in other states (Suitts, 2010). Lastly, the state of Mississippi has a very high level of poverty, and the implementation of a state-wide pre-k program can possibly lead to decreasing the poverty level of people in the state because investing in the educational system will lead to long term benefits and productivity. When students are granted the opportunity to participate in pre-k programs, which engage their social and academic talents, they will have the
opportunity to experience success in school in the future. Students will also have a chance to become interested and accustomed to being in school.

When children enter kindergarten without exposure to pre-k standards, and are not kindergarten ready, teaching and learning can become increasingly difficult. Achievement gaps can develop, which can lead to deficits in areas where children are going to be assessed. As a result of educational reform, which dates back to the implementation of No Child Left Behind (NCLB) in 2002, states are required to assess their students in order to determine the amount of academic growth students are making (Tyler, 2012). The demands of high stakes testing requires the testing of all kindergarten students in Mississippi, and all public schools are required to provide structured learning environments, which focuses on the overall growth and development of children (Mississippi Department of Education, 2016). Developmental skills are necessary in order for students to adequately learn and function in school, which leads to academic achievement.

If students fail to show progress on assessments, remediation of skill deficits should immediately occur for students. The remediation of skills will be necessary for learners in kindergarten in order for the teacher to help the child with concepts by re-introducing information presented to the child and encouraging them to learn the skill (VanDerHeyden, Witt, Naquin, & Noell, 2001). With so many children entering school lacking skills necessary to pass assessments, teachers will be responsible for providing interventions, re-teaching, and re-testing information they should already know.

In addition to students having to be assessed when they enter school at such early ages, children in the state of Mississippi are behind other states academically, because school readiness
is an issue for the state. According to Suitts (2010), the state of Mississippi is behind all of its surrounding states in the area of early childhood education because all the bordering states have embarked upon the mission to develop and implement state-wide pre-k programs. Although it is very expensive for states to fund these programs, taking the initiative to make these investments in the education of children can return great long-term benefits. However, this can only be done if programs are efficiently structured and designed to ensure students are receiving high-quality standards for learning (Atchison, Bruce, & Workman, 2015). Therefore, policy makers and educators must be willing to take the time to implement and execute effective pre-k programs if they are going to provide funding for the programs.

There are several school districts in the state of Mississippi currently offering pre-k programs; however, pre-k is not a state requirement and the decision to offer these services is left up to the school district. According to Mississippi First (2016), Mississippi recently passed the law referred to as The Early Learning Collaborative Act of 2013, and the state also increased the state budget for pre-k to $3,000,000 (Atchison, Bruce, & Workman, 2015). Although the state has decided to provide a funding source, investing in pre-k programs, the amount of money spent is very little in comparison to the what other states are devoting: Tennessee $86,366,000, Arkansas $103,500,000, Alabama $38,624,146, and Louisiana $90,281,071 (Atchison, Bruce, & Workman, 2015). States bordering Mississippi are spending considerably larger amounts of money in comparison to Mississippi in order to invest in the education of children aged four. These bordering states have made investments, because they are confident they will reap benefits from their investments long-term.
In addition to the state providing an inadequate amount of funds for pre-k education, it is important to point out how Mississippi ranks among the highest for children who live in poverty. According to a report from Miller (2015), 34% of children throughout the state are living in poverty, and the poverty rate for citizens of the state has increased since the 2008 recession. In addition to these findings, the state ranks 48th in education, and 66% of the children in public school settings are reading below grade level (Miller, 2015). These numbers will continue to remain high until the state decides to make a serious commitment to properly funding education.

These findings shed light on the difficulties school leaders in Mississippi face when seeking ways to provide children with the best education possible. School administrators and teachers have no control over the socioeconomic factors contributing to a child’s inability to enter school prepared. However, it is essential for leaders to implement programs designed to address these issues with preschool aged children in Mississippi. School leaders advocating for universal pre-k in Mississippi would be a start to addressing issues associated with children not being adequately prepared for school.

**Purpose of the Study**

The purpose of this quantitative study was to examine the impact of pre-k programs on student achievement in selected Mississippi elementary schools. Targeting pre-k programs in school districts throughout Mississippi, the study particularly focused on current fourth grade students who have completed the Mississippi Assessment Program (MAP) in the spring of 2016 in reading and math. Therefore, the overarching question of this study is as follows:

1. Is there a significant difference in the reading and math achievement of students who attended pre-k and those who did not in Mississippi elementary schools?
**Research Hypotheses**

1. Ho: There is no significant difference between third grade students in Mississippi schools who attended pre-k and students who did not on MAP reading test scores in 2015-2016.

2. Ho: There is no significant difference between third grade students in Mississippi schools who attended pre-k and students who did not on MAP math test scores in 2015-2016.

**Significance of the Study**

Data from research suggest almost 20% of children who enter school are not prepared for entry as a result of them lacking cognitive, social, and emotional skills required for students to be successful (Bierman, Nix, Domitrovich, Welsh, & Gest, 2015). Because of the demand for students to achieve, universal pre-k education and funding for children in the state of Mississippi is necessary. Students and teachers are held accountable for the mastery of content, and if children have never been exposed to content on school readiness assessments this leads to academic problems and concerns educators. Therefore, it is essential for policy makers, educators, and stakeholders in Mississippi to come to the realization that investing in early childhood education, for all children aged four, will have a tremendous impact on the trajectory of a child’s future (Cooper & Costa, 2012). Results from this study could indicate a need for the education policy makers to consider state-wide funding for pre-k education in Mississippi.

**Limitations in the Research Study**

The participants selected for this study were not randomly selected, but include the test scores of two groups of students as follows 1) students who have attended pre-k in selected Mississippi school districts and, 2) students who have not attended pre-k in selected Mississippi schools. Intact groups of students who attended pre-k and those not attending were selected for
participation, but random assignment was not possible using these two groups of students. The population sample was also limited as a result of the study targeting only schools throughout the state of Mississippi.

**Organization of the Dissertation**

This dissertation is organized in five chapters. Chapter I includes the introduction, statement of the problem, purpose of the study, hypotheses, significance of the study, and limitations. Chapter II of this study is the literature review, and it contains information associated with the relevancy of providing pre-k educational opportunities for children. Studies in this literature review detail the following areas: Sociohistorical perspectives of Head Start and early childhood programs, school leadership perspectives on school readiness and pre-k, opportunities for childhood development, types of early childhood programs in the United States, funding sources for early childhood, initiatives and funding for universal pre-k programs, state based pre-k programs and impactful outcomes, and the summary of the literature review. Chapter III describes the research design, population, sample and participants, instruments, procedures, and data analysis. Chapter IV explains the results of the study. Chapter V consists of the discussions, conclusion, recommendations, and suggestions for further research on this dissertation topic.
CHAPTER II

LITERATURE REVIEW

The literature review provides insight on factors influencing the development and implementation of pre-kindergarten (pre-k) programs. Pre-k programs generally refer to having an early start to education among children who are aged four. These early readiness programs are intended to prepare children to successfully enter elementary school prepared for kindergarten (Barnett, Jung, Youn, & Frede, 2013). Because of the need for preschool aged children to be prepared for school entry, school leaders are faced with the challenge of having to address ways to serve students who have never attended pre-school once they enter school unprepared for kindergarten (Abel, Talan, Pollitt, & Bornfreund, 2016). This comes as a challenge for school leaders, because as instructional leaders principals are responsible for ensuring their schools are making academic growth.

Children are in need of early preparation for school prior to kindergarten, because of high stakes testing requirements associated with student growth and academic achievement. Growing recognition for pre-k programs across the United States is becoming more widespread because of strenuous testing requirements. Therefore, many states are beginning to support the idea of school readiness for pre-school aged children (Williams, Landry, Anthony, Swank, & Society for Research on Educational Effectiveness, 2009). Wide-spread support of pre-k education will afford further opportunities to gain access to an early start to school.
In addition to this, research studies suggest pre-k programs are also very beneficial for children who come from disadvantaged backgrounds; as a result of this, early entry to school could diminish the trends of future poverty when children receive an early start to education (Barnett, 2013). Children who come from poverty-stricken families are not as prepared for school, because their parents lack the knowledge and skills needed to help their children properly develop academically. Therefore, there are instances when children, who are economically disadvantaged, have not been exposed to necessary skills to succeed when they enter school as a result of their parents being uneducated.

**Sociohistorical Perspectives of Head Start and Early Childhood Programs**

**Cultural Perspectives**

The history of children being taught by their families and from their cultural backgrounds dates back to early civilization many years ago. According to Roopnaire and Johnson (2013), as the history of the United States dates back to a time when Native Americans were the only inhabitants in this country, the educational system targeting the young population of learners has transformed to make strides to homogenize a desired system of learning for all cultures of students who are currently educated in this country. However, with there being so many children in the United States, who are from various cultural backgrounds, it has become increasingly difficult to build systems of learning uniquely devoted to all learners. “The Native Americans had a strong tribal and family system. They codified methods of preparing, educating, and inducting young children into the skills, knowledge, and rituals they needed to become functioning members of society (p. 3).” The growth and development of children is not just a
current trend regarding the need for children to learn, because the education of children has always taken place but has varied among cultures.

Findings from Roopanire and Johnson (2013) explain how difficulties associated with addressing the needs of children in the arena of early childhood development stem from children speaking in dialects other than the English language. Teachers, students, and parents share diverse cultural experiences which make it increasingly difficult to bridge gaps between schools and home. It is difficult to bridge gaps between school and home as a result of educators and families not sharing the same cultural experiences. Roopanire and Johnson (2013) also report that wide-ranging religious beliefs and backgrounds can also get in the way of being able to build appropriate systems of learning geared towards meeting the developmental needs of children in early childhood educational programs. Because those families and educators do not share the same backgrounds and beliefs it can be difficult to understand each other, making it hard to effectively communicate and make proper connections from school to home. However, in order for the United States to build effective systems of learning for children who are considered to be English Language Learners (ELL), living in poverty, racially different, etc., it becomes evident the United States has to examine ways to properly develop America’s early childhood educational systems (Roopnarine & Johnson, 2013). Therefore, educating children at early ages is of significant importance, and ways in which children learn plays a pivotal role in how early childhood educational systems have been developed and transformed in the United States from past to present.
As children and parents of these children, from numerous cultural backgrounds in the United States, prepare to be educated careful consideration to language barriers should be considered. According to Hyun (2007), language is such an important aspect in how children learn and develop in society; early childhood educators must be aware of the cultural challenges in which children and their parents will face as they seek ways to enhance the educational development and backgrounds of their children at early ages. Parents will face challenges because they may not feel comfortable having to transition their children from home to school, and they may not know how to communicate their desires for their children to learn. Literature review findings suggest although children learn a wide array of information from their cultural environments, the preschools in which these children enter are also responsible for providing children with safe learning atmospheres which will support children and their cultural barriers (Hyun, 2007). Teachers can provide safe learning environments for children in these instances by showing and teaching diversity and respect for all whom are different.

Hyun (2007) indicates so many children enter school from varied multicultural perspectives which can make it very difficult to address the complex needs of these learners. However, as educational systems have further developed and evolved, it has become evident that all communities of learners, regardless of cultural backgrounds, disabilities, religion, etc. must learn to come together for the benefit of being educated early on in life. Teachers in preschools can teach all to come together in classrooms by designing lessons which explore and share the backgrounds of all individuals in a class. If children are going to be properly educated when they enter school, diversity must be taken into consideration by those educating the students.

Additionally, the teachers responsible for teaching diverse populations of students must
be supported and trained on ways to incorporate effective means of showing respect for all learners. According to Hyun (2007), multiculturalism is a significant aspect of being able to educate pre-school aged children. While attempting to educate this vulnerable age group of children, all parties involved should take into consideration existing cultural differences.

Henceforth, working to provide children with meaningful learning opportunities, which are developmentally appropriate, can be approached by teachers gaining a better understanding of their students’ cultural preferences in order to address the needs of diverse learners.

Edwards (2005) indicates that Vygotsky’s theory on how children learn according to the ways in which they are taught to interact and socialize within their cultural communities is of significance. This aforementioned theory refers to Vygotsky’s social development theory, which indicates that children learn and develop best from their social interactions with others (Edwards, 2005). Therefore, those who subscribe to the philosophies of Vygotsky will argue that the sociohistorical knowledge and tools within a community equip children to learn on two platforms which are in their social plane, and then on to the psychological phase. This Vygotskian belief is referred to as the intrapersonal and interpersonal planes of development within children.

Henceforth, it is important to note that adults play a unique role in how children learn, develop, and obtain new knowledge. Edwards (2005) states the following regarding the role adults play in the education and development of children:

From this perspective, sociocultural theory represents a view of development in which interactions between children and adults are viewed as crucial to the process of knowledge acquisition, whereby knowledge itself is defined according to the
When children enter this world at birth, they begin to develop a way of life according to the customs of the adults in which they are reared by, and these are their initial phases of learning.

As Vygotsky’s views about child development have progressed into the current trends of early childhood educational focuses, the idea of sociocultural development among children has been furthered by Rogoff (Edwards, 2005). Rogoff’s theory of child development suggests there should be an added concept to Vygotsky’s two planes, which is the process of participation, and this idea indicates how children along with their sociocultural backgrounds must cooperatively interact in order for knowledge and learning to take place (Edwards, 2005). This essentially means children should be active participants of their learning process along with the adults who are teaching them.

As children enter pre-school classrooms it is essential for teachers to foster learning environments which function in efforts to embrace the cultural differences children bring to the classrooms. According to Gichuru, Riley, Robertson, and Park (2015), embracing the diverse cultural backgrounds of children in pre-school classrooms helps children to develop and further understand their true identities. It also allows other children opportunities to get to know their classmates and grow to respect the backgrounds of those who are different from them. Promoting positive classroom environments for children which allow them to celebrate who they are, generates a positive environment for learning to take place, and children will in turn benefit from having these opportunities presented to them by their teachers (Gichuru, Riley, Robertson,
& Park, 2015). Children will gain an appreciation for school when they feel their backgrounds are accepted and respected by their teachers and peers in their classrooms.

However, not all teachers are equipped to address the idea of providing students with culturally competent learning environments. According to Han, West-Olatunji, and Thomas (2011), many of the children entering early childhood settings are different from those who teach them because the majority of teachers in the United States are white females coming from backgrounds which are vastly different from those of the students. As a result of this, many of the students in which these white teachers are responsible for teaching, living in low socioeconomic communities, do not share the same educational values or backgrounds (Han, West-Olantunji, & Thomas, 2013). Therefore, teachers should have a good understanding of who they are by accepting their customs and beliefs before they will be able to enter into a school environment and properly address the cultural concerns and needs of their students who are differed from them.

In order to strengthen the development and knowledge of children of in their early years, educators must become culturally competent. The National Education Association (2008) states the following:

Cultural competence is the ability to successfully teach students who come from cultures other than our own. It entails developing certain personal and interpersonal awareness and sensitivities, developing certain bodies of cultural knowledge, and mastering a set of skills that, taken together, underlie effective cross-cultural teaching (p. 1)

Teachers are responsible for instilling skills and values in their students, and they can successfully do so when they take the time to embrace and respect existing cultural differences.
Educators of early childhood education institutions should be trained on ways to effectively support the ideology of cultural competence, skilled on what it means to be culturally competent, and focused on methods of establishing environments for students which are centered on making children aware of the unique differences all children bring to classrooms (Han, West-Olantunji, & Thomas, 2013). This indicates that educational leaders should take the time to provide professional development to educators in support of cultural competence.

Supporting children at the early stages of development, with the concept of cultural competence in mind, helps children to better understand the importance of diversity in pre-school education (NEA, 2008). Doing so will help students to grow into further systems of learning without children being afraid to embrace their differences while respecting how others are different as well. This leads to systematic productivity for effective learning and teaching in early childhood facilities (Han, West-Olantunji, & Thomas, 2013). Having systematic productivity in early childhood settings will benefit children as they prepare to enter school.

Cognitive Development

The nature of how children learn and become literate dates back to the early 1700’s, and many theorist and philosophers have studied and explored concepts regarding how children best acquire information and cognitively develop between the stages of birth to entering school (Morrow, 2015). The need to further understand how children best learn and develop helps assists educators with providing children proper developmental school skills upon entering school. Currently, cognitive development in early childhood education is viewed from a sociocultural perspective which takes into account the socioeconomic backgrounds of children (Burger, 2010). This indicates the importance of educators having an understanding of where
children come from and what they are accustomed to prior to them entering school. Loop (n.d.) describes cognitive development as ways in which children grow and develop over time, and this time frame includes the following: 1) capacity building in children from infancy 2) on to becoming a toddler and a preschooler and 3) on to further development during a child’s later years in life (Loop, n.d.). Through these different developmental stages, children learn a wide array of things based on their interactions with the environments in which they live, and children should be immersed in experiences which help them develop into thinkers, problem solvers, and those who enter school ready to explore (Loop, n.d.). Therefore, the cognitive development of children plays a critical role in a child’s ability to successfully function as they prepare to enter school.

Furthermore, cognitive development in preschool settings should consist of policy makers developing opportunities which embark upon a mission to address all areas of developmental needs for children in order for them to be able flourish as young learners. In a review of literature conducted by Gormley, Gayer, Phillips, and Dawson (2005), studies suggest when children are provided with learning experiences geared towards targeting language development, skills development in the areas of reading, writing, and arithmetic, as well as having programs designed to develop social aspects of learning children will make gains academically as they progress through school. Exposing children to academic and developmental skill content in various areas prior to school entry will have students better prepared for these areas once they enter school. Additional findings indicate when educators take the time to address the cognitive needs of preschool aged children they are better equipped to take responsibility for learning while also making connections which allow children to
remember information acquired throughout the process of learning (Chatzipanteli, Grammatikopoulos, & Gregoriadis, 2014). Children will be able to be more responsible learners as a result of being taught ways in which they should think and express content they have learned.

More specifically Newberger (1997), shows how neurological imaging of the brain, in regards to the development of the brain and cognitive functions, dating back to the 1980s and 1990s, reveals how the complex structure of a child’s brain functions and develops. Neurological imaging has allowed scientists to look at images of a child’s brain in order to see how the brain is wired for learning. Additionally, brain research suggests this organ of the body also controls how children tend to grow and develop with nature and nurturance working together to guide the general outcome of a child’s future. Newberger (1997) states the following:

Stimulated in part by growing concern about the overall well-being of children in America, the findings affirm what many parents and caregivers have known for years (1) good parental care, (2) warm and loving attachments between young children and adults, and (3) positive, age-appropriate stimulation from the time of birth really do make a difference in children’s development for a lifetime (p. 4).

With findings suggesting how children need guidance and nurturance in order for children to grow and have positive experiences with learning research studies on the brain also reveal how the development of the brain is a genetic process which continuously develops based on functions associated with the growing child’s stimulus and environment (Shonkoff, 2010). Therefore, children need access to environments which positively stimulate their child’s ability interact and think. According to Frey and Fisher (2010), in order for a child’s mind to
continuously develop, children must be taught and instructed on information one is expected to learn. This essentially means ways in which students learn should be done with the implementation of modeling and repetition.

It is very essential for early childhood educators to understand how children learn and develop, and the important role current research plays on the neurological development of children in education. According to Frey and Fisher (2010), neurological research findings suggest early childhood educators should be aware of the role in which they play in the overall development of a child’s mind, and they should generally always attempt to appeal to a child’s innate desire to attain knowledge and skills. Additionally, early childhood educators must gain a better understanding of how a child’s brain is structured and wired to take on new knowledge and experiences as it matures by way of nature and nurturance (Frey & Fisher, 2010). By educators having a good understanding of how children are structured to learn, they will be better able to present information to children in ways in which the content acts as a prerequisite for further learning to occur.

**School Leadership Perspectives on School Readiness and Pre-K**

When school leaders are highly effective they have the ability to positively impact the academic achievement of students within schools, and they are able to positively shape and mold schools to best meet the needs of their students (Jackson, Remer, & Hunt, 2014). However, there is a need for elementary school leaders to develop schools having to serve those who have never attended school before, referring to kindergartners who lack pre-school experiences. Developing goals to accommodate students who have never attended pre-school can be a daunting task for
school principals because they are required to come up with strategies to increase the academic performance of students prior to third grade (Abel, Talan, Pollitt, & Bornfreund, 2016). In order for school leaders to come up with strategies to assist children in making academic gains, they must have an understanding of the school’s community, family structures, socioeconomic backgrounds of the children entering school, and a clear understanding of the fact that being prepared means more than children being able to meet the challenge of taking test.

Elementary school administrators advocating for school-readiness and pre-k programs should increase the awareness of parents, teachers, and stakeholders in these areas. In order for elementary principals to advocate for early-childhood programs and initiatives, they must be willing to recognize ways in which children grow and develop into being prepared for school (Docket, 2016). In addition to this, school leaders must be willing to set high expectations for every child in their school regardless of a child’s learning experiences prior to them entering kindergarten. Elementary school principals should also work diligently to increase the capacity and awareness of all regarding the importance of understanding school readiness, and what this means in terms of educating children when they enter school (Docket, 2016). Principals taking on active roles in advocating for school preparedness can justify the need to promote pre-k.

Opportunities for Childhood Development

There are many families who struggle to provide their children with adequate opportunities for early childhood development. According to Zhai, Waldfogel, and Brooks-Gunn (2013), it is imperative for parents to understand all services afforded to children who attend pre-k programs because this is a critical time frame for a child’s ability to learn. This
time-frame for learning is critical because after pre-k children will enter kindergarten, and at this point children will be held accountable for their learning in ways in which they never have been before. Children will be held accountable for receiving expected performance levels on skills test, and they will also be given grades for their academic performance when they enter school.

Many programs such as pre-k in schools, Head Start, and other child care facilities differ based on where they are located in the United States. In a study conducted by Zhai, Waldfogel, and Brooks (2013), a secondary data analysis was conducted in order to determine the effects Head Start and pre-k programs have on children in regard to school readiness across regions. Results from this study suggests children who attend Head Start and pre-k programs have higher levels of skills when they enter school as opposed to children who do not attend these programs (Zhai, Waldfogel, & Brooks-Gunn, 2013). Based on these findings, attending some form of pre-k is more beneficial to children as opposed to them having no form of pre-k background prior to school entry.

Though studies signify when children ages three and four attend a head start or pre-k program, they will perform significantly better than their counterparts academically. An additional study examines the outcome of student performance when children first attend head start at the age of three followed by entering a pre-k program aside from Head Start at the age of four. Jenkins, Farkas, Duncan, Burchinal, and Vandall (2016) conclude from their study when children are placed in early childhood education programs improvements in skills and development are made among participants, but not at significantly high levels. Therefore, researchers from this study indicate students who attend pre-k programs are no more developed academically than those who have not attended any form of pre-k.
Academic Readiness

Lunenburg (2011) explains in a study, referring to the term academic readiness generally implies that when children prepare to enter the next phase in their life academically, they will be prepared for what this phase has to offer. When children are adequately equipped with what it takes to make proper transitions to school, and move forward as they enter school, this will pose positive learning experiences for children. However, many children are not well equipped or considered to be academically prepared because they enter school already behind in their developmental skills associated with language and social functioning abilities. Extensive studies on school readiness indicate that children’s parents play a very important role in how successful their children will be once they enter school, and findings from studies suggest parents should be supportive, provide their children with cognitive stimulation, and positively interact with their children (Lunenberg, 2011). Parents must at all times put forth an effort to take part in the education of their children because the schools alone cannot be solely responsible for the development of children.

By parents providing their children with each of the three aforementioned needs, children have a better chance of entering pre-school programs and moving on to kindergarten experiencing academic success (Lunenberg, 2011). Additionally, parents must be prepared to make the transition from home to school with their children; when a child leaves their normal routine of being surrounded only by family those whom they are familiar, this transition alone can be very difficult (Brotherson, Hektner, Hill, Saxena, & Society for Research on Educational Effectiveness, 2015). Transitioning from home to preschool settings is difficult because of the social adjustments children have to make, and parents must be a part of this transitioning phase.
Additionally, parents along with teachers must work together setting high expectations for children indicating the need and desire for a child to be nothing less than successful in school.

In a study conducted by Brotherson, Hektner, Hill, Saxena and Society for Research on Educational Effectiveness (2015), on a school readiness program referred to as *Gearing Up for Kindergarten* findings from the study suggest each of the following:

- Adjusting for differences in preschool attendance and parent education, differences in outcomes over time were tested. The program group was assessed before beginning the program (“pre”) and at the completion of the program (“post”); the control group was assessed twice using a similar time interval. Results showed that the control group respondents scored at a more advanced level at pretest than did the program group and generally stayed more advanced at post-test.

- The children who participated in the program group showed significantly greater improvement over time on academic skills than did the children who did not participate (control group), as reported by parents.

- Parents of children in the program reported increasing the time they spent reading with their child, whereas control parents did not show any increase over the same period of time. Thus, the program assists parents in increasing their early literacy activities with children prior to kindergarten, while parents without the program did not show any increase in this area.

- Children who participated in the program also improved at a greater rate than children outside the program in their familiarity with school, as reported by
parents. These outcomes also held for children from families with low socioeconomic status.

- Within the group of children participating in the program, we compared post-test scores of those with low SES to the scores of all the rest. On all but one measure of child outcomes, there were no differences, meaning that the program had as strong an effect for those with low SES as it did for everyone else.

- To compare the program models, a comparison was made between outcomes for children in the differing program types. Participants in the 16-week program that was split into two 8-week sessions fared better on most outcomes than participants in the 10-week program that ran continuously. This is logical considering the fact that more time is spent with children in the 16-week program and there is more opportunity for program impacts to occur (p. 4).

Findings suggest that children who participated in the study exhibit increased skills academically and they are better prepared to make a transition into kindergarten. Therefore, when children participate in structured programs designed to help them develop and adjust to school, they have a better chance of exhibiting academic readiness (Brotherson, Hektner, Hill, Saxena, & Society for Research on Educational Effectiveness, 2015). It is important for children to have experiences which will help them learn to properly adjust to school. Because kindergarten is such a critical time for students, teaching children ways to adjust prior to entry will help students settle and learn routines necessary for learning to occur.

The backgrounds of children have a significant impact on how well children are able to perform once they enter school. According to Burger (2013), the backgrounds of children are
varied from groups of those who come from poverty stricken environments to those coming from homes of parents and communities that are more affluent, and preschools in the United States were initially structured and mainstreamed into society to target those from disadvantaged situations and backgrounds. It is essential for research to point out how children should be developmentally sound prior to entering school, but because of many unfortunate and unforeseen circumstances children encounter this is not the case.

Children are entering school not being academically sound leaving those responsible for educating these children with the responsibility of taking children to higher levels of development in order for them to be able to successfully perform academically (Burger, 2013). When children developmentally lag behind their peers, it poses a potential threat to the child’s ability to function and learn. From this time, gaps in academic achievement start and take on a significant increase as students continuously progress in school while being compared to their peers who come from affluent backgrounds (Burger, 2013). These findings indicate children coming from prosperous familial structures experience more success in school than their peers who do not.

According to Roopnarine and Johnson (2013), early childhood education in the United States derived from European roots, but from a multicultural perspective, children have been long educated in varied traditions based on their ethnic backgrounds and upbringings. Meaning the experiences of the African American children will differ from the experiences of their white peers, etc. because of how life is structured from a cultural perspective. Also, teachers must understand this in order to better educate children according to cultural awareness and upbringings. Although multiculturalism plays a huge role in early childhood education, it is
important to point out how the literature further indicates early childhood education theories and programs have continuously developed in efforts to provide all children with a quality foundation (Roopnarine & Johnson, 2013). Early childhood educators must find ways to balance the curriculum in order to provide students with the best educational experiences possible by delivering content in varied ways to address the needs of all cultures.

Children ages three and four have long attended pre-school programs in the United States, and attendance in these programs has been on the rise since 1965 (Barnett & Yarosz, 2007). The numbers of families enrolling their children in pre-k programs in the United States are on the horizon as funding in many states are made available to those in need (Barnett, Lamy, & Jung, 2005). In a study conducted by Barnett, and Yarosz (2007), findings attribute the steady rise of preschool enrollment to mothers being employed and needing daycare services for their children and to educated parents having a respectable understanding of how important it is to educate their children prior to school entry. These findings indicate that mothers who work must have a place for their young children to go when they are working. The findings also suggest some parents just have a good understanding of how important it is to provide their children with some form of education as early as possible. However, the study further indicates there are discrepancies which exist among families with high incomes verses those who live in poor circumstances (Barnett & Yarosz, 2007). These children are unequally educated in preschool programs starting at an early age.
Types of Early Childhood Programs in the United States

Head Start

The Head Start Program is currently the Nation’s largest preschool program which is also federally funded by the government (Duncan & Magnuson, 2013). This program began in 1965 and it has been in existence longer than any other early childhood program in the United States (Armor, 2014). It is essential to point out the existence of Head Start came about when Lyndon B. Johnson initiated the War on Poverty in the United States (Armor, 2014). The War on Poverty were various initiatives set forth by President Lyndon Johnson, a little over fifty years ago, to help people overcome circumstances causing them to be poor, and the Head Start Program was one of the biggest developments of this initiative. Hudson (2015) explains that as of today, the United States is working effortlessly to address issues associated with poverty, and President Obama states, “our challenge is to make Head Start even stronger, and to help more children and families benefit from its good work.” (n.p.) With the help of the government, Head Start will continue to provide children and families with early childhood learning experiences which will assist in reducing the likelihood of being uneducated and living in poverty.

According to Duncan, Magunson, and Murnane (2016), Head Start was mainly designed to provide low-income families with many forms of support in addition to educating young children prior to them entering school in the following areas: health, nutrition, and social services (Duncan & Magnuson, 2013). Programs such as Head Start are vital in order to enrich the educational backgrounds of children who come from economically disadvantaged families. Children who are afforded the opportunity to attend Head Start programs offer their families a chance to expand their child’s educational development.
Domitrovich, Morgan, Moore, Cooper, Shah, Jacobson, and Greenberg (2013) also indicate in an evaluation study, which sampled Head Start centers on a national level, determined that children attending this program experience advances in language and literacy skills. Researchers describe how the Head Start Impact Study findings illustrate that children in Head Start attendance also make cognitive gains, but the study encourages other researchers to examine other practices and programs related to Head Starts focus on areas of learning such as literacy, math, social-emotional learning, and executive functioning. The other areas of instruction are in need of further examination in order to determine how well students are being reached and prepared in these areas of instruction in preparation for entering school.

Pre-K

Whereas Head Start programs afford children a chance to start school one or two years prior to entering kindergarten, preschool programs are designed to do the same (Jenkins, Farkas, Duncan, Burchinal, & Vandall, 2016). States which offer pre-k programs are designed to allow children to enter at the age of four, or a year prior to the start of kindergarten. However, pre-k programs are presently not funded alone by the federal government, and these programs are essentially designed and paid for by states in their own respect. Pre-k programs provide positive learning experiences for children leading to future gains in academic performance among those who participate in these programs, and children in attendance become very familiar with the day to day experiences of being in school (Jenkins, Farkas, Duncan, Burchinal, & Vandall, 2016). With so many demands for children to make academic gains in school, children need a chance to enter these programs in order to have an early start to future educational experiences.

Ansari and Winsler (2014) also suggest preschool programs provide students with
educational experiences, prior to entering kindergarten, which promote school readiness. The researchers explain that although pre-k education is necessary for all students regardless of their race or socioeconomic backgrounds, unlike the Head Start Program, children living in poverty are often not the ones who benefit from pre-k attendance (Ansari & Winsler, 2014). These findings indicate that schools who offer pre-k programs have the benefit of choosing who will attend these programs; therefore, the children selected from pools of applicants may not be academically disadvantaged. If a school district only offered one section of pre-k in these situations, this would eliminate opportunities for children who are desperately in need of entry. Children who are plagued by disadvantaged circumstances from the structure of their families will benefit from having their children placed in pre-k programs.

**Funding Sources for Early Childhood Education**

**Federal Funding Sources**

According to Noble (2013), public funding sources for early childhood education and pre-k programs generally come from three sources: the states, funds from special education under the realm of the Individual with Disabilities Act (IDEA), and also from the federally funded Head Start Program. The Department of Education has put forth tremendous efforts to increase funds made available to the public in support of early childhood education. These funding sources have been made available to benefit students with disabilities, and for children of families in need of financial support to educate their children at early ages due to living to poverty (Noble, 2013). If children are disabled, they are entitled to receive services which are provided by local school districts from birth to the age of twenty-one, as required by laws.
associated with the Individuals with disabilities act (IDEA), and the families of these children do not pay for these educational services (Roopnaire & Johnson, 2013). Additionally, families who live in poverty can benefit from seeking funds to educate their children prior to entering kindergarten if they are unable to afford to pay cost associated with private daycare services.

According to Lu (2014) many states throughout the United States are working in support of the federal government in order to provide children with quality educational experiences prior to them entering kindergarten. Additionally, politicians along with President Obama agree that children will benefit from being allowed the opportunity to attend pre-school, but funding for this bi-partisan effort will be difficult to maintain over the years to come. Lu (2014) explains many people who oppose the idea of publically funding pre-k programs argue there are no long term benefits of offering pre-k education. There is no justifiable reason to support the ideas that educating children early on will diminish poverty rates, school dropouts, and increased prison rates as a result of lacking proper educational backgrounds.

It is additionally important to note that many misconceptions regarding how pre-k programs are funded is why some oppose the idea of supporting pre-k initiatives. According to Mead (2015), one of the misconceptions about pre-k is that state pre-k programs are universal programs. This notion about state pre-k education being universal pre-k is incorrect. Offering universal pre-k would mean that all children within states, who offer pre-k programs, would be allowed to attend at the age of four if these programs were truly universal. States are nowhere near being in positions to offer state pre-k programs, and states who offer basic pre-k programs are not severing many of the children who are eligible to attend.

Mead (2015) further explains other misconceptions regarding pre-k which indicates that
all children who are able to attend pre-k programs would have to attend these programs in public school settings. Private day-care facility owners specify that this notion could be detrimental to private and community based pre-schools if all funds go for pre-k services are divided among public schools. This is a misconception because the federal government has provisions on how pre-k funds can be dispersed among various early childhood facilities. These theories also imply that if parents want their children to attend a pre-k programs there would be no other way for them to do so unless they have their children attend public schools. This is a misconception because these actions would limit parents’ right to choose how their children should be educated (Mead, 2015). If parents do not wish to place their children in public schools there will be other options for in states offering federal funds for pre-k education. Parents who can afford to pay for their children’s early childhood expenses may not wish to have their children placed in public schools; therefore, there is a mix in how pre-k programs are afforded to children because the private owned facilities will also have opportunities to gain access to these funds as well.

**Privately Funded Sources**

According to Great Schools (2016), one of the sources of funding for pre-k education is used for private pre-schools. Private preschools vastly differ from the public school because of how they are designed to function, how they are funded, and due to ways in which they serve their students. When thinking in terms of how children should start their education, it generally comes down to the wishes of the parents. Parents must decide if private early childhood centers are appropriate for their children, or they can also consider the benefits of having their children educated in public schools. Private school education verses public school educational settings comes down to a families preference for the education of their children (Great Schools, 2016).
Regardless of the decision that has to be made there are both pros and cons associated with either choosing.

According to Enlighten Me (n.d), children can benefit from attending private schools. Students will be placed in smaller class sizes which generally indicate teachers will have more time to focus on the individual needs of students due to have a lower teacher student ration. Children can benefit from having more one-on-one time with the teacher as they will be able to better address teaching and learning concerns. Enlighten Me (n.d.) states the following:

Another advantage of privately funded preschools is that parent involvement is often much stronger than it is in public schools. This is so for two reasons: private school authorities encourage parent participation in many school activities and parents of private school children often commit themselves fully to having a say in their child’s education (n.p.).

Because parental support in schools is so important, especially when children first start school, parents may choose private schools over public schools in order have more of a voice in the education of their children.

Although teachers may have more time to focus on the individual needs of student in private schools due to having lower numbers, parents will be responsible for the cost associated with these services (Great Schools, 2016). Private schools are primarily paid for and funded by way of fees associated with the cost of tuition. These schools do not receive funds from the government to operate, and they have to primarily find other means to operate such as having fund raisers, collecting fees from tuition, and from other private organizations which support private schools. Therefore, the private preschools are not responsible for adhering to policies
associated with public schools due to the funding sources received from the government. Private schools do not have to adhere to the same mandates as public schools because federal dollars associated with the operations public schools are not associated distributed to the private schools. This gives the private schools the ability to operate how they choose to free of being dictated to regarding operations by the government.

Greater Schools (2016) explains that private schools are being funded by fees associated with tuition cost. Additionally, they obtain monies to operate by way of grants, fundraisers, and from additional support systems throughout the communities in which they serve. Some private schools are also affiliated with churches and religious organizations, and these private schools are receiving funding from these religious affiliation. Fees associated with children entering into private schools can be very costly for parents, but those who choose the private sector do not have to associate themselves with mandates associated with public school education.

With many states and school districts offering tuition free entry into pre-k programs, there are some privately operated preschools loosing students and money. According to Samuels (2014), a private daycare owner in the state of Louisiana has expressed concerns with some of her four year old preschool leaving her school to attend the new pre-k program which is offered in the local school district. Therefore, the owner of this privately operated facility feels she is currently in competition with the public school due to funds available for four year old children to attend school for free.

Advocates for early childhood care feel there is a need for all children to have access to preschool by the time children reach the age of four (Samuels, 2014). However, owners of privately operated centers express their fears of pre-k becoming universal in all states. This could
in turn make it difficult for privately run centers to keep their doors open due to the lack of funds needed to remain open if children leave privately operated centers for public schooling. Additionally, there is a concern regarding the loss of funds in privately operated preschools leading to a loss of employees in these facilities to public schools.

When public schools implement pre-k programs, they will need certified teachers to teach pre-k in these schools. According to Samuels (2014), implementing pre-k programs universally will also lead to a loss of teachers in the charter schools. As a result of this, daycare owners will not be able to keep all staff on board if there is a decline in their enrollment as a result of state wide pre-k initiatives taking place. The decline in enrollment will occur as result of parents no longer have to pay tuition for their children who can attend pre-k publically free of charge.

**Initiatives and Funding for Universal Pre-K Programs**

As policy makers across states seek to find rationales for supporting pre-k programs, research is key in providing sound justification. Strong findings from studies indicate that in order for states to embark upon the costly effort of providing universal opportunities for pre-k programs, systems of development must be well planned out and of high quality to assure success (Child Care I, 2007). States will need to know where the money is going to come from to cover state cost associated with funding pre-k programs, and states must have adequate future plans on ways to maintain funding for pre-k. Furthermore, investments in young children are essential in order to assure children are being adequately prepared to be successful in school by the time they enter third grade (Kahn & Barron, 2015). Therefore, investing in universal pre-k
initiatives will benefit children because all children in the United States who are four years old will have the opportunity to enter school prior to entering kindergarten.

As a result of the cost associated with offering pre-k, research suggests the federal government will not likely move to pass initiatives which will offer pre-k programs to children across the United States (Kahn & Barron, 2015). A move such as this could lead to years of uncertainty about where money will come from many years from now to maintain funds universally. Data from the National Institute for Early Education Research show cost associated with educating one child per year in pre-k at $5500, and in order for pre-k to ever become federally funded building constituencies among many supporters will be key (Kahn & Barron). Support from constituents in favor of pre-k becoming federally funded will be necessary due to the high cost associated with long-term efforts to start this initiative and continue it.

However, President Obama has embarked upon the mission to expand pre-k offerings throughout the United States, and his proposals seek to acquire up to $75 billion over the next ten years in order to expand pre-k opportunities across the United States (Klein, 2013). The President’s initiative will gain funds for this pre-k initiative by adding new taxes on the sale of tobacco products. In order for states to participate in this initiative, each state will have to comply with standards and guidelines for receiving these federal funds, and not all states will initially buy into the idea in order to offer pre-k programs (Klein, 2013). The states who do not fully wish to comply will be reluctant to do so because of the high cost states will incur as a result embarking upon the mission to fund pre-k programs throughout states.

Even though offering pre-k programs to children universally proves to be very costly, in the long run investments will be well worth the money spent. According to Yoshikawa,
Weiland, Brooks, Burchinal, Espinosa, Gormley, and Zaslow (2013), many children such as those who come from middle class families, disadvantaged families, special needs children, and ELL students can all benefit from having the opportunity to participate in preschool programs which offer quality educational practice. Having the opportunity to participate in pre-k programs will be beneficial to these groups of students because they will have early entry into school. Early entry is necessary for these students in order to address deficits they have in regard to their developmental circumstances and inabilities to function on the same level as their peers who don’t fall into these subgroups.

According to Yoshikawa, Weiland, Brooks, Burchinal, Espinosa, Gormley, and Zaslow (2013), there are presently 42% of children, age 4, are attending publically funded preschool program. Research findings indicate that children who attend various forms of pre-school generally benefit in terms of developing early skills language, math, and literacy. Therefore, if children are allowed to attend pre-school programs as soon as they turn four they will have a better chance of learning skills which will help develop their skills in these areas, and these children will acquire new knowledge daily preparing them for school entry.

In contrasting theory, oppositional findings for pre-k initiatives indicate there should not be bipartisan efforts in support of allotting federal funds for pre-k programs. According to Schlafly (2014), science indicates that pre-k programs do very little to show that children will make big gains in the future academically if they attend pre-k programs. In addition to this, there are no significant studies available to show signs of middle class children benefitting from attending pre-k programs. Schlafly (2014) also indicates two highly favorable studies regarding preschool education, called the Perry Preschool Project and the Abecedarian Project, had a very
low number of participants in each study; neither of these two studies have every been replicated by other researchers. Therefore, research regarding the benefits of funding pre-k education does not substantiate reasonable evidence for supporting this initiative.

Growing concerns of funding appear to be the most problematic issue when questions arise regarding the need to fund pre-k programs in the United States. According to Spradin, Conn-Powers, Wodicka, Indiana University, C.P., & Indiana Institute on Disability and Community (2013), researchers assume there will be challenges associated with trying to sustain public funding for pre-k education over a long period of time in the United States. This assumption exists because there is no way to assure that funds for long-term pre-k programs will be continued over long periods of time. Therefore, researchers explore the concept of implementing pilot programs for pre-k education in order to determine how well these programs will be designed to serve children prior to enrollment in kindergarten. These pilot program efforts will possibly assist in solidifying the likelihood of ways in which long-term universal pre-k programs throughout the Nation can be implemented and maintained.

With all of the debate over justifiable reasons to support the idea of pre-k education throughout the states, there currently only a few states that do not provide any funds in support of pre-k education programs. According to Parker, Atchison, and Workman (2016), these states that have yet to develop or support public funds to initiate pre-k implementation are as follows: Idaho, Montana, New Hampshire, South Dakota, and Wyoming. Henceforth, the other forty-five states have embarked upon a mission to publically fund pre-k programs showing partisan support for the need to increase funding as a national effort and priority (Parker, Atchison, & Workman, 2016)
State Based Pre-K Programs and Impactful Outcomes

Tennessee Pre-K Program

Although there have been numerous findings suggesting high cost effects associated with pre-k programs, there have been a limited amount of studies showing the effectiveness of existing public pre-k programs. Lipsey and Society for Research on Educational Effectiveness (2014) explains how a partnership was formed with the Tennessee Department of Education in order to study the state’s voluntary pre-k program. The study aimed to determine the overall effects of the state’s pre-k program, and this study needed to be conducted because there are very few existing studies which show the overall effectives and benefits of offering pre-k to all students eligible for entry.

Tennessee’s pre-k program was extended to 934 classrooms which served more than 18,000 students who are considered to be at-risk children across the state’s 95 counties, in 133 out of 136 of the state’s school districts (Lipsey & Society for Research on Educational Effectiveness, 2014). Findings from this study suggest participation in the state’s pre-program have both positive and significant effects on children when they enter into Kindergarten and have participated in this program when compared to those who did not. The study reveals students who participated in this program have been assessed on achievement scales showing effect sizes which ranged from .10 to .46 (Lipsey & Society for Research on Educational Effectiveness, 2014). According to Lu and Weinberg (2016) affording students the opportunity to participate in pre-k programs not only increases students’ abilities academically, but this will aid in closing the achievement gaps which currently exist among children throughout their years in school.

Although studies indicate the effectiveness of the Tennessee’s pre-k program, an
additional study was conducted regarding this voluntary program. This study indicates that there are some variations which exist among the classrooms implementing the program (Farran, Bilbrey, & the Society for Research on Educational Effectiveness, 2014). Findings associated with a state report show Tennessee’s pre-k program needs more focused attention on how students are taught skills in vocabulary and language development skills. Even though there is recognition of pre-k participants having academic gains versus students who have not participated in the program, careful consideration of variations existing among the pre-k classrooms throughout the state need to be considered in order to improve the program as a whole (Farran, Bilbrey, & the Society for Research on Educational Effectiveness, 2014). Some of the variations which exist among participants in the student are associated with schools being different and the amount of academic gains students made in these schools. This study aimed to address the reason for these variations and to find ways to better monitor how pre-k is implemented throughout the state.

**Pennsylvania Pre-K Program**

Policy makers in the state of Pennsylvania feel children preparing to enter school need access to early childhood experiences which will lead to sustained academic success; therefore, the state of Pennsylvania has put forth initiatives to provide public preschool education to children from age’s three to four (Neuf, 2015). Universal pre-k in Pennsylvania is currently not available, but the state has a vision of seeking ways to make this a possibility, and policy makers and stakeholders within the state feel that making this option available to families would work in the best interest of children throughout the state (Neuf, 2015). Stakeholders also feel as if providing quality educational opportunities to children early on will help to overcome future
academic achievement gaps, assist children with the development of language and social skills, and also alleviate issues with increased rates of poverty throughout the state (Pennsylvania Department of Education, 2010). Therefore, the state of Pennsylvania will benefit from finding means of supporting a universal pre-k program in order to make serving all three and four year olds in pre-k a possibility for all.

According to the Pennsylvania Department of Education (2010), the state of Pennsylvania implemented a program called the Pennsylvania Pre-K Counts program, and findings indicate students who have participated in this program have made significant academic gains which can be attributed to participation in this program. In the year of 2009-2010, the Pennsylvania Pre-K Counts program executed an initiative to enroll children associated with living in poverty as well as having many other risk factors which can hinder children academically. However, the program managed to serve 81% of the state’s 402 school districts over 62 counties. Results from data collected on these pre-k participants indicate that the children made great progress while in the program, were prepared and ready to enter kindergarten, and they continue to excel in school academically upon exiting kindergarten (Pennsylvania Department of Education, 2010). Therefore, the program was able to prove why the state will benefit from making this a universal program designed to educate all children eligible to enroll.

**Universal Pre-K Programs**

The concept of universal pre-k dates back to 1965 and, as of today, there are not any states in this country mandating children under the age of five to attend pre-k programs. There are some states who offer the opportunity for children to do so. Lohman (2003) explains that
currently each of the following states offer universal pre-k programs to families some capacity: Georgia, Maine, New York, Oklahoma, Pennsylvania, Wisconsin, and Florida. All children within the boundaries of these states, meeting the necessary age requirements, can enroll in these programs without any risk factors associated with entry (Lohman, 2003). This indicates that there are no stipulations associated with applying, such as having to qualify for free or reduced price lunch or having a disability in order to attend. Parents are free to have their children enrolled regardless of other factors associated with the family structure.

Although some private day care owners have expressed concerns with Universal pre-k offerings in the United States, some states have chosen to initiate this effort and demonstrate how universal pre-k programs can be beneficial to all (Education Week, 2014). Currently, the state of Georgia is one of the few states to offer a universal pre-k program to families, and the general mission of this universal program is to provide early childhood services to all four year old children throughout the entire state of Georgia (Peisner-Feinberg, Schaaf, LaForett, & University of North Carolina at Chapel Hill, F.I., 2013). The children who participate in Georgia’s pre-k program are acquiring developmental skills and knowledge which will prepare them to enter kindergarten successfully upon completion of pre-k.

There are many interesting findings about Georgia’s universal program offerings which can clear up a lot of misconceptions regarding universal pre-k. According to Peisner-Feinberg, Schaaf, & LaForett (2013) First Georgia’s program, for children aged four, addresses the notation which claims children are denied the right to attend pre-k as a result of their families income levels. It does not matter if children come from families with low or high levels of income they still can attend Georgia’s program. Next, the universal system serves children in a
wide array of settings such as: the local schools, private centers, and blended Head Start programs. Additionally, during the years of 2011-2012, over 94,000 children across the state of Georgia were in attendance (Peisner-Feinberg, Schaaf & LaFott, 2013). Because of the success of this program, since 1995, the number of students enrolled in this universal program continues to grow.

According to Peisner-Feinberg, Schaff and LaFott (2013), an evaluation study was conducted in a random sample of 100 pre-k classrooms which included observations and assessments of language, literacy, math, general knowledge, and behavioral skills of 509 children within this random sample. Peisner-Feinberg, Schaff, LaFott, & University of North Carolina at Chapel Hill, F.I.,(2013) found each of the following in this study:

- Children exhibited significant growth during their pre-k year across all domains of learning, including language and literacy skills, math skills, general knowledge, and behavioral skills.
- Children who were Spanish-speaking dual language learners showed growth in skills in both English and Spanish, although their growth tended to be greater in English.
- Factors which predicted greater growth in skills included individual level of English proficiency, having a higher proportion of non-English-speaking children in the classroom, and attending a pre-k program in a local school system.
- The global quality of classroom practices was in the medium quality range, as measured by the ECERS-R.
• In the area of teacher-child interactions, classroom practices were stronger in emotional support and classroom organization than instructional support, as measured by the CLASS.

• In general, program, teacher, and classroom factors that were examined did not predict differences in the quality of classroom practices (pp. 3, 4)

Based on each of the findings from Georgia’s universal pre-k program, it can be concluded that universal pre-k programs can reach the goals in which the set out to obtain, which includes increasing the abilities of children’s functioning skills academically, emotionally, and socially (Peisner-Feinberg, Schaaf & LaForett, 2013). The study explains how children who are immersed in pre-k programs can reach academic and developmental goals further than what is expected or required. In general, educating students in order to prepare them to enter kindergarten academically prepared is possible with the implementation of well-structured, universal pre-k programs.

Summary of the Literature Review

Early childhood programs have long been in existence for the betterment of children’s skills, overall growth, and development which come from various backgrounds associated with a child’s family’s level of income as well as other factors. However, the federal government has focused attention on providing all children with access to pre-k programs in efforts to address school readiness issues and close academic achievement gaps. Although the efforts to effectively establish means of providing children with well-organized and effective childcare services have been very challenging, the need to do so is imperative (Howard & Council of Chief...
State School, 2011). This literature review provides insight on what pre-k programs have been designed for and to address issues associated with funding. The literature review provides insight on studies which have been conducted in order to show the benefits of states funding pre-k programs which have been designed for all children in various states. The literature review provides a rationale on why additional studies need to be conducted or replicated in order to address the need for universal pre-k programs with continuous support and funding efforts.
CHAPTER III

RESEARCH METHODS

Chapter III addresses each of the following areas: design, participants, instruments, protocol, procedures, and data analysis. The study explains details on how data was collected in order to address the research question and hypotheses. Next, the participant section of the dissertation provides insight on who was selected for participation in this study from schools in Mississippi. Furthermore, the instrument selected for this study consists of student test scores from the Mississippi Assessment Program (MAP) in reading and math. The procedures explain the steps the researcher followed in order to test each of the hypotheses associated with the research problem. Lastly, the data analysis section details which test was used for quantitative data collection purposes.

Design of the Research Study

The causal comparative design was used in this study to analyze the impact of attending pre-k on reading and math achievement for preschool aged children in selected Mississippi schools. The study investigates the impact pre-k attendance has on academic achievement by comparing the mean scores of the two groups. Pre-k attendance is the independent variable in this group, and the two categories associated with attendance are the pre-k attendee and non-attendee groups. These outcomes are the MAP scores for reading and math, and this is considered the dependent variable. Data collection in this quantitative study applied the
independent samples $t$ test in order to make group comparisons. $T$ test are applied to make a statistical analysis of two population means, where two samples are used with small sample sizes to test (Creswell, 2012). This allowed the researcher to determine if there was a significant difference between the academic achievement of students who attend pre-k programs in Mississippi and those who did not attend a pre-k program.

**Population, Sample, and Participants in the Research Study**

All student test scores solicited for use in this study were required to participate in state-wide testing in all Mississippi schools starting in third grade. Attendee data focuses on those students who attended a Mississippi pre-k program in 2011-2012. Non-attendee data focuses on those students who did not attend a Mississippi pre-k program. Non-attendee data collected does not account for whether or not students received some form of pre-k experiences from privately funded activities, academic focused daycare, and related kinds of pre-k programs.

Hence, the population selected for involvement in this study consisted of Mississippi elementary schools offering pre-k during the academic school year of 2011-2012. A total of fifty-two school districts met the criteria of offering pre-k during the 2011-2012 school year. Within these 52 school districts offering pre-k, there was a total population of 3,842 students who attended pre-k during the 2011-2012 school year. From the targeted population in Mississippi elementary schools throughout the state, a sample of current fourth grade student MAP scores in reading and math for the 2015-2016 school year was accessed. Power testing, using G Power 3.1, indicated a sample size of at least 351 data points were needed to represent both groups of pre-k attendees and non-attendees.

After attempting to recruit all 52 school districts, the researcher was able to receive
consent to participate from 10 school districts. All of the districts conveniently participating were asked to provide equal data points for pre-k attendees and non-attendees. After data was provided, the researcher had a sample size of 804 participants. The sample size consisted of 402 attendees and 402 non-attendees with reading and math MAP scores.

Additionally, to protect the anonymity of the participating school districts, their names are not included in the study, but are represented by the number of attendee data and non-attendee data. Table 1 shows participant representation along with the number of test samples provided for categorical groups in this study as follows:

Table 1
Overview of Participants and Samples Represented

<table>
<thead>
<tr>
<th>District Number</th>
<th>Attendee Data Reading/Math</th>
<th>Non-Attendee Data Reading/Math</th>
</tr>
</thead>
<tbody>
<tr>
<td>District 1</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>District 2</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>District 3</td>
<td>41</td>
<td>41</td>
</tr>
<tr>
<td>District 4</td>
<td>29</td>
<td>29</td>
</tr>
<tr>
<td>District 5</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>District 6</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>District 7</td>
<td>117</td>
<td>117</td>
</tr>
<tr>
<td>District 8</td>
<td>63</td>
<td>63</td>
</tr>
<tr>
<td>District 9</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td>District 10</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>

Totals = 10 402/402 (804) 402/402 (804)
The output data in Table 1 indicates there were 402 pre-k attendee scores in reading and 402 attendee scores in math. The output data also states there were 402 scores for the non-attendee in reading and 402 non-attendee scores in math. Thus, the pre-k attendance groups were determined based on the number of equal MAP scores provided to the researcher for each group. For example, if school A provided MAP score data in reading and math for a total of 20 attendees they also provided a total of 20 MAP assessment scores for the non-attendees in order to have equal sample sizes represented in the study. Therefore, participant scores were divided into groups based on pre-k attendee or non-attendee with attendance representing the independent variable. Assessment scores for MAP test data in reading and math representing the dependent variable where (N=804 scores) in both groups.

**Instruments and Protocol**

In order for the researcher to collect data associated with the study, one instrument for data collection and interpretation was used. The researcher used test score reports from state-wide assessments in order to look at two groups of students who have taken two state assessments. The state assessment selected for instrumentation was the MAP assessment, and student test scores in reading and math were utilized for data collection purposes. According to the Mississippi Department of Education (2016), MAP measures the achievement of students in third through eighth grades on college and career readiness skills. MAP covers each of the following areas: English Language Arts, Mathematics, Algebra I, and English II.

It is a requirement for school districts to take the state-wide assessments. Instruments utilized for data collection are made available to all school districts in the state of Mississippi currently testing third grade students. The state test results yielded data regarding the academic
performance of students in Mississippi, and these tests generate a wide array of data regarding the academic performance of students in the areas of reading, language arts, and math (Mississippi Department of Education, 2016.). All of the data is reported online in an aggregate form about the school districts and the schools.

**Research Procedures**

Prior to conducting research associated with this study, the researcher received approval to carry out this study from the dissertation committee and the University of Mississippi’s Institutional Review Board (IRB) (Appendix A). Following approval from the dissertation committee and the IRB, the researcher disseminated appropriate letters to participating school districts about the study (Appendix B). Proper and necessary consent was received from the participating school districts, and these districts will remain anonymous in this study.

Once proper consent was obtained from each school district by the researcher, each participant was provided with an informative overview of the study (Appendix C). The overview explained the overall purpose of this study, provided insight on the relevance of the study, gave details associated with the data collection process, and explained how this study will contribute to the field of education in Mississippi.

**Data Analysis**

The researcher conducted a causal comparative study in order to examine the impact pre-k education has on academic performance of students in the state of Mississippi. Because pre-k is currently not a state-wide initiative in Mississippi, there is a need to determine if the state of Mississippi should consider offering pre-k to all school districts throughout the state.
In order to determine if there is a significant difference between the MAP test scores of students who attended pre-k programs in selected Mississippi schools versus those who did not attend pre-k, the researcher performed an independent samples \( t \) test. According to Creswell (2012), a \( t \) test is one of many statistical tests used in educational research for hypothesis testing. The \( t \) test allows the researcher to determine if there is any statistical difference between the mean scores of two groups, by comparing the mean scores of students who attended pre-k verses those who did not from school districts in Mississippi. Results from the analysis allowed the researcher determine if the hypotheses were significant. Results obtained from this \( t \) test indicated if there was any significant difference among these groups of students who attended pre-k verses those who did not in the areas of reading and math (Creswell, 2012). All test score data collected by the researcher was entered into the Statistical Package for Social Sciences (SPSS). Data collected and analyzed from this study is presented in tables and figures.

**Summary of Methods**

The methods of this study served as a critical component which guided the researcher through the collection of quantitative data. The methods of this study provided insight into which participants needed to be targeted for this study, and details on how these participants needed to make the collection of data possible for the study. In addition to this, the researcher explained in the methods how the hypotheses were tested in order to determine the significance of each.
Chapter IV, Research Findings and Analyses, presents data examining the impact of pre-k programs on student achievement in Mississippi elementary schools. The chapter offers student test data from current fourth grade students who completed MAP assessments in Reading and Math in third grade during the 2015-2016 school terms. This cohort was chosen because they were the first group of students required to take MAP assessments in the state of Mississippi. MAP scores in reading and math are compared based upon those who attended and those who did not attend pre-k programs offered by Mississippi school districts during the 2011-2012 academic years. Chapter IV provides statistical measures and assumptions, hypotheses testing, data analysis and comparisons. Results of the emerging scores have been determined by inputting data into SPSS 21 and following the procedures for conducting a t test. All data presented in Chapter IV are presented and explained as it relates to the two hypotheses.

Statistical Measures and Research Hypotheses

Statistical Measures

The independent samples t test was used to analyze both hypotheses. Assumptions associated with performing an independent samples t test were studied prior to the analyzation and reporting of data for this study. According to Hinkle, Wiersma, and Jurs (2003), the independent samples t test is a testing procedure utilized to determine how two population means
differ while sharing one dependent variable. In this study, the independent variables being compared are pre-k attendees and non-attendees. The dependent variable for reading and math are the MAP assessment scores for the pre-k attendees and non-attendees.

In the current study, the independent samples t-test is used for the analysis of data from the causal-comparative study. According to Gall, Gall, and Borg (2007), the causal-comparative design is utilized in order for researchers to explore possible causal relationships. Creswell (2014) further indicates how the causal-comparative design is a type of non-experimental research, although quantitative in nature, allowing the researcher to test two or more independent variables which have already occurred. Because of the occurrence of independent variables and the researchers’ inability to manipulate variables after the fact, this design is also referred to as ex post facto research (Gall, Gall, & Borg, 2007).

In order to implement the t test in this causal comparative research design, there are three underlying assumptions which must be considered by the researcher to move forward with the collection and analysis of data. Gall, Gall, and Borg (2007) indicate these assumptions are as follows: 1) Data scores must be independent of each other; 2) There should be a normal distribution of the dependent variable among each of the populations defined by the grouping variable; and 3) Equal score variances for the populations, homogeneity of variance, is met. Although the t test has been determined to provide researchers with robust and accurate estimates of data, consideration of the assumptions is necessary.

Hypothesis One

Null hypothesis one states there is no significant difference between third grade students in Mississippi schools who attended pre-k and students who did on MAP reading test scores in
2015-2016. SPSS 21 is used to run an independent samples $t$ test in order to determine if there was a statistically significant mean (M) difference in reading MAP scores of pre-k attendees and non-attendees. Reading Map Score data was collected for pre-k attendees during the 2011-2012 academic school year. The same existing MAP data for reading is used from the second group of non-attendees of pre-k. MAP differentials were calculated to compare sample means of pre-k attendees ($N = 402$) and non-attendees ($N = 402$) with a total of 804 student scores being compared.

**Hypotheses Two**

Null hypothesis two states there is no significant difference between third grade students in Mississippi schools who attended pre-k and students who did not on MAP math test scores in 2015-2016. In order to test this hypothesis, the same procedures are followed as stated above in Hypothesis One. MAP math assessment scores are provided for the pre-k attendees and non-attendees. These scores are input into SPSS 21 and the sample size for this group is the same as indicated in hypothesis one above. A separate $t$ test, however, is run in order to test the data associated with hypothesis two using MAP math scores.

**Research Assumptions and Data Analysis**

**Assumption of Independence Testing**

As consistent with Gall, Gall, and Borg (2007), one of the first steps to conducting this study required the researcher to determine if the data sources were independent of each other. In this study, MAP assessment data for those who attended pre-k in Mississippi schools are provided and considered to be independent of the group which yielded MAP score data for the
non-attendees of pre-k in Mississippi. This assumption of independence testing is considered prior to collection and analyzation of data in order to deem the independent samples t test permissible for this study. Therefore, the assumption of independence is met as a result of participant data considered for collection and analyzation, not being systematically related.

**Assumption of Normality Testing**

As consistent with Gall, Gall, and Borg (2007), the next step of assumption testing in using the independent samples t test is to test for the assumption of normality. An analysis of the Shapio-Wilks test for reading and math MAP assessment scores are analyzed. This analysis is followed by visual representations of figures showing histograms, normal Q-Q plots, and box plots test for reading and math MAP assessment scores indicating the distribution of MAP scores among groups represented in this study.

The assumption of normality, the significant value is compared to the a priori alpha level (level of statistical significance), which was set at .05 for this study. According to the rules for normality testing, if the significant value measures to be less than the level of significance, there is a violation in the assumption of normality (Gall, Gall, & Borg, 2007). The Shapiro-Wilks normality results are found in Table 2 are as follows:
Table 2

Shapiro-Wilk's Test of Normality Results for Reading and Math Map Assessment Scores

<table>
<thead>
<tr>
<th></th>
<th>Pre-K Attendance</th>
<th>Shapiro-Wilks Test of Normality Results</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>df</td>
<td>Sig.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading MAP Assessment</td>
<td>Attendee</td>
<td>.994</td>
<td>402</td>
<td>.133</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-Attendee*</td>
<td>.996</td>
<td>402</td>
<td>.000*</td>
<td></td>
</tr>
<tr>
<td>Math Map Assessment</td>
<td>Attendee*</td>
<td>.991</td>
<td>402</td>
<td>.013*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-Attendee</td>
<td>.996</td>
<td>402</td>
<td>.328</td>
<td></td>
</tr>
</tbody>
</table>

Note: * indicates violations of normality where (p values < .05)

Table 2 shows the reading MAP assessment pre-k attendee group normality testing indicates (.133 > .05); therefore, normality is assumed. The reading MAP non-attendee group (.000< .05) indicates normality in not assumed in this group’s scores. Math normality results for the attendee group show (.013 < .05), and in this case, normality is also not assumed. The last group for Math non-attendees where the significant value is greater than the level of significance of .05 (.328), normality has been assumed for this group.

Although the Shapiro-Wilk’s test indicates a lack of assumed normality, the t test is one which is considered to be very robust and is able to provide accurate estimates of statistical significance (Gall, Gall, & Borg, 2007). Data from the Shapiro-Wilks test indicates significant values are both assumed in one group and not assumed in one group for reading and math. Because the group sizes are equal for samples in reading and math, normality violations are accounted for within this analysis. Each of the figures presented below follows the Shapiro-Wilk’s test showing visual representations of approximate distribution scores for MAP assessments for pre-k attendees and non-attendees. Figure 1 is as follows.
Figure 1 shows the mean distribution for reading assessment scores of 354.91 with a standard deviation of 15.96 among a sample of 804 assessment scores. The combined data appears to be normally distributed; however, reading MAP scores, for the non-attendees, from the Shapiro-Wilk’s test indicate a $p$ value < .05 (.000<.05). Figure 2 shows the distribution of math MAP scores.
Figure 2: Distribution curves for math assessment scores

Figure 2 shows the mean distribution for math MAP assessment scores of 355.27 with a standard deviation of 17.318 among a sample of 804 assessment scores. Combined data in this histogram visually appears to be normally distributed. However, math MAP scores, as reported from Shapiro Wilk’s test, indicate the pre-k attendee group has a p value less than .05 (.013).

In addition to this, when viewing the Quantile-Quantile plots (Q-Q plots), for reading and math MAP assessments, as shown in Figures three through six, some of the plots are normally distributed along the lines. However, there are some plots which fall above or below the lines indicating all scores are not normally distributed among each group of pre-k attendees and non-attendees. Figure 3 is as follows:
Figure 3:

Q-Q plots for pre-k attendee group reading

Figure 3 shows very few deviations from the line. Reading MAP scores for the pre-k attendee group indicates normal distribution as reported from data associated with the Shapiro Wilk’s test.

Figure 4 also indicates important findings:
Figure 4 shows the points are taking on another shape rather than a forming straight line. There are observed MAP scores which rise above and fall below the line. As indicated from the Shapiro-Wilk’s test, the reading assessment scores for the non-attendee group are not normally distributed. Figure 5 further indicates interesting findings:
Figure 5 shows points deviating from the line and forming a shape rather than a straight line.

Normality is not assumed in this group, and this visual representation reflects data reported from the Shapiro Wilks for the math MAP attendee group showing violations of normality. Figure 6, too, indicates interesting findings:
Figure 6:

Q-Q plots for non-attendee group math

Figure 6 shows there are minimal deviations of observed scores from the straight line. This figure illustrates, as reported by the Shapiro-Wilk’s test, a normal distribution of scores among the math MAP non-attendee group for pre-k.

Figure 7 shows representations of the box plots are nearly symmetrical and showed five outliers for the reading MAP assessment group. Figure 7 is as follows.
Figure 7:

Boxplots indicating outliers for reading attendance groups

There is one outlier in the scores of the pre-k attendee group and four for the pre-k non-attendee group. Figure 7 further provides information about the boxplots indicating outliers for reading attendance groups.

Figure 8 shows that in the math MAP assessment score group, there is a total of three outliers. One of the outliers is labeled in the pre-k attendee group and two in the non-attendee group. Figure 8 provides information about boxplots and math attendance groups. Figure 8 shows the following:
Figure 8:

Boxplots indicating outliers for math attendance groups

Figure 8 shows three outlier scores which are very different from scores obtained in the sample. Each of these scores is checked for error and show correct representations of math MAP scores representing pre-k attendance.

Each of the outliers, reveals in the normality of distribution assessments, is included in the statistical analysis of data because these scores are considered to be accurate representations of the MAP assessment scores in the area of reading and math. The outliers in these groups either have considerably higher or lower scorers on the MAP assessment in reading and math when compared among the sample.
Assumption of Homogeneity of Variance

As consistent with Gall, Gall, and Borg (2007), homogeneity of variance for each of the groups was tested using data from SPSS 21. The Levene’s test for the equality of variances uses the $F$ test for the equality of variances, and the level of significance has a set *a priori* for the analysis of the $t$ test which indicates the level of significance ($a=.05$) in order to test the assumption of variance. Table 3 states the following:

Table 3
Levene’s Test for Equality of Variances in Reading and Math MAP Assessment Scores

<table>
<thead>
<tr>
<th></th>
<th>Levene’s Test for Equality of Variances</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading MAP Scores</td>
<td>Equal variances not assumed</td>
<td>10.563</td>
<td>.001</td>
</tr>
<tr>
<td>Math MAP Scores</td>
<td>Equal variances not assumed</td>
<td>7.97</td>
<td>.005</td>
</tr>
</tbody>
</table>

Note: .05 Significance level

Table 3 shows the Levene’s test yielded results which indicate equal variances in this study were not assumed for reading assessment scores with ($p < .05$). Results showed the $F$ value to be 10.563 followed by (.001<.05). Therefore, the null hypothesis indicating no significant difference is rejected, and the assumption for homogeneity of variance, in this case, was not met. Henceforth, it is concluded from this testing procedure that there is a significant difference between the variances of the pre-k attendees and non-attendees.

The Levene’s test is also used to test for homogeneity of variances for the Math group. The null hypothesis for this group also assumes no difference between the variances of the two groups. In this analysis, the Levene’s test indicates that the $F$ value is 7.97 with a significant
value of .005. Because this significant value is (.005 < .05), the null hypothesis for the assumption of homogeneity of variance in math MAP assessment scores is also rejected.

Data from SPSS 21 contains two t-values. Since the assumption of variance was not assumed in either of the two groups tested, the assumption of variances was not met. Therefore, the t-value section which indicates “equal variances not assumed” from output charts must be used for both data sets. This is the bottom line of data in the section labeled t-test of equality means and the top line of data has to be ignored for further analysis of the study.

**Descriptive Statistics**

Table 4 provides an overview of data which includes the number of participants in each group, the group’s mean scores, standard deviations, and standard mean error scores for those who attended and those who did not attend pre-k. Table 4 is as follows:

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reading</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assessment Score</td>
<td>Attendee</td>
<td>402</td>
<td>357.50</td>
<td>16.90</td>
</tr>
<tr>
<td></td>
<td>Non-Attendee</td>
<td>402</td>
<td>352.31</td>
<td>14.53</td>
</tr>
<tr>
<td><strong>Math</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assessment Score</td>
<td>Attendee</td>
<td>402</td>
<td>358.61</td>
<td>18.09</td>
</tr>
<tr>
<td></td>
<td>Non-Attendee</td>
<td>402</td>
<td>351.93</td>
<td>15.84</td>
</tr>
</tbody>
</table>

As indicated in the group statistics report, the mean (M) for the reading groups’ pre-k attendee scores are 357.50 with a standard deviation (SD) of 16.90. For example, the statistical scores for the non-attendee pre-k reading groups are (M = 352.31; SD = 14.53). This data shows numbers
which are numerically higher for the attendee group than the non-attendee group in reading. Further testing indicates the significance of these scores.

Table 4, too, shows the attendee pre-k groups’ findings in math are (M = 358.61; SD = 18.09) while the non-attendee pre-k group findings in math are (M = 351.93; SD = 15.84). This testing procedure also shows numbers indicating higher numerical values for the pre-k attendees than the non-attendees group in math. Again further hypotheses testing also indicate the significance of these scores.

**Inferential Statistics**

The use of inferential statistics using independent samples $t$ test, for this study, is conducted to determine if a statistical significant difference exists among the 2015-2016 MAP reading and math test scores of third grade students in Mississippi who attended pre-k and the students who did not. For each participant group, MAP assessment scores in reading and math have been assessed and determined to be normally distributed. Figure 1 through Figure 8 provides a visual representation of histograms, Q-Q charts, and box charts. In addition to this, normality distributions were assessed using the Shapiro-Wilk normality testing and this test indicated normality is not to be assumed in each case. MAP assessment scores in reading and math for pre-k attendees and non-attendees have been determined to be normally distributed in some cases but not in all cases. Next, the criterion for rejecting the Null hypothesis has been set for each of the hypotheses. As indicated in Table 3, the Levene’s test for equality of variances shows the assumption for homogeneity of variance was rejected in both hypotheses tested.

The independent samples $t$-test indicates the need for further testing which requires the researcher to compute the test statistic for both hypotheses. Since the observed t value (4.67)
exceeds the critical t values of (-1.96; +1.96), this indicates the need to reject the null hypothesis. The “Sig. (2-tailed)” associates this value with the t value of .000. Because this value is less than the level of significance set a priori (.05), this also indicates the null hypothesis (no significant difference in MAP reading scores) is rejected.

Table 5 provides an overview of independent samples t test values for each of these values associated with the reading MAP assessment scores. Additional hypothesis testing requires the researcher to construct the confidence interval (CI) for the dependent variables of reading and math MAP assessment scores.

Table 5

<table>
<thead>
<tr>
<th>Reading Assessment Scores</th>
<th>t</th>
<th>df</th>
<th>Sig.</th>
<th>Mean Difference</th>
<th>Std. Error Difference</th>
<th>95%CI Lower</th>
<th>95%CI Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal Variance</td>
<td>4.67</td>
<td>784.37</td>
<td>.000</td>
<td>5.19</td>
<td>1.11</td>
<td>3.01</td>
<td>7.37</td>
</tr>
<tr>
<td>Not Assumed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Significance level of .05

In the reading group of attendees and non-attendees the confidence interval values were calculated in SPPS 21 and further calculated by hand. These values are compared and determined to exceed the t-value of (-1.96; + 1.96) at a 95% CI, in both the upper (7.37) and lower (3.01) extremes. Thus, the null hypothesis (no significant difference in reading MAP scores) is rejected.

Table 6 provides an overview of independent samples t test values for math groups for attendees and non-attendees.
Table 6

Independent Samples $T$ Test Values for Math MAP Assessment Scores

<table>
<thead>
<tr>
<th>Math Assessment Scores</th>
<th>$t$</th>
<th>df</th>
<th>Sig.</th>
<th>Mean Difference</th>
<th>Std. Error Difference</th>
<th>95% CI Lower</th>
<th>95% CI Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal Variance</td>
<td>5.57</td>
<td>788.18</td>
<td>.000</td>
<td>6.68</td>
<td>1.20</td>
<td>4.32</td>
<td>9.03</td>
</tr>
<tr>
<td>Not Assumed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Significance level of .05

For the math MAP assessment variable, in Table 6, the $t$-value is observed at (5.57) which exceed the critical $t$ values (-1.96; +1.96). Therefore, in this occurrence of testing hypothesis two, the null hypothesis (no significant difference in math MAP scores) is rejected. The “Sig. (2-tailed)” SPSS 21 output has associated this $t$ value with .000. Since this $t$ value is less than the level of significance set $a$ priori (.05), the null hypothesis of (no significant difference in math scores) is rejected.

For the variable math assessment scores, CI scores have also been calculated in SPSS 21. These scores have been calculated to determine if, in both instances, the CI upper and lower values exceed the $t$-values of (-1.96; +1.96). The CI upper value in math is (9.03), while the lower value for group attendees and non-attendees is calculated at (4.32). The null hypothesis (no significant difference in math MAP scores) is rejected.

**Concluding Perspectives on Chapter IV**

Interpretation of hypothesis testing for the dependent variable, reading MAP assessment scores, is rejected. It is concluded, based upon the results and analyzation of the data, the population mean scores of pre-k attendees and non-attendees significantly differ. Further analysis of hypothesis two, dependent variable math MAP assessment scores, the null hypothesis
is rejected. From this rejection of the hypothesis, no significant difference in math MAP scores, it is concluded the population means for pre-k attendees and non-attendees does significantly differ.

Results from this study’s hypothesis suggested the need to reject both null hypotheses associated with this study. Therefore, this indicates the acceptance of the alternative to these hypotheses which are as follows: 1) For Hypothesis one, there is a significant difference between third grade students in Mississippi schools who attended pre-k and the students who did not MAP reading test scores in 2015-2016. 2) For Hypothesis two, there is a significant difference between third grade students in Mississippi schools who attended pre-k and the students who did not MAP math test scores in 2016-2016.
CHAPTER V

SUMMARY, CONCLUSIONS, IMPLICATIONS FOR FURTHER RESEARCH AND RECOMMENDATIONS

Chapter V presents a summary of this study along with a detailed description of MAP assessment data used to compare group means associated with pre-k attendees and non-attendees. The conclusions in this study are based on information gathered from data which has been presented and analyzed in Chapter IV. Chapter V offers details on implications and further recommendations necessary to pursue future studies regarding pre-k education in the state of Mississippi. Furthermore, this chapter provides a discussion of the results and recommendations for further research on this topic.

Summary of the Research Study

According to Barnett (2013), pre-k programs are essential in providing children with skills which are vital in increasing their emotional, social, physical, and academic abilities prior to them entering kindergarten. Pre-k programs have been designed to have a positive impact on the academic performance of children while improving their academic skills in areas such as reading, language, and math (DeBruin-Parecki & Slutzky, 2016). Although pre-k programs are offered in several school districts in Mississippi, funding for pre-k is not afforded to all school districts throughout the state; therefore, many children are unable to attend pre-k programs.
offered in Mississippi school districts. Because Mississippi lags behind so many other states academically, there is a need to provide children with quality educational experiences as early as possible (Suits, 2010). In addition to this, if Mississippi is to fully invest in pre-k, poverty and crime rates could be reduced throughout the state as a result of providing adequate education to children prior to entering kindergarten (The Southern Education Foundation, 2010).

Thus, the purpose of this causal comparative quantitative study is to examine the impact of pre-k programs on student achievement in Mississippi elementary schools. Two major hypotheses have been tested on students from ten school districts representing the four congressional districts throughout the state. MAP assessment scores in reading and math of two groups are compared among students who attended pre-k offered by Mississippi school districts (N=804) and those who never attended pre-k in Mississippi schools (N=804). The two hypotheses have been tested to determine if a significant difference existed among the group’s MAP scores in reading and math. In both hypotheses, it has been determined that a significant difference exists between the MAP reading and math test scores of third grade student who attended pre-k and students who did not.

The t test is used to test hypotheses one and two. Hypothesis one examines if a significant difference existed between third grade students in Mississippi schools who attended pre-k and students who did not on MAP reading test scores in 2015-2016. After conducting the t test in SPSS, data are used to test this hypothesis and the results from this test showed the attendance differentials as follows: \( M = 5.19, SD = 1.11 \); therefore, the pre-k attendees scored 5.19 points higher on the MAP reading assessment than the non-attendees. Results indicate there is a significant difference in MAP reading scores among those who attended pre-k and those who
Attending pre-k in Mississippi public schools has a positive impact on the academic performance of students in reading. Because students have attended a pre-k program in MS schools, findings indicate students are being exposed to skills in reading prior to entering kindergarten which allow students to excel academically in comparison to their peers who have not attended a pre-k program offered by Mississippi school districts.

Hypothesis two states there is no significant difference between third grade students in Mississippi schools who attended pre-k and students who did not on MAP math test scores in 2015-2016. An independent samples t test is conducted to test this hypothesis. After utilizing the data reported from SPSS to perform hypothesis testing, it is determined that the null hypothesis is to be rejected. The alternative indicates there is a significant difference between the MAP math test scores of 2015-2016 third grade students in Mississippi schools who attended pre-k and the students who did not. Test differentials for attendance in math are ($M = 6.68, SD = 1.20$). The pre-k attendees in math scored 6.68 points higher on the MAP math assessment than the non-attendee group; therefore, those who attended pre-k demonstrate higher achievement than those who have not attended pre-k in Mississippi schools. Because students have attended a pre-k program offered in Mississippi school districts, they are gaining skills in math which exceed skills learned by those who have not attended a pre-k program in Mississippi school districts.

Findings from hypotheses testing in this study suggests students who have attended pre-k, offered in Mississippi school districts, excel academically when compared to those who have not on third grade MAP assessments. Therefore, pre-k attendance in Mississippi public schools is very beneficial for those in attendance. As indicated from findings in this study, attending pre-k in Mississippi schools could pose great benefits for those who do not attend. Hypotheses testing
for reading and math reveal the positive impact attending pre-k has on the overall academic achievement of students in Mississippi school districts.

**Conclusions in the Research Study**

According to the study conducted in the state of Tennessee, pre-k attendance was found to have significant and positive impact on the academic performance of students (Lipsey & Society for Research on Educational Effectiveness, 2014). Additionally, children who participated in pre-k programs in Pennsylvania show students have made great gains academically as a result of participating in the state-wide pre-k program (Pennsylvania Department of Education, 2010). Mean differentials and hypotheses test findings in this study are aligned with the findings associated with each of these aforementioned studies.

Findings from this study, for both hypotheses, suggest there is evidence of a statistically significant difference among the academic achievement of students attending pre-k and those who did not attend pre-k. It is important to recognize the existing difference in the mean scores for reading and math MAP achievement. Students who have attended a pre-k program, offered in Mississippi school districts, are shown to have overall higher achievement than those who did not attend a pre-k program offered in a Mississippi school district. Therefore, the findings suggesting a significant difference between pre-k attendees and non-attendees, based on MAP data, in this study indicates the importance in providing pre-k to all students in Mississippi.

MAP score differentials in both reading and math show numerical gains for those attending pre-k when looking at the mean scores. Attendees of pre-k, when tested in reading and math, have higher test scores than those who did not attend according to results from the existing MAP data.
Mean score differentials from this study are associated with findings from other studies which indicate students who attend pre-k programs offered by school districts show higher achievement scores than those who do not attend pre-k programs. For example, findings in a study conducted by Stinson (2011), in schools located in rural Mississippi, indicate students attending public school pre-k programs perform above grade level when STAR tested in comparison to those students who never attended public pre-k programs. Likewise, findings from a study conducted by Sanborn, McConnell, Kimball, Canales, Davila, Everitt, & Villegas (2017), suggest children who attended high quality pre-k programs in 2010 in Texas and are STAAR tested in third grade score higher than their economically disadvantaged peers who did not attend a public pre-k program. Additional findings from a universal pre-k program offered in Tulsa public schools show how offering pre-k to all is beneficial. Data gathered in this study indicate how the benefits of offering universal pre-k programs exceed the cost in a 2 to 1 ratio (Bartik, Belford, Gormley, & Anderson, 2016). Therefore, mean score differentials from the current study can also be used to show how all children in Mississippi could benefit from the possibility of attending public pre-k programs if they are afforded to all children throughout the state.

**Implications of the Research Study**

Each of the school districts providing data for this study agreed to participate with a clear understanding of the importance offering pre-k to students in Mississippi achievement. School administrators along with the pre-k teachers are very aware of how critical it is for students to enter school as kindergarten ready. This can be assisted by students having exposure to skills
addressed in public pre-k programs. Additionally, school administrators along with the teachers in Mississippi are responsible for ensuring students are prepared to take state assessments starting in third grade, and in order for schools to excel academically, school readiness and preparedness for assessments is a must. According to Bierman, Nix, Domitrovich, Welsh, and Gest (2015), many children enter school unprepared and lack skills necessary to perform and achieve academically. If all children have equal opportunities to attend state-wide pre-k programs in Mississippi, existing achievement gaps could be narrowed and students will have greater opportunities to excel in all academic areas. Therefore, school administrators need to continue to advocate for initiatives and funding in order to offer state-wide pre-k for all children. These efforts could increase the likelihood of providing students better chances to meet all growth obligations associated with state-wide testing.

Findings from this study reveal there is a significant difference among third grade students in Mississippi schools who have attended pre-k and students who did not on MAP test scores in reading and math in 2015-2016. These findings are aligned to current studies which indicate the achievement gains of those presented in other studies. A recent study tracks every student across the state who attended a pre-k program in North Carolina for a period of 13 years in one hundred counties. Findings from this study suggest investments made by the state to provide high quality pre-k programs, without limiting resources, is associated with students having higher standardized reading and math test scores in third through fifth grade (Dodge, Bai, Ladd, & Muschkin, 2016). According to Andrew, Jargowsky, and Kuhne (2012), those students who have participated in Texas’s targeted pre-k program are associated with having increased scores on the Texas Assessment of Academic Skills (TASS), and findings in this study also
suggest these students are less likely to have been retained along with having a lower probability of receiving special education services. Additionally, Gormley and Gayer (2005) suggest attendance in Tulsa’s Universal pre-k program increased the cognitive knowledge, motor skills, and language scores of participating students especially those coming from families with low-incomes.

Because there is a significant difference among the groups tested in the current study, literature findings associated with this study conclude pre-k programs are beneficial to those who attend based on them having higher mean score averages when compared to those who did not attend. In accordance with limitations to this study, the researcher has no control over MAP data received for the attendee and non-attendee group and the study does not consider other variables which have impacted the scores of the participating groups. For example, although these students in the non-attendee group did not attend a public pre-k program, there is a possibility that many of them could have attended private pre-school settings offering pre-k. In addition to this, some of the non-attendees may have attended their local Head Start centers. Hence, if the non-attendee groups of students have not experienced some degree of early childhood education, this could be a contributing factor in why there is a significant difference in how these students perform academically according to the results from the reading and math MAP assessments.

**Recommendations for Future Practice and Research**

This causal comparative research study indicates there is a significant difference existing among groups of students who have attended pre-k in Mississippi schools and those who have not attended public schools in Mississippi for pre-k. However, there is a difference in the mean
score averages of those who have attended pre-k when compared to those who have not according to data analyzed from reading and math MAP assessments. According to Blase and Blase (2004), principals are responsible for implementing practices which encourage effective collaboration in schools among their teachers in order to promote learning for all. Therefore, data from this study can be utilized to bring about collaboration among school administrators and teachers in order to develop bases to show the need for more pre-k classes in their schools.

According to Stinson (2011), administrators and teachers must be willing to work together in order to provide better educational outcomes for all students. Hence, school districts can follow similar methods presented in this study to determine how their pre-k attendees perform within their schools districts in comparison to the non-attendees. Following this approach will allow district administrators and teachers to determine how these groups compare. Additionally, tracking the progress of students who have attended a public school pre-k programs and those who have not, will allow educators the opportunity to consider ways to implement best practices to ensure school readiness for all learners including those who have never attended public or private pre-k programs.

School leaders can also implement means for gathering data from parents upon school entry to determine if their students have or have not attended pre-school, along with obtaining identifying information which will verify where these children attended pre-school. Gathering this information from parents would allow schools to receive background information regarding students which will provide school districts with relevant data about students and school readiness. Due to school readiness being such a critical issue concerning entry into kindergarten, if teachers have an idea of a child’s early childhood educational experience, they will be able to
better address the social, academic, cognitive, developmental, and educational needs of the early learner. Addressing these needs will possibly lead to students having ongoing success in school, while also preparing them to exceed all growth expectations for learning.

According to Hoy and Miskel (2013), external environments and influences come from various levels of society and have an impact on what happens in schools. As a result of schools not having any control over how children are educated prior to entering school, another causal comparative study should be conducted on how pre-k attendees in Mississippi schools academically perform according to the socio-economic status of the school district. For example, school districts offering pre-k programs to those who have over 90 percent of their students receiving free and reduced priced lunches should be conducted and compared to school districts with only 50 percent of the students receiving free and reduced lunches. Data from this type of study could possibly indicate why funding for pre-k programs is more demanding in certain areas.

An extension to the current study could be conducted in order to receive the perspectives of school administrators regarding data revealed from this study. School administrators could provide further insight on why the study suggests there is a significant difference among the groups tested in this study according to findings from MAP assessment data in reading and math. They could also share ideas on strategies which may be utilized in their schools to ensure both groups have similar levels of achievement. A qualitative perspective, added to a study aligned to the current study, could also explore the depth and breadth of disparities existing among the pre-k attendees and non-attendees.

Lastly, the Mississippi State Department of Education could benefit from the possibility
of replicating this study. Replication of this study on the state level would provide more widespread findings due to having the ability to acquire all data needed to conduct this type of study. The state department has more effective and more efficient means of obtaining data from school districts which is needed in order to make legislative and educational decisions. It would be ideal for the state department to invest in finding out more-specifically how well pre-k attendees are performing throughout the state. This should be done in order to have adequate means for suggesting ways in which pre-k programs should be funded with sound data-driven evidence from all districts in support of rationales for distributing funds for pre-k education. Conceivably, this type of study and others will shed light on the need for Mississippi policy makers and stakeholders to consider opening the doors for all four year old children in Mississippi to have the opportunity to have access to a public school pre-k program.


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LIST OF APPENDICES
APPENDIX A: IRB APPROVAL LETTER
Mr. Harges:

This is to inform you that your application to conduct research with human participants, “The Impact of Pre-Kindergarten Programs on Student Achievement In Mississippi Elementary Schools” (Protocol #17x-139), has been approved as Exempt under 45 CFR 46.101(b)(#4).

Please remember that all of The University of Mississippi’s human participant research activities, regardless of whether the research is subject to federal regulations, must be guided by the ethical principles in The Belmont Report: Ethical Principles and Guidelines for the Protection of Human Subjects of Research.

It is especially important for you to keep these points in mind:

• You must protect the rights and welfare of human research participants.

• Any changes to your approved protocol must be reviewed and approved before initiating those changes.

• You must report promptly to the IRB any injuries or other unanticipated problems involving risks to participants or others.

If you have any questions, please feel free to contact the IRB at irb@olemiss.edu.

Jennifer Caldwell, PhD, CPIA, CIP
Senior Research Compliance Specialist, Research Integrity and Compliance
The University of Mississippi
212 Barr
P.O. Box 1848
University, MS 38677-1848
U.S.A.
APPENDIX B: RECRITMENT LETTER
Dear Superintendent or Administrative Leader:

My name is Fletcher B. Harges, and I am currently a doctoral candidate at The University of Mississippi. I am working toward completing my dissertation at the University of Mississippi in the department of Leadership and Counselor Education. My dissertation, The Impact of Pre-kindergarten Programs, examines the impact of pre-k programs on student achievement. Studies on pre-k education indicate when students participate in early childhood education programs these can have a very positive influence on a child’s academic performance in school (DeBruin-Parecki, & Slutzky, 2016). I am asking your permission to conduct my study in your school. The study is titled The Impact of Pre-Kindergarten Programs on Student Achievement in Mississippi Elementary Schools, and I would like to collect your student data during the spring of 2017. Because of the demand for students to achieve, state-wide pre-k education and funding for children in the state of Mississippi needs to be considered. You are asked to identify students who have completed pre-k programs and those who have not and to provide their test scores in math and reading MAP. You are asked to compile this data in a spread sheet with a minimal of thirty students who attended pre-k and thirty students who did not. All identifying information (i.e. student names, gender, teacher names) are asked to be removed.

Your willingness to participate in this study will greatly further the research to determine the impact of pre-k programs in elementary schools in the state of Mississippi. I will use my findings to further my research on how children who qualify for pre-k enrollment will benefit from attending pre-k prior to entering kindergarten. Participation in this study is strictly voluntary and presents no risk to students or teachers.

Thank you for considering my study. If you have any questions and/or concerns, please feel free to contact me or the chair of my dissertation committee.

**Investigator**
Fletcher B. Harges, Ed.S
Department of Leadership & Counselor Education
117 Guyton Hall
The University of Mississippi
(662) 809-8985

**Advisor**
RoSusan D. Bartee, Ph.D.
Department of Leadership and Counselor Education
133 Guyton Hall
The University of Mississippi
(662) 915-7636

I look forward to hearing from you.

Sincerely,

Fletcher B. Harges Ed.S
Principal, Carroll County School District
Doctoral Candidate, University of Mississippi
INFORMATION SHEET

Title: ***The Impact of Pre-Kindergarten Programs on Student Achievement in Mississippi Elementary Schools***

Investigator
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INCLUDE THE FOLLOWING ONLY IF YOU ARE COLLECTING DATA EXCLUSIVELY FROM ADULTS

☐ By checking this box I certify that I am 18 years of age or older.

Description
Data from research suggest almost 20% of children who enter school are not prepared for entry as a result of them lacking cognitive, social, and emotional skills required for students to be successful (Bierman, Nix, Domitrovich, Welsh, & Gest, 2015). Because of the demand for students to achieve, universal pre-kindergarten (pre-k) education and funding in the state of Mississippi is necessary. Studies on pre-k education indicate when students participate in early childhood education programs, these programs can have a very positive influence on a child’s academic performance in school (DeBruin-Parecki, & Slutzky, 2016). Therefore, the overarching question of this study is as follows: Is there a significant difference in the reading and math achievement of students who attended pre-k and those who did not in Mississippi elementary schools? The purpose of this quantitative study is to examine the impact of pre-k programs on student achievement in Mississippi elementary schools. Elementary school principals will be contacted randomly throughout the state of Mississippi. The purpose of the study will be explained to the principals. Based on their convenience to participate in the study, they will be asked to identify students who have completed pre-k programs and those who have not and to provide their test scores in Math and Reading MAP. It will take approximately 90 minutes to gather test data for third grade students who took the Mississippi Assessment Program (MAP) during the 2015-2016 academic school year. The data will include two groups of students assessed: 1) the student test scores compiled, currently in fourth grade, who attended pre-k; and 2) the student test scores compiled, currently in fourth grade, who did not attend pre-k. The students’ names and gender, and teacher names will be removed from the test data in order to maintain the anonymity of these individuals. Principals will be asked to compile this data in a spread sheet with a minimal of thirty students who attended pre-k and thirty students who did not. All identifying information (i.e. student names, gender, teacher names) are asked to be removed.

Cost and Payments
There are no financial costs and payments associated with this study. The principals are only
asked to render time to compile the requested data on fourth grade students who attended and did not attend pre-k programs and their reading and math MAP scores.

**Risks and Benefits**
There will are no risk associated with this study. All identifying information on test score data will be removed to insure the anonymity of the students. School districts will not be identified by name in this study. Pseudonyms will be assigned to the school district to protect their identity. The study will provide beneficial information for education policy makers to consider state-wide funding for pre-k education throughout Mississippi, making pre-k available to all four years olds in the state.

**Confidentiality**
No identifying information on student data test scores will be received by the researcher. Therefore, the researcher will not have access to any revealing data identifiers (i.e., names, gender, socioeconomic status) to share. Pseudonyms will also be assigned to school districts to maintain he confidentiality of the district.

**Right to Withdraw**
You do not have to take part in this study and you may stop participation at any time. If you start the study and decide that you do not want to finish, all you have to do is to inform Mr. Fletcher B. Harges or Dr. RoSusan D. Bartee in person, by letter, or by telephone (contact information listed above).

**IRB Approval**
This study has been reviewed by The University of Mississippi’s Institutional Review Board (IRB). If you have any questions, concerns, or reports regarding your rights as a participant of research, please contact the IRB at (662) 915-7482 or irb@olemiss.edu.

**Statement of Consent**
I have read and understand the above information. By forwarding this information on to elementary principals, I am granting consent to participate in this research.
VITA

Fletcher B. Harges is a native of Grenada, Mississippi, and was born on February 20, 1973. He completed elementary and his secondary education in Grenada School District. Upon completion of high school Fletcher enrolled in Mississippi Valley State University in Itta Bena, Mississippi. He completed his Bachelor of Arts earning a degree in History from Valley State in May of 2000. Mr. Harges went on to start his career teaching in August of 2002 and his first teaching experience was in Water Valley school district. While working in Water Valley, Mr. Harges decided to enroll in graduate school. He was accepted to the University of Mississippi and completed his Master of Education and Specialist degrees with an emphasis Special Education from the University of Mississippi as well.

After five years of teaching secondary Special Education at Water Valley High School, Mr. Harges moved on to become an assistant principal. A year after being an assistant principal at North Panola High School, he became a first year middle school principal. Mr. Harges served as principal of Bay Springs Middle School, in the West Jasper School District for two years. He later moved on to become the middle school principal of Hawkins Middle School in Forest, MS. A year after being the principal of the Hawkins Middle School, he was appointed to the position of Superintendent of Forest Municipal School District serving a two year term.

Mr. Harges decided that he needed to pursue his dream of earning a doctorate degree, and enrolled in the doctoral program at the University of Mississippi. He moved back to his hometown of Grenada, Mississippi, in order to be closer to the University of Mississippi and his
family, and became the high school principal of Coffeeville High School. While principal of
Coffeeville high school, Mr. Harges transferred to the Educational Leadership program, which
he feels has been the best decision he could have ever made regarding his educational endeavors.
He moved on to become an administrator in Leflore County School District serving as the
Assistant Superintendent for one school term. Harges currently serves as Principal of Marshall
Elementary School in Carroll County School District. He has served as principal of Marshall
Elementary for the past three years and is presently entering his fourth year term.