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An Examination of the Long-Term Academic Impacts of Students Who Participated in the Missouri Preschool Program in Rural Southwest Missouri

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A Dissertation submitted to the Education Faculty of Lindenwood University in partial fulfillment of the requirements for the degree of

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This Dissertation has been approved as partial fulfillment

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Dr. Sherry DeVore, Dissertation Chair — Date: 10-18-16

Dr. Nancy Lawler, Committee Member — Date: 10-18-16

Dr. Brian Wilson, Committee Member — Date: 10-18-16

Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work at Lindenwood University and that I have not submitted it for any other college or university course or degree.

Full Legal Name: Clinton Ryan Hall

Signature:  Date: 10/18/16

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Abstract

The focus of this mixed methods study was to examine the possible differences between students who participated in the Missouri Preschool Program (MPP) and peers who did not attend the program. Areas examined through quantitative data in the study included academic achievement in communication arts in kindergarten, first grade, and second grade. The qualitative piece of the study included examination of areas such as social development, emotional development, and school readiness. Quantitative data were collected from one school district in rural southwest Missouri. These data came from Aimsweb assessments conducted at the district for the kindergarten, first-grade, and second-grade levels from 2009-2010 to 2015-2016. Students were grouped into cohorts (by school year), which were divided into two groups, students who participated in the MPP and students who did not participate in the MPP. An independent samples *t*-test was applied to examine the difference in the means of the scores between the two groups of students. There was not a statistical difference between the Aimsweb communication arts scores of students who participated in the MPP and scores of peers who did not participate in the MPP. This statement was true at all three grade levels examined. Kindergarten, first-grade, and second-grade teachers from the district were interviewed as part of the study. The educators who participated perceived benefits of attending a preschool program to include the following: readiness to enter school, advanced social development compared to peers who remained at home prior to school entry, fine motor development, and increased parental involvement.

Table of Contents

List of Tables

Chapter One: Introduction

Early childhood education has gained attention in recent years as a possible avenue for closing the academic achievement gap among students in public schools (Ackerman & Cooley, 2012). Ackerman and Cooley (2012) found, "54 different preschool initiatives in 40 states, including Missouri, serve over one million children, almost double the number served eight years earlier" (p. 2). During the spring of 2014, the Missouri legislature voted to increase state funding for early childhood education (Young, 2014).

Early childhood education is a term used to refer to the time a student attends a learning facility prior to enrolling in a formal K-12 school district (Sutton, 2015). According to the Missouri Department of Elementary and Secondary Education (MODESE) (2014c), "The Missouri Preschool Program (MPP) is a competitive bid or grant opportunity through state funds to create or expand high quality early care and education programs for children who are one or two years from kindergarten eligibility" (Missouri Preschool Program section, para. 1). Individual school districts may apply for the grant to service prekindergarten students who reside within the boundaries of their district (MODESE, 2014c).

This case study focused on standardized assessment data from kindergarten, first-grade, and second-grade students enrolled in a rural school district in southwest Missouri who completed the MPP. The academic performance of the students was collected through Aimsweb assessment scores in the area of communication arts. Aimsweb is a progress monitoring data collection system from the Pearson company (Pearson, 2015).

Examination of the resulting data showed to what extent, if any, a student who participates in the MPP can expect long-term academic benefits. Students who completed the MPP were compared against similar peers who did not participate in the MPP. The peer group who did not participate in the MPP included students who attended another early childhood education program such as Head Start or a Title I preschool, as well as those who may not have had any formal pre-kindergarten education.

The goal of this research was to examine the ability of the MPP to provide long-term academic gains; therefore, there was not a control for this variable. In addition, this research included a qualitative component to elicit the perceptions of kindergarten, first-grade, and second-grade teachers regarding the academic performance of MPP students versus those who did not attend the MPP. Including this component allowed for the examination of other possible benefits of the MPP in addition to academics, such as improved social skills.

The MPP provides an opportunity for students who are three to four years of age to receive early childhood education services prior to kindergarten (MODESE, 2014c). McCarthy, Whitebook, Ritchie, and Frede (2010) suggested the importance of early childhood education extends beyond improving language, vocabulary, and numeracy skills. McCarthy et al. (2010) argued social and emotional skills are also developed in a preschool setting.

Background of the Study

Early childhood education has entered the national political conversation in America. According to the United States Department of Education (2015), research has

shown a return of $7 or more on each dollar invested in pre-kindergarten education. According to the Obama Administration, these savings come from the reduced need for future educational services including remediation, grade repetition, and special education (The White House, 2014). The White House (2014) also pointed to research that suggests former preschool students generally earn more income and thus contribute more in taxes relative to their peers who did not attend preschool.

Investment in pre-K is being pursued on the federal level (The White House, 2014) and the state level (Young, 2014). Hatcher, Nuner, and Paulsel (2012) suggested the establishment of public pre-kindergarten programs throughout the nation would seem to indicate kindergarten readiness as a goal of national, state, and local educational policies. According to Hatcher et al. (2012), parents expect their children to be prepared socially and emotionally as well as academically for kindergarten after the children have participated in preschool.

The MPP began in 1999 by providing funding to 54 school districts (National Institute for Early Education Research [NIEER], 2012). Originally, the MPP grants were written to provide funding for three years; however, by the year 2012, the MPP had expanded to include 165 preschools statewide receiving $11 million ("Analysis: Mo. Preschool," 2012). According to "Analysis: Mo. Preschool" (2012), "For some lawmakers, MPP is an illustration of how government programs tend to gradually become permanent, conditioning the beneficiaries of the ongoing cash to become dependent upon it" (p. 1).

In 2012, Missouri lawmakers cut the MPP funding and transferred the funds to Parents as Teachers (NIEER, 2012). However, these funding cuts were reversed during the 2014-2015 school year when Missouri Governor Jay Nixon sought to almost triple funding to the MPP from $11.7 million to just over $30 million (Samuels, 2014). Nixon proved himself an advocate for early childhood education (Holste & Channing, 2015).

Despite the perceived benefits of early childhood education, federal and state governments have been slow to expand pre-kindergarten implementation relative to other industrialized nations (Schaub, 2009). Schaub (2009) wrote American ambivalence toward early childhood education has been unparalleled compared to the worldview of early childhood education. Schaub (2009) illustrated this point noting that kindergarten, exported from Europe in the 1850s, continues to remain optional in some states. Barnett, Carolan, Squires, and Brown (2014) stated Missouri was one of 11 states serving less than 10% of their eligible four-year-olds with a state preschool program.

According to the White House website (2014), President Obama placed focus on early childhood education and increased federal funding for early childhood programs. During the 2014 White House Summit on Early Education, it was announced that between private and federal institutions, over $1 billion would be invested in educating and developing America's youngest learners (The White House, 2014). Barnett et al. (2014) wrote Missouri was one of nine states where per pupil state funding in preschool was less than $2,500.

Theoretical Framework

Project Construct is an early childhood education curriculum model founded, developed, and promoted within Missouri (Project Construct National Center, 2015). According to the Project Construct National Center (2015):

> Project Construct is derived from constructivism—the theoretical view that learners construct knowledge through interactions with the physical and social environments. Constructivist theory assumes that learning is due more to the reorganization of ways of thinking, of building upon the "known," than to development alone or the accumulation of facts alone. (What is Project Construct section, para. 2)

The theory of constructivism serves as an appropriate lens to view this study. This theory was selected because constructivism is heavily embedded in the MPP curriculum, Project Construct (Project Construct National Center, 2015).

Currently, Project Construct has been approved by Missouri to be used at any MPP site, including within the school district researched for this study (MODESE, 2014b). There are three other curriculums which have been approved for use in state-funded early childhood education programs: Creative Curriculum, Emerging Language and Literacy Curriculum, and High/Scope (MODESE, 2014b). Project Construct is based on the learning theory of constructivism pioneered by Vygotsky and Piaget (Project Construct National Center, 2015). According to Learning-Theories.com (2014), "Constructivism is a paradigm or worldview that learning is an active, constructive

process" (para. 1). People design their own representations of reality which tend to be subjective in nature (Learning-Theories.com, 2014).

Piaget was a cognitive theorist who was interested more in how children thought than what they actually knew (Berger, 2006). According to Berger (2006), Piaget studied hundreds of school children and derived his central thesis from these studies. Berger (2006) stated, "Piaget's central theory was that how children think changes with time and experience and these thought processes always affect behavior" (p. 46). Piaget pioneered systematic research of cognitive growth in children (McLeod, 2015).

Piaget believed in four stages of development: sensorimotor, preoperational, concrete operational, and formal operational (Berger, 2006). According to Piaget (1931), teaching must occur during the proper developmental stage for true education to take place. Piaget (1931) stated, "A lesson has no value unless it answers to a need, and it cannot answer to a need unless the knowledge it imparts connects with facts that have been actually experienced by the child" (p. 74). The belief children learn through experience is a core tenet of Project Construct (Project Construct National Center, 2015).

Sociocultural theory is the theory that the skills and intellect of people grow from interacting with others in society (Berger, 2006). According to McLeod (2014), Vygotsky's research and theory in cognitive development has become known as sociocultural theory. Vygotsky was the pioneer of sociocultural theory, per Berger (2006). According to Vygotsky (2012), "Historians will have no trouble seeing that psychological ideas depend on the overall dynamic of social life, a dependence that can

be easily discerned based on countless and perfectly obvious clues" (p. 91). Sociocultural practices have an impact on learning in areas such as literacy (Perry, 2012).

Vygotsky viewed children as apprentices (Berger, 2006). According to Berger (2006), "A child is what Vygotsky called an apprentice in thinking, someone whose intellectual growth is stimulated and directed by older and more skilled members of society" (p. 258). Vygotsky was an advocate of the zone of proximal development as well as scaffolding (Berger, 2006). According to Vygotsky (2004), "One of the most important areas of child and educational psychology is the issue of creativity in children, the development of this creativity and its significance to the child's general development and maturation" (p. 11). Constructivism has major education theorists attached to it (Learning-Theories.com, 2014).

Statement of the Problem

Early childhood education has been identified as an area of importance nationally by the Obama Administration (The White House, 2014). The U.S. Department of Education (2015) estimated fewer than three out of 10 four-year-olds attends a high-quality preschool. This is an alarming statistic when one considers the U.S. Department of Education (2015) has asserted the foundation of a strong middle class is based on access to early childhood education. As of 2013, 27 states had implemented a Quality Rating and Improvement System (QRIS) including a set of quality indicators that define increasingly higher levels of program quality (U.S. Department of Education, 2015). A QRIS is not currently used in Missouri and is actually prohibited by the Missouri legislature (U.S. Department of Education, 2015). This prohibition of implementing a

rating system used by other states makes comparison of the MPP to other preschool programs across the nation difficult, if not impossible.

In Missouri, high-quality early childhood education is currently a top priority (MODESE, 2014b). The MPP is growing within the state as evidenced by the 20 new districts that received grant funding for the fiscal year 2015 (MODESE, 2014c). Missouri taxpayers are providing funds for a practice (MPP) that may or may not result in any long-term academic gains for the students who are enrolled in the program. The MPP could offer additional benefits such as social or emotional advantages that may or may not be uncovered through the qualitative component of the research. Teachers may observe student gains that cannot be measured by standardized tests.

Early childhood education has gained more attention from the government as a result of current research in the field (Young, 2014). Research has validated the assertion of a connection between early childhood education and economic benefits to society (U.S. Department of Education, 2015). According to the U.S. Department of Education (2014), "Every public dollar spent on high-quality preschool returns $7 through a reduced need for spending on other services—such as remedial education, grade repetition, and special education—as well as increased productivity and earnings for these children as adults" (para. 4). DellaMattera (2010) wrote that in order for America to remain competitive, future generations must be assured a strong, early foundation for learning. DellaMattera (2010) added this is crucial not only to children's success later in school, but also to society's success.

Previous researchers' attempts to measure the long-term academic impact of preschool have generally not looked beyond preschool's ability to prepare students for kindergarten (Hatcher et al., 2012). According to Hatcher et al. (2012), educators differ in their views regarding the types of preschool activities that most prepare students for kindergarten. Hatcher et al. (2012) went on to state all agree preschool goals should align with kindergarten expectations to produce children who are ready for school entry.

Preschool's link to school readiness is not the only academic research that has been conducted on four-year-olds. McElroy (2007) examined the academic achievement of students through grade three who had completed one year of preschool. McElroy's (2007) research was conducted in New York and was focused on third-grade standardized test scores in both math and English for a three-year period from 2003-2005. McElroy (2007) found no statistical difference between year-end test scores among first-, second-, and third-grade students who completed one year of preschool and those who did not.

This case study will fill in the gaps of the limited research on the later academic effects of preschool participation. Longitudinal analysis of the ability of the MPP to provide long-term academic benefits to students in the area of communication arts was possible by examining the data resulting from the case study. Examination of Aimsweb data provided a longer period of time during which to collect information.

Purpose of the Study

The purpose of this study was to examine the potential long-term academic benefits for students who participated in the MPP in kindergarten, first grade, and second grade versus their peers who have not participated in the MPP. Analysis took place using

data collected from the case study. The non-MPP peer group included students who have attended another early childhood education program as well as students who have no prior early childhood education.

Research questions. The following research questions guided this study:

1. What difference exists, if any, between the kindergarten communication arts assessment scores of students who participated in the Missouri Preschool Program and the assessment scores of similar peers who did not participate in the Missouri Preschool Program?

2. What difference exists, if any, between the first-grade communication arts assessment scores of students who participated in the Missouri Preschool Program and the assessment scores of similar peers who did not participate in the Missouri Preschool Program?

3. What difference exists, if any, between the second-grade communication arts assessment scores of students who participated in the Missouri Preschool Program and the assessment scores of similar peers who did not participate in the Missouri Preschool Program?

4. What are the perceptions of kindergarten, first-grade, and second-grade teachers regarding student participation in the Missouri Preschool Program as it pertains to school readiness, academic performance, and social and behavioral awareness?

Null hypotheses. The following hypotheses were posed:

$H1_0$: There is no difference in kindergarten communication arts assessment scores between students who participated in the Missouri Preschool Program and those students who did not participate in the Missouri Preschool Program.

$H2_0$: There is no difference in first-grade communication arts assessment scores between students who participated in the Missouri Preschool Program and those students who did not participate in the Missouri Preschool Program.

$H3_0$: There is no difference in second-grade assessment scores between students who participated in the Missouri Preschool Program and those students who did not participate in the Missouri Preschool Program.

Alternate hypotheses. The following alternate hypotheses were posed:

$H1_a$: There is a difference in kindergarten assessment scores between students who participated in the Missouri Preschool Program and those students who did not participate in the Missouri Preschool Program.

$H2_a$: There is a difference in first-grade communication arts assessment scores between students who participated in the Missouri Preschool Program and those students who did not participate in the Missouri Preschool Program.

$H3_a$: There is a difference in second-grade communication arts scores between students who participated in the Missouri Preschool Program and those students who did not participate in the Missouri Preschool Program.

Definition of Key Terms

Aimsweb. Aimsweb is an assessment tool employed by school districts for universal screening, progress monitoring, and data management (Pearson, 2015).

Aimsweb data provide guidance to administrators and teachers based on accurate, continuous, and direct student assessment (Pearson, 2015). Aimsweb helps school administrators demonstrate tangible improvements (Pearson, 2015).

Missouri preschool program (MPP). The Missouri Preschool Program is a grant-funded early childhood education program in Missouri for three- and four-year-olds that started in 1999 (MODESE, 2014c). The MPP currently funds 165 preschools statewide (MODESE, 2014c).

Zone of proximal development. The zone of proximal development is Vygotsky's term for a metaphorical area or zone that includes all the skills, knowledge, and concepts a learner is close to acquiring but cannot yet master without help (Berger, 2006).

Limitations and Assumptions

The MPP has been in existence since 1999, but not all districts in Missouri have participated for the entirety of the program's existence (MODESE, 2014c). Districts that have received an MPP grant typically have only one MPP classroom (MODESE, 2014c). The MPP classrooms have size restrictions relating to the number of students who can be on the roster (MODESE, 2014c). Classrooms with one teacher may have a maximum of 10 students, while classrooms with one teacher and a full-time aide may have a maximum of 16 students (MODESE, 2014c). Combining the short existence time of the MPP with the limitations on the number of students who can participate at one time, there is a limited amount of longitudinal data available in Missouri.

Another limitation is background knowledge regarding the students in the similar peer group. Record keeping regarding students' education prior to kindergarten entry is virtually non-existent. Therefore, unless a child attended a district preschool program, it is difficult to ascertain if he or she attended a private preschool, Head Start, or remained at home prior to kindergarten entry.

Students in a specific rural school district in southwest Missouri were part of the case study. The results of this case study, therefore, may not necessarily apply to the entire state. Urban areas, suburban areas, and areas with students receiving different levels of free and reduced price meals may experience varying results.

Sample demographics. The sample included a range of 75 students who participated in the MPP at a rural school district in southwest Missouri as preschoolers and remained with the district through the completion of second grade. This sample group of students provided Aimsweb scores during kindergarten, first grade, and second grade for five cohorts. Seventy-five like peers were chosen at random from the same school district in rural southwest Missouri who completed kindergarten, first-grade, and second-grade Aimsweb assessments during their time with the district, but did not participate in the district's MPP. This is a limitation, as the sample size is small relative to the student population of Missouri.

The district has five kindergarten teachers who were interviewed for the qualitative component of this study. The interviews of kindergarten teachers allowed the researcher to examine possible additional benefits of the MPP in addition to academics,

such as school readiness. School entry age in the state of Missouri is five years old; therefore, kindergarten teachers were selected to be interviewed.

Summary

Nationally, states are looking to preschool programs to close the achievement gap among students (Young, 2014). This study involved examination of the Missouri Preschool Program's ability to result in long-term academic effects for students. This comparison was made using assessment scores in kindergarten, first, and second grades for both students who completed the MPP and like peers who did not participate in the MPP.

The kindergarten teacher interviews provided insight into any initial gains experienced by the MPP students that might possibly be lost before those students are tested in upper grade levels. Kindergarten teacher interviews might also supply input about additional benefits beyond academics. Early childhood education is an area with diverse practices; thus, research proving one method as effective would be quite valuable, as there are not a great deal of data regarding long-term effects of preschool.

The study did have limitations. Not all school districts in Missouri have an MPP. The district being studied is in rural southwest Missouri. It is not racially diverse and has a high free and reduced lunch rate. Each of the demographic factors may make the results from the study difficult to apply to another district.

Only one district was used in the study. This means sample sizes were smaller than a study conducted statewide. The smaller sample size is true for both the student data portion and the teacher interview portion of the study.

In Chapter Two, a review of literature is presented. First, studies are reviewed that relate to the academic impact of preschool on students. Second, literature regarding the benefits of preschool in relation to school readiness is reviewed. Additional articles are included in order to provide context for the study and to ensure validity. Best practices discovered during the course of the study of literature are also identified in Chapter Two.

Chapter Two: Review of Literature

Both the federal government and Missouri's lawmakers have identified early childhood education as an area of importance (MODESE, 2014a; U.S. Department of Education, 2014). This focus by the government has been demonstrated by increases in funding for early childhood education programs (Young, 2014). One such early childhood education program in Missouri is the Missouri Preschool Program (MPP). With taxpayer dollars used to fund such early childhood education programs, it is important for researchers to establish the academic and social merits of the programs.

This review of literature includes previous research regarding the academic and social effects preschool has on children around the country and world. Research conducted in other countries and states as to the age children should start school is relevant, as kindergarten starting age in Missouri is five, while preschool age can be as young as three (MODESE, 2014c). Studies about best practices in preschools and lasting academic effects on students related to the purpose of this study, as the researcher examined the lasting impact, if any, on the academic performance of students who participated in the MPP.

Academic Effects of Preschool on Students

According to Lamy (2013), high-quality preschool programs can provide academic impact so great it forever changes children's lives. This seemingly contradicts findings by the U.S. Department of Health and Human Services (DHHS) (2010) in their report on the impact of Head Start. Head Start is a preschool program funded by the

federal government designed to ensure access to early childhood education for low-income families (Office of Head Start, 2016). The DHHS report (2010) stated:

> At the end of the Head Start year, there was strong evidence that the Head Start group demonstrated better skills on the following six child outcomes related to children‘s language and literacy development: (1) Peabody Picture Vocabulary Test (PPVT) (vocabulary); (2) Woodcock-Johnson III (WJ III) Letter-Word Identification; (3) WJ III Spelling; (4) WJ III Pre-Academic Skills; (5) Color Identification; and (6) Letter Naming. (p. xvi)

The DHHS (2010) report also found although children experienced early academic gains after attending Head Start, most gains were no longer evident by the end of first grade.

Even more noteworthy, the report showed four-year-olds who attended Head Start demonstrated no cognitive advantages by the end of kindergarten (U.S. Department of Health and Human Services [DHHS], 2010). According to the DHHS (2010) report on Head Start, “No significant impacts were found for math skills, pre-writing, children‘s promotion, or teacher report of children‘s school accomplishments or abilities in any year” (p. xxiii). The findings from the Head Start study would seemingly go against the findings of Lamy (2013).

Similar findings regarding Head Start were confirmed in 2013 by Maxwell. In his study of 5,000 low-income children, Maxwell (2013) found gains experienced as four-year-olds in Head Start had disappeared by third grade. Initial findings by the U.S. Department of Health and Human Services indicated academic benefits for children who

spent one year in Head Start at age four and even greater academic gains for those who entered Head Start at age three (Maxwell, 2013).

Maxwell (2013) stated by the third grade students who attended Head Start were academically indistinguishable from their peers who did not attend the program. Not all researchers agree programs or curriculum make the biggest impact on students. Allington (2002) wrote teachers are the largest determining factor on a child's success in education. Allington (2002) stated, "Good teachers, effective teachers, manage to produce better achievement regardless of which curriculum materials, pedagogical approach, or reading program is selected" (para. 3).

In addition to the Head Start report, McElroy (2007) examined the effects on four-year-olds who participated in a preschool program in New York titled Early Start Preschool Program. McElroy (2007) examined standardized test scores of students who had participated in the program and compared those students' scores against their peers who did not participate. According to McElroy (2007), "There are positive cognitive effects of participation in a rich preschool program but that the return of measurable and statistically significant differences in cognition generally fades by third grade" (p. 81).

Hill, Gormley, and Adelstein (2015) conducted a similar study on students in a district-sponsored preschool program in Tulsa, Oklahoma. Hill et al. (2015) focused on two cohorts of students who participated in the district's pre-K program and how their third-grade standardized test scores in mathematics and reading compared to their peers. The results of Hill et al. (2015) were not completely consistent with previous studies.

According to Hill et al. (2015), "For the early cohort, we do not find effects of TPS (Tulsa Public Schools) pre-K participation on third grade test scores in either math or reading. For the late cohort, we find persistent effects on third-grade math test scores of 0.18 SD ($p < 0.05$), but no statistically significant effects for third grade reading" (p 76). The findings of the early cohort in the study by Hill et al. (2015) would seem to coincide with the findings of the DHHS report (2010) and the study by Maxwell (2013). The findings of the late cohort by Hill et al. (2015) do not coincide with Maxwell or the DHHS report (2010).

A comparative study was conducted in Missouri in 2010 by Rose, who examined district-sponsored preschool programs against community-sponsored programs. Rose (2010) looked at students who had participated in the district's preschool program for at least one year and compared their data (benchmarking data, Missouri Assessment Program scores, and discipline referrals) to that of their peers. Rose (2010) found that statistically speaking, students who attended the district program scored at approximately the same level as their peers who attended another preschool program. Both groups, however, exhibited a statistically significant scoring difference when compared with students who did not attend a preschool program prior to kindergarten entry (Rose, 2010). Kindergarten teachers who were interviewed at the district felt students who had preschool experience prior to kindergarten entry were more likely to be successful in kindergarten than their peers who had stayed home (Rose, 2010).

Ackerman and Cooley (2012) stated access to preschool and preschool enrollments continue to climb despite inconclusive research regarding the long-term

academic effects of early childhood education. Ackerman and Cooley (2012) cited several factors as contributing to the trend of increasing preschool enrollments. The factors include research on the effects of high-quality preschools in improving academic outcomes, the government's interest in reducing the achievement gap between subgroups, advocacy groups pressuring politicians to expand preschool access to the masses, and the participation of public schools in the preschool movement (Ackerman & Cooley, 2012). Research has shown learning does occur in preschool; however, to what extent these learning gains extend beyond just a few short years is still not entirely understood (Zucker, Cabell, Justice, Pentimonti, & Kaderavek, 2013).

Ward-Cameron (2013) concurred learning does take place in preschool, as 90% of a child's brain is developed by age five. Even in an age of technology, being literate is crucial, and therefore preschool teachers are that much more important (Ward-Cameron, 2013). Per Ward-Cameron (2013), children who learn to read are ready for life, and that process begins before kindergarten.

Long-term effects of a birth-to-five-years child care program in North Carolina were studied by Bartik (2012). This program was known as the Abecedarian program (Bartik, 2012). Looking at program participants at age 30, Bartik (2012) found statistically significant effects on educational attainment. Effects on earnings, income, and criminal records were not statistically significant with the Abecedarian program (Bartik, 2012). According to Bartik (2012), the Abecedarian program would be difficult to reproduce due to the cost per child, which was estimated to be roughly $80,000 for five years.

The criticism of the Abecedarian program was echoed by McCann (2013). According to McCann (2013), both the Abecedarian program and the Perry Preschool were high-quality programs, but the sample size was too small and the resources required to replicate were too great. McCann (2013) stated the average preschool has an impact of one-third of a year of extra learning on students, while the aforementioned resource-intensive programs had an impact of one-half to a full year of extra learning on students. The data are there, but so are the costs.

A longitudinal study conducted by Zucker et al. (2013) was focused on the development of literacy skills involving students who had attended preschool. Zucker et al. (2013) found, "Preschool children's phonological awareness and print knowledge predict decoding skills and, especially in the later elementary grades, early language and vocabulary skills emerge as key determinants of reading comprehension" (p. 1425). According to Zucker et al. (2013), phonological awareness is the understanding of the alphabetic principle, book and print concepts. The study focused on the trait of shared reading, which is when an adult and a child interact while looking at a book together (Zucker et al., 2013). This would seem to contradict the findings of the DHHS report as well as McElroy's study, which suggested there was not a connection between preschool and later academic success in elementary.

Per the DHHS (2010), "With the 4-year-old cohort, there was no strong evidence of impacts on children's language, literacy, or math measures at the end of kindergarten or at the end of 1st grade" (p. xxiii). Lamy's (2013) findings countered the DHHS findings by stating access to early childhood education services alone will not have a

meaningful academic impact; rather, the services must be of high quality. Lamy (2013) described a high-quality early childhood program in the following way:

> High-quality programs are staffed with well-educated, responsive teachers with strong backgrounds in child development and early learning pedagogy. Administrators tend to be knowledgeable about and supportive of best practices in early learning, providing meaningful professional development and strong classroom supports. Research-backed curricula support high standards for teaching and learning through a good mix of teacher-directed and child-directed activities (many play-based). Classrooms are chock-full of attractive, tempting materials for a wide variety of fun, educational experiences. Family outreach is vibrant and tenacious. (p. 34)

The qualities that make up the fabric of each preschool program affect the academic learning of the children involved in the program, according to Lamy (2013).

Another research team that focused on quality of early childhood education was Zucker et al. (2013). Zucker et al. (2013) found a link between an increase in frequency of shared reading in a preschool setting and an increase in the language skills of those children. However, Zucker et al. (2013) also stated frequency alone did not lead to long-term gains in kindergarten and first grade. Long-term gains were correlated with the quality of the teacher who worked with students on reading skills (Zucker et al., 2013). According to Zucker et al. (2013):

> The most salient finding from the present study is not only that teachers' extratextual talk before, during, and after the reading of a text is important for

> fostering skills in the short term but also that these qualities also play a role in children's long-term language and literacy development. (p. 1435)

Zucker et al. (2013) argued the quality of the early childhood teacher has an impact on the academic gains of students beyond the time when students are in the classroom of that teacher.

Quality of education was a focus point for Lamy (2013) as well. Per Lamy (2013), preschool provides many children with opportunities they may not otherwise have due to their socioeconomic status. Multiple factors place children living in poverty at a disadvantage, such as the following: parents with a lower level of education; fewer resources; and a decreased likelihood of playful conversational banter with an adult, which helps increase the child's vocabulary (Lamy, 2013). According to Lamy (2013), "We know that preschool can provide the developmentally stimulating experiences that many children growing up in poverty lack" (p. 32).

Children who grow up in poverty have many outside factors that shape their development (McCleneghan, 2013). These factors shape the way children respond to the situations life presents (McCleneghan, 2013). Per McCleneghan (2013):

> Stress, lack of consistent care and affection, not to mention nutrition or housing, the presence of violence or threat of abuse, and the generalized anxiety which characterize the lives of many poor children actually shape the ways in which human brains function. (p. 26)

McCleneghan (2013) went on to state an intelligence test does not necessarily measure the intellect of the person taking it, but rather how well the person was prepared to take that given test.

Growing up in poverty does not have to be a determining factor for educational success, according to Mason and Galloway (2012). Mason and Galloway (2012) stated children in poverty may not have traditional strengths in the view of educators, but those children still have strengths that can be capitalized on for learning achievement. According to Mason and Galloway (2012), children in poverty may have mastered oral language or dialect and know how to properly apply this mastery in social settings. The proper usage of these skills by teachers is key to students in poverty achieving inside the classroom (Mason & Galloway, 2012).

Specific components that make a preschool one of quality were outlined by Harrison, Goldfeld, Metalfe, and Moore (2012). Harrison et al. (2012) linked five components of high-quality preschools to increased early childhood achievement. Those components included high-quality early intervention, family involvement, professional development of teachers, involving the local community, and being competent regarding the local culture (Harrison et al., 2012). In addition to components that define high-quality preschools, Harrison et al. (2012) outlined five aspects researchers have proven to be ineffective when developing a preschool program. According to Harrison et al. (2012), not engaging families, not attempting to engage the community, and not including local culture when developing a preschool program will lead to a low-quality preschool program.

The state should develop standards to monitor the quality of preschool programs, because the quality of early childhood education matters (Mathis, 2012). Mathis (2012) identified different components as being key in determining whether an early childhood education program is high-quality. Universal access for four-year-olds and expansion of access to three-year-olds are key to a successful preschool program, according to Mathis (2012). Mathis (2012) went on to state social and health programs integrated into the early childhood education program lead to improved success.

Universal access to preschool is part of the solution for developing quality early childhood education programs (McGee & Dail, 2013). Closing the achievement gap between students from different socioeconomic levels is possible at kindergarten entry, according to McGee and Dail (2013). In a study of a preschool program funded by an Early Reading Foundation grant, students developed high levels of literacy knowledge (McGee & Dail, 2013). By kindergarten entry, the reading gap between middle class and at-risk students had closed (McGee & Dail, 2013). According to McGee and Dail (2013), this was due to the implementation of progress monitoring and benchmark assessments rather than a preschool specifically designed for low-income students.

Access to early childhood education is an issue Tennessee has addressed. Tennessee has a statewide preschool program known as Tennessee Voluntary Prekindergarten program (TN-VPK), according to Lipsey, Hofer, Farran, Bilbrey, and Dong (2012). The state annually invests $18 million into the program, which has recently come under fire from some politicians as being expensive day care (Lipsey et al., 2012). Lipsey et al. (2012) found students who attended TN-VPK significantly

outperformed those who did not attend VPK. The Woodcock-Johnson III achievement test was used by Lipsey et al. (2012) to measure multiple academic areas.

Lipsey et al. (2012) found students were better prepared for kindergarten after participating in preschool, but Lipsey et al. did not examine long-lasting effects of the TN-VPK. Studies dating back to 2007 have shown only short-term benefits of preschool, yet preschool programs continue to expand. McElroy's (2007) research on New York's preschool program revealed the benefits of the program were short-term. McElroy (2007) stated the time is too structured and content-driven. McElroy (2007) asserted, "Little time is spent allowing the children to explore, expound and expand their knowledge" (p. 81). Qualities of the preschool program seemingly determine its impact.

Galindo and Sheldon (2012) expanded on possible reasons for academic gains beyond preschool quality. According to Galindo and Sheldon (2012), previous researchers found older students are positively impacted in terms of achievement by increased family involvement. In their study, Galindo and Sheldon (2012) established similar results when examining academic achievement of kindergarten students and its relationship to family involvement. Galindo and Sheldon (2012) stated, "On average, children whose parents were more involved in school activities and had higher educational expectations tended to outperform their peers who did not have this support and encouragement from family members" (p. 100).

Kim and Byington (2016) stated the literacy and language skills of children develop rapidly from birth to five years of age. Kim and Byington (2016) found exposure to literacy early in life is a predicator of later academic success in school. Lack

of exposure to reading has a negative impact on academics for students (Kim & Byington, 2016). According to Kim and Byington (2016), "Children who have not developed basic literacy skill by the time they enter school are 3 to 4 times more likely to drop out of school" (p. 1).

Kim and Byington (2016) studied a community-based model for increasing literacy in preschool-aged children. The program Kim and Byington (2016) studied was the Family Storyteller Program. This program is federally funded (Kim & Byington, 2016). According to Kim and Byington (2016), "The Family Storyteller Program features weekly 1-hour sessions attended by families and their preschool age child with a focus on shared reading and participation in other types of literacy activities" (p. 2). The study featured both a six-week session and a four-week session (Kim & Byington, 2016). Families were provided with supplemental materials to take home at the end of each session (Kim & Byington, 2016).

The results reported by parents at the conclusion of the six-week and four-week sessions were positive (Kim & Byington, 2016). Parents saw an increase in the amount of time their children wanted to engage in reading (Kim & Byington, 2016). According to Kim and Byington (2016), "Children also participated in the following activities more often: drawing pictures, singing or reciting rhymes, telling stories, playing language and literacy games, and going to the library" (p. 3). Kim and Byington (2016) stated parents reported spending more time reading with their child each day after the sessions concluded. Families also had more books in their homes following the conclusion of the Family Storyteller Program (Kim & Byington, 2016).

School Readiness

The definition of school readiness extends beyond students, per the National Association for the Education of Young Children (NAEYC) (2009). When trying to determine if children are ready for school, one needs to step back and look at the whole picture (National Association for the Education of Young Children [NAEYC], 2009). According to the NAEYC (2009), "School readiness, in the broadest sense, is about children, families, early environments, schools, and communities" (p. 1). Children are not simply born ready or not ready for school; it is a development process influenced by families and environmental interactions (NAEYC, 2009).

The notion school readiness is not innate is a notion with which the National Center for Infants, Toddlers, and Families (2013) certainly agreed. According to the National Center for Infants, Toddlers, and Families (2013), school readiness is a process that extends beyond the children themselves. Per the National Center for Infants, Toddlers, and Families (2013), "[School readiness] starts at birth with the support of parents and caregivers, when young children acquire the social and emotional skills, knowledge, and attitudes necessary for success in school and life" (para. 1). Preparing a child for school entry requires work from the child's family (National Center for Infants, Toddlers, and Families, 2013).

A study on the effects in kindergarten of implementing the Research-based Developmentally Informed Intervention (REDI) in Head Start was completed by Bierman et al. (2014). According to Bierman et al. (2014), "Children from disadvantaged backgrounds often show a lag in school readiness at kindergarten entry, initiating an

achievement gap that grows over time and contributes to large, long-term disparities in educational attainment, employment, and earnings" (p. 140). Bierman et al. (2014) examined 13 outcomes at the end of kindergarten and found five effects that favored children who had been through the REDI during Head Start. Also, attention issues which were noted by teacher and parent surveys prior to the intervention during Head Start showed significant intervention effects during kindergarten (Bierman et al., 2014).

According to Connolly and Olson (2012), early childhood education benefits include increased academic achievement in school as well as benefits in non-academic areas including health, depression, obesity, and wages. Connolly and Olson (2012) also found being retained later on in school was a much more likely outcome for students who did not begin school until kindergarten when compared to peers who received some form of early childhood education. These findings were in line with those of Lipsey et al. (2012), who specified there is a window of learning that is greatest during the first five years of life. Lipsey et al. (2012) also stated this is why there are positive effects associated with high-quality early childhood educational programs.

Findings like those from Connolly and Olson (2012), as well as Lipsey et al. (2012), have fueled international debate regarding when the appropriate time to begin school is for children. According to Whitebread and Bingham (2013), England begins formal schooling at age four. This has caused internal debate in England; Whitebread and Bingham (2013) cited a letter signed by 130 early childhood experts as evidence of this debate. Per Whitebread and Bingham (2013), these experts believe formal schooling

should be delayed until age seven in favor of a play-based preschool program much like other European countries have adopted. Whitebread and Bingham (2013) wrote:

> This would bring it in line with the overwhelming evidence showing that starting school later is best, and the practice in many countries, such as Sweden and Finland. These countries have better academic achievement and child well-being, despite children not starting school until age 7. (p. 28)

Whitebread and Bingham (2013) argued traditional thinking is that the sooner children start formal schooling, the more those children will benefit academically, but that practice has proven otherwise in foreign countries.

Canadians are having a similar internal debate regarding early childhood education. According to "If You Could Do It Over" (2011), the province of Quebec offers taxpayer-funded early childhood education beginning at age two. There is a national push for other provinces to adopt similar policies even though the lasting educational benefits do not seem evident, as Quebec students are underperforming on standardized tests when compared to their peers in other provinces ("If You Could Do It Over," 2011). When compared with Whitebread and Bingham's (2013) findings which suggested students under the age of four are too young for public school, the point that two is too young would seem valid ("If You Could Do It Over," 2011; Whitebread & Bingham, 2013).

The Center on the Developing Child at Harvard University (2016) used science to advocate for early childhood education. The Center (2016) stated research shows brains are built over time and begin from the bottom up. According to the Center (2016), "In

the first few years of life, 700 to 1,000 new neural connections form every second" (para. 2). This is why early childhood education is so critical (The Center, 2016).

The American education system is currently expanding to include younger learners much like it did throughout the twentieth century (Schaub, 2009). Young (2014) cited Missouri's recent passage of increased funding for public preschools as evidence of early childhood education expansion. Still, according to Schaub (2009), America has been slow to get on the early childhood bandwagon. Schaub (2009) cited as evidence, "In 1940, only 43% of five and six year olds were enrolled in school. By 1964, that percentage had risen to 83, in 1984 to 94.5 and in 2004, 95.4" (p. 337). This despite the fact kindergarten has been in existence in the United States since the 1850s, according to Schaub (2009).

In Missouri, Rose (2010) interviewed teachers at a district regarding the effects of student participation in the district preschool program in comparison with other local preschool options. Teachers were not able to distinguish between students who had attended the district preschool and those who had attended another preschool (Rose, 2010). According to Rose (2010):

> The teachers interviewed shared that the students who did not participate in a pre-K program were easily identifiable. They consistently discussed the challenges faced in navigating the kindergarten classroom by those who were absent of a pre-K experience. The teachers reported that they repeatedly observed students without former pre-K experience enter their classrooms experiencing difficulty negotiating socially with others, demonstrating minimal pre-academic knowledge,

> and being challenged to attend to a task. They said that these students often exhibit social challenges at the point of kindergarten entry. They shared that these students frequently exhibited difficulty working within the context of a group, managing multiple transitions across an instructional day, and listening to teacher direction. (p. 104)

Kindergarten readiness is a complex idea that has multiple meanings to various people, according to Hatcher et al. (2012). Hatcher et al. (2012) wrote, "Chronological age, developmental stage, specific academic and social skills, and home/school connections are associated with kindergarten readiness" (p. 2). In Ireland, kindergarten readiness has shifted away from age-based developmental theories and toward social theories (McGettigan & Gray, 2012). McGettigan and Gray (2012) stated, "We propose that the primary mechanisms through which children acquire readiness-related competencies are the social relationships children form with peers, parents and teachers" (p. 16).

Many governments have not yet made the transition away from viewing readiness for kindergarten as being based on age, including the British ("Government Wants All Children," 2009). The Irish government has a flexible system for entering kindergarten, according to McGettigan and Gray (2012). McGettigan and Gray (2012) stated:

> In contrast to most European countries which operate a compulsory school starting age of six, Ireland operates a flexible system with children starting school from four through to six years of age. Perhaps due to the scarcity of preschool places in rural areas, the majority of parents in this study appear to support this system. (p. 26)

McGettigan and Gray (2012) wrote the flexible school entry system benefits students academically.

Duncan et al. (2011) conducted a metaanalysis of early childhood education programs in the United States and found the average starting age was 3.8 years. The Irish government recently included in their budget preschool funding for children ages three years and three months through four years and seven months, according to McGettigan and Gray (2012). This must be in an effort to better prepare students for school, as McGettigan and Gray (2012) found, "The majority of children who attended some form of preschool were ready for school. In contrast, a high percentage of the children who remained at home were not ready for school" (p. 26).

Weiland and Yoshikawa (2013) found curriculum and the professional development of teachers impacts school readiness. To positively impact school readiness, the curriculum needs to be evidence-based (Weiland & Yoshikawa, 2013). The education levels of teachers need to be at least at the bachelor's degree level, and teachers need to receive ongoing coaching to positively impact the school readiness of preschool students (Weiland & Yoshikawa, 2013). According to Weiland and Yoshikawa (2013), "We detected substantial and statistically significant effects of the prekindergarten program on educational outcomes both in domains that were targeted directly by the prekindergarten curriculum—literacy, language, mathematics, and emotional development—and in a related but nontargeted domain" (p. 2125).

The view of preschool as a tool to prepare students for kindergarten rather than as an experience that stands on its own is increasing in popularity, according to Hatcher et al. (2012). Hatcher et al. (2012) continued:

> The primary focus of preschool education has shifted in recent years from experiential, play-based programs to a more academic model. Teachers and parents assume that a major outcome of preschool includes increased readiness of children for kindergarten in social/emotional and academic aspects. (p. 2)

Fisher and Frey (2015) echoed this point by noting the increased expectations on student learning outcomes. According to Fisher and Frey (2015), the best way to meet these increased expectations is to immerse children in information as soon as possible. Not all feel this is a positive shift, including Whitebread and Bingham (2013), who cited play as key in developing powerful learners.

Duncan et al. (2011) argued as the American education system is K-12, it would be logical to suggest preschool should prepare children for kindergarten so the children are best able to profit from the next 13 years of schooling. Whitebread and Bingham (2013) argued the focus should be on the method used in preschool instruction. According to Whitebread and Bingham (2013), "Experimental psychology has consistently demonstrated the superior learning and motivation arising from playful, as opposed to instructional, approaches to early education" (p. 28). Hatcher et al. (2012) cited the change in the role of kindergarten as a major reason these questions have now arisen in preschool. According to Hatcher et al. (2012), kindergarten was formerly a

place of learning through play, but now it experiences government standards for learning as well.

Missouri lags behind other states in the nation in funding for state preschools (NIEER, 2014). Per the National Institute for Early Education Research (NIEER) (2014), Missouri ranked 38th out of 40 states with a state-funded preschool program. Missouri also ranked near the bottom in preschool enrollment (NIEER, 2014). Missouri ranked 35th in preschool access for four-year-olds (NIEER, 2014). According to NIEER (2014), Missouri did rank near the middle in preschool access for three-year-olds, coming in at 21st in the nation out of 40.

According to Young (2014), the state of Missouri passed its bill providing more funding to preschools in an effort to save money in the long run. Potential savings through preschool investment would come from early childhood teachers spotting learning issues before a child falls behind, giving students a boost, making them less likely to repeat a grade, and overall increasing graduation rates (Young, 2014). Lamy (2013) cited many more economic benefits to investing in preschool, including the following: increases in adult earnings, increased tax revenues for the state and federal governments, savings in costs associated with the justice systems, and less reliance on social programs.

Economic justification for investing in early childhood education was cited by Mathis (2012). Mathis (2012) stated economic returns for investing in early childhood education have been as high as $17.07 for each dollar invested, and no study has ever found a negative return on investment. Despite this, according to Mathis (2012), per

pupil spending nationally on early childhood education programs is lower than a decade ago when inflation is considered. Mathis (2012) argued even if early childhood education brings back a fraction of their proven outcomes, the economic justification for the investment is there.

Two-term Missouri Governor Jay Nixon made early childhood education a priority of his administration (Holste & Channing, 2015). Under Nixon's guidance, funding for the Missouri Preschool Program received a five million dollar increase from fiscal year 2014 to fiscal year 2015 (Holste & Channing, 2015). Governor Nixon credited innovative use of federal resources with enabling the state to increase early childhood funding (Holste & Channing, 2015). According to Holste and Channing (2015), Nixon launched Missouri Smart Start in 2014 to expand/improve high-quality early childhood education opportunities. Missouri Smart Start has served over 1,200 students to date (Holste & Channing, 2015).

Funding for early childhood education programs has not always been consistent. Head Start took a severe financial hit in 2013 (Fahrenthold, 2013). According to Fahrenthold (2013), when Congress's sequester took effect, Head Start lost funding and enrollment. Fahrenthold (2013) stated, "Head Start officials had to cut at least $401 million of their federal funding for fiscal 2013. They also had to eliminate services for 57,000 children" (para. 18). Lack of funding for early childhood education impacts individual children and their families (Fahrenthold, 2013).

United States Secretary of Education Arne Duncan (2013) argued for states as well as the federal government to increase the financial investment in early childhood

education. Duncan (2013) stated the U.S. spends less on early childhood education than other industrial nations and as a consequence has fewer students enrolled in early childhood programs. According to Duncan (2013):

> Missouri could receive about $48 million just in the first year it participates in the Preschool for All program (President Obama's program). That funding, combined with an initial 10 percent state match of $4.8 million, would enable Missouri's providers to serve about 5,900 additional children from low- and moderate-income families in the first year of the program alone. (para. 41)

Duncan (2013) advocated for a financial commitment to preschool from both the federal government and state governments as a way to increase participation in early childhood education.

President Obama's Preschool for All program goes past public preschool access (Rodriguez, 2013). The program has multiple components that support the families of children (Rodriguez, 2013). According to Rodriguez (2013):

> [The Preschool for All Program] includes home visiting programs for low-income families, to ensure new parents have access to the help and support they need from local nurses or other care-givers, and it includes funding for additional high-quality learning programs for children from birth to age three. (para. 6)

This investment in early childhood education is being made due to the high return (Rodriguez, 2013).

Duncan et al. (2011) argued initial investment must be followed up with high-quality future investments to attain the desired long-term impact on students. More

money is coming into early childhood education, but how it is spent could determine the long-term success of preschools. According to Whitebread and Bingham (2013):

> Much of children's play involves pretending that one thing represents another, for example that a cardboard box is a space ship. This ability is thought to be unique to humans and underpins language, drawing and other ways in which we convey meaning. (p. 28)

Whitebread and Bingham (2013) believed this unique ability of humans is a major part of the learning process and needs to be capitalized on during early childhood education.

According to Hatcher et al. (2012), readiness for kindergarten relates to social and emotional factors, not meeting a set of academic standards. Hatcher et al. (2012) conducted qualitative research and suggested, "Participants associated kindergarten readiness with social-emotional maturity and the ability to interact successfully with peers and teachers. Responses included descriptions of social skills, social problem solving, and emotional expression" (p. 6). In Ireland, McGettigan and Gray (2012) found the average age of students who began formal schooling was four years and nine months. According to McGettigan and Gray (2012):

> The vast majority of parents initially thought their child was ready for school; on reflection, almost a third believe they were much too young and this affected their ability to settle. This finding adds support to previous research which suggests that younger children find the start to formal schooling more difficult than their older counterparts. (p. 19)

McGettigan and Gray (2012) argued age plays a major factor in kindergarten readiness, which may contradict traditional views regarding academics as the main factor in being ready to start formal schooling.

Whitebread and Bingham (2013) presented their opinion regarding the significance of play:

> Through all kinds of physical, constructional and social play, children become more aware of, and more in control of, their physical and mental activity. This allows them to gradually rely less on adult support and become more "self-regulating," both intellectually and emotionally. (p. 28)

Despite research that stresses the importance of play, many continue to view preschool merely as an academic stepping stone to kindergarten, according to Hatcher et al. (2012). Hatcher et al. (2012) found implications “that parents and teachers are viewing preschool experiences as precursors or ‘preparatory’ programs, not as programs with intrinsic value for children regardless of links to formal schooling” (p. 10).

Almon (2013) echoed the sentiments of Hatcher et al. (2012). When children play, impressions and ideas are developed within them (Almon, 2013). Through this avenue, children are able to express their ideas, and thus play is one of the primary approaches to learning for children (Almon, 2013). Almon (2013) stated play-based learning is a complex concept.

During play-based learning, children explore their own ideas during play with teacher assistance as required (Almon, 2013). Almon (2013) expanded on this by saying student knowledge grows when teachers present the students with interesting content to

be experimented with by each child. According to Almon (2013), "The children's own play and the content offered by teachers enhance one another" (p. 13).

Dutton (2012) echoed this point regarding the role of teachers in play-based learning. Dutton (2012) found a teacher's role was not to be in control the entire time. According to Dutton (2012), "The children's final creation of their play was entirely their doing; my main roles were to listen, observe, and document and support" (p. 16). Examples of play-based learning are numerous and include activities such as reading books, storytelling, exploring, and more (Almon, 2013). Almon (2013) went on to write that increasing academic expectations are a part of the reason play-based learning is losing its place in early childhood education. According to Almon (2013), there is no research children who learn to read earlier are better readers than their peers later in elementary school.

The purpose of preschool is not universally agreed upon. According to Cross and Conn-Powers (2014), curriculum is critical in a preschool setting. Cross and Conn-Powers (2014) stated, "The purpose of adopting an effective, evidence-based curriculum is to increase children's learning so that they enter kindergarten with the skills needed for success" (p. 361). Using a curriculum that is proven effective is key to student learning (Cross & Conn-Powers, 2014).

Project Construct is one of the approved curriculum models for the MPP, according to the MODESE (2014b). According to the Project Construct National Center (2015), Project Construct is a curriculum that is learner-centered and "was developed from research demonstrating that learners construct knowledge through interactions with

their physical and social environments" (p. 1). While recognizing play as important part of learning, the Project Construct curriculum is also aligned to the state standards for early childhood education in Missouri (Project Construct National Center, 2015). One of the goals of Project Construct is to prepare students for kindergarten (Project Construct National Center, 2015).

Summary

Researchers have shown learning does occur in preschool; however, to what extent these learning gains extend beyond just a few short years is still not entirely understood (Zucker et al., 2013). Studies seem to contradict each other. The DHHS (2010) found academic gains exhibited by students in Head Start had faded by the end of first grade. Rose (2010) found students who attended a preschool program, whether private or public, showed statistically significant scoring differences on kindergarten benchmarking from their peers who remained at home prior to kindergarten entry. Benefits of early childhood education extend beyond academic achievement. According to Connolly and Olson (2012), early childhood education benefits include increased academic achievement in school, as well as benefits in non-academic areas such as health, depression, obesity, and wages.

In Chapter Three, the methodology of the research project is discussed. This includes the procedures used and the design of the research. The details of how students are grouped and which data were used are revealed. Through a case study of the MPP at a rural school district in southwest Missouri, possible differences in assessment scores between those who participated in the MPP and those who did not participate in the MPP

were examined. Teachers in the district were interviewed to examine to what extent, if any, the MPP provides an advantage for students entering school.

Chapter Three: Methodology

A focus on early childhood education by the state government has resulted in incoming dollars to the MPP (Young, 2014). Data collected through this case study were examined to determine whether students who participate in the MPP demonstrate any long-term academic advantages over their peers by using communication arts assessment scores of kindergarten, first-grade, and second-grade students who have participated in the MPP versus similar peers who have not. Groups of peers who did not participate in the MPP could include students who attended another early childhood education program, as well as students who have no prior early childhood education.

This case study also included a qualitative component. Kindergarten, first grade, and second grade teachers in the district were interviewed regarding their classroom experiences with students who attended the MPP prior to kindergarten entry. Kindergarten is the standard grade for school entry in Missouri (MODESE, 2016).

Kindergarten is the first year of school where students who have attended the MPP mix with students who have not attended the MPP. This research was intended to determine effectiveness of the MPP in producing sustained academic gains. The researcher also sought to examine possible benefits to students attending the MPP beyond the realm of academics.

The methodology in this study involved causal-comparative research. Fraenkel, Wallen, and Hyun (2014) described causal-comparative research as "investigators attempting to determine the cause or consequences of differences that already exist between or among groups of individuals" (p. 363). The differences between students

who completed the MPP and those who did not already exist, if there are any differences. This study allowed for the examination of the differences between the two groups and the consequences of those differences, if any.

Problem and Purpose Overview

Early childhood education is an area diverse in terms of the number of preschool models and practices within the field. Effective practices in early childhood education need to be identified to efficiently spend tax dollars that contribute to public education. Missouri taxpayers are providing funding for an early childhood program with very little evidence to support its ability to show long-term academic gains for students enrolled in the program.

This research will help stakeholders better understand early childhood education, specifically the MPP. Annually Missouri taxpayers spend over $11 million toward financial support of the MPP ("Analysis: Mo. Preschool Grants," 2012). Funding for the MPP increased under the governorship of Jay Nixon (Holste & Channing, 2015).

Through a case study of the MPP at a rural school district in southwest Missouri, possible differences in assessment scores between those who participated in the MPP and those who did not participate in the MPP were examined. Specifically this case study involved examination of the assessment scores of students in kindergarten, first grade, and second grade. Students who participated in the MPP were compared to similar peers who did not participate in the program.

Aimsweb assessment scores were examined in communication arts in selected grade levels to examine a possible academic difference between students who

participated in the MPP and their peers who did not participate. Kindergarten teachers, first-grade teachers, and second-grade teachers in the district were interviewed to examine to what extent, if any, the MPP provides an advantage for students entering school.

Research questions. The following research questions guided this study:

1. What difference exists, if any, between the kindergarten communication arts assessment scores of students who participated in the Missouri Preschool Program and the assessment scores of similar peers who did not participate in the Missouri Preschool Program?

$H1_0$: There is no difference in kindergarten communication arts assessment scores between students who participated in the Missouri Preschool Program and those students who did not participate in the Missouri Preschool Program.

$H1_a$: There is a difference in kindergarten communication arts assessment scores between students who participated in the Missouri Preschool Program and those students who did not participate in the Missouri Preschool Program.

2. What difference exists, if any, between the first-grade communication arts assessment scores of students who participated in the Missouri Preschool Program and the assessment scores of similar peers who did not participate in the Missouri Preschool Program?

$H2_0$: There is no difference in first-grade communication arts assessment scores between students who participated in the Missouri Preschool Program and those students who did not participate in the Missouri Preschool Program.

$H2_a$: There is a difference in first-grade communication arts assessment scores between students who participated in the Missouri Preschool Program and those students who did not participate in the Missouri Preschool Program.

3. What difference exists, if any, between the second-grade communication arts assessment scores of students who participated in the Missouri Preschool Program and the assessment scores of similar peers who did not participate in the Missouri Preschool Program?

$H3_0$: There is no difference in second-grade communication arts scores between students who participated in the Missouri Preschool Program and those students who did not participate in the Missouri Preschool Program.

$H3_a$: There is a difference in second-grade communication arts assessment scores between students who participated in the Missouri Preschool Program and those students who did not participate in the Missouri Preschool Program.

4. What are the perceptions of kindergarten, first-grade, and second-grade teachers regarding student participation in the Missouri Preschool Program as it pertains to school readiness, academic performance, and social and behavioral awareness?

Research Design

In order to discover any possible differences between students who did and did not attend the MPP and sustained academic success later in their school careers, a mixed method approach was used. A mixed method approach was chosen, because part of the data being examined were already in existence prior to the research being conducted.

Also, interviews were conducted at an early grade level for which state-required testing does not exist, but the MPP's potential impact may exist.

Fraenkel et al. (2014) wrote when the cause and effect being studied have already occurred, this is a form of quantitative research known as causal-comparative research. Assessment data were examined to provide insight into the possibility of students attending the MPP and experiencing long-term academic advantages over their peers. The research design for this study consisted of two groups: students who participated in the MPP and similar peers who did not participate in the MPP. Fraenkel et al. (2014) found, "The basic causal-comparative design involves selecting two or more groups that differ on a particular variable of interest and comparing them" (p. 367). The data came from events that have already taken place, as the students have previously taken the Aimsweb test. Fraenkel et al. (2014) stated causal-comparative research involves no manipulation on the part of the researcher.

The qualitative aspect consisted of interviews with ten total teachers from kindergarten, first grade, and second grade. The interviews were four to seven questions long. The questions were designed to elicit what impact, if any, the teachers have noticed the MPP having on students who completed the program prior to kindergarten versus students who did not attend the MPP.

The district in rural southwestern Missouri was selected for case study for multiple reasons. One reason was access to individual assessment scale scores that would not be available at other districts. A second reason was the ability to identify individuals who completed the MPP and remained in the same school through the second grade.

This is possible because of the length of time the district has had its MPP. Larger districts do not necessarily have larger student populations within their MPPs. The district being studied had its MPP for over one decade.

A case study is an in-depth investigation of an individual, group, or institution to determine the variables and the relationship among variables influencing the current behavior or status of the subject of the study (Fraenkel et al., 2014). Case studies are an approach frequently used in qualitative research (Fraenkel et al., 2014). Cases typically focus on one individual, classroom, school, or program (Fraenkel et al., 2014).

Population and Sample

The school district in which the case study took place has an enrollment of just over 1,300 students K-12 with a free and reduced price meal rate of 72%, according to the MODESE (2015). The setting of the research was within a rural public school in southwest Missouri. The data utilized were Aimsweb data from individual students during their kindergarten, first-grade, and second-grade years in the area of communication arts. The target population was students who completed the second grade by the conclusion of the 2014-2015 school year.

The school district examined has had the MPP since 2002. The district has a student population that is 97.7% White as of the 2014-2015 school year. The free and reduced price meal rate for the same school year in the district was 69.1%.

The qualitative piece focused on the kindergarten, first grade, and second grade teachers in the district. The district has five kindergarten teachers, five first grade teachers, and five second grade teachers. Each of interview participant was asked four to

seven questions in a one-on-one setting (see Appendix A). The questions related to the main benefits of student participation in the MPP as it pertains to school readiness, academic performance, and social and behavioral awareness in terms of students who are in kindergarten.

The district is within the borders of Missouri, thus making it eligible to apply for and maintain a MPP. The district is required to follow the same MPP guidelines as all other MPP schools. The MPP is an early childhood education program that is only available within Missouri. Thus it is important for those reading this research to remain cautious when making generalizations regarding the research conducted within this study.

Instrumentation

The case study utilized Aimsweb, which is an assessment tool for grades K-2 in the district being studied. The district uses Aimsweb to progress monitor and benchmark students in the area of communication arts. For the qualitative piece, teachers were interviewed using a set of prewritten questions.

Quantitative. The quantitative instruments used in this study were the Aimsweb assessment scores from kindergarten, first-grade, and second-grade students in the area of communication arts. The scores were obtained from the reading coach at the school, who is charged with collecting all Aimsweb data for grades K-2. The reading coach was able to provide anonymity and protect the confidentiality of student data. Fraenkel et al. (2014) found achievement tests are an acceptable instrument to use in causal-comparative research.

The data analysis included an independent samples *t*-test to examine assessment score data. Independent samples *t*-tests were conducted for kindergarten, first grade, and second grade. A separate *t*-test for communication arts was conducted for each grade level.

Qualitative. The qualitative instrument for this study was the interviews of ten K-2 teachers at the rural school district in southwest Missouri. Interview questions were created by the researcher and field-tested with former kindergarten teachers from the district who were not participants in the study. Field testing questions is important, because it ensures validity and establishes reliability of the research (Fraenkel et al., 2014).

Data Collection

One school district in rural southwest Missouri was selected for the purposes of this case study. At this school district, three grade levels of student data were examined. The grades selected for data examination included kindergarten, first grade, and second grade.

The reading coach from the school district accessed the assessment data from Aimsweb. Student names were not attached to the data; instead the data were coded. The reading coach identified which students participated in the MPP by using school records such as cumulative files and yearbooks. This identification allowed the data to be split into two groups: students who participated in the MPP and similar peers who did not participate in the MPP.

Each teacher was interviewed one-on-one so as not to influence the answers of the other teachers. Each interview featured identical questions, and the answers were recorded verbatim into a transcript. Before being interviewed, each participant was required to sign an informed consent form.

Fraenkel et al. (2014) stated having interviewees sign an informed consent form is ethically desirable due to the intimacy and vulnerability that may develop during the course of the interviews. Interview questions were provided to the participants ahead of time, and interviews were scheduled in advance at a time not during school hours. The interviews were recorded, and the interviewer took notes during the response portions of the interviews.

Data Analysis

The mixed method of the study allowed for maximum examination in this case study. According to Fraenkel et al. (2014), "As the use of mixed-methods designs continues to increase, we expect to see more use of quantitative analysis in conjunction with more customary qualitative analyses" (p. 453).

Quantitative. An independent samples *t*-test was used in this study as a means for analyzing the data. Fraenkel et al. (2014) stated, "The most commonly used test in causal-comparative studies is a *t*-test for differences between means" (p. 370). In this study, only two groups were compared.

For each research question, the *t*-test was conducted to examine whether any significant differences exist between assessment scores for students who attended the MPP and those who did not attend. In each of the three grade levels (K-2), the *t*-test was

applied to communication arts scores of the two groups. The level of significance needed to reject the null hypothesis was 0.05.

Qualitative. The interview responses were recorded, transcribed, and organized for the coding process. As described by Fraenkel et al. (2014), open and axial coding procedures are used to identify key words and phrases, categories, and common themes.

Ethical Considerations

During the course of the quantitative portion of the research, student data were protected by coding students rather than using their actual names. The researcher also stated a range of student records used in the research rather than identifying specifically how many student records were used during the course of the research. All electronic student data were password-protected. The raw electronic student data were kept under the account of the district's reading coach.

The interview portion of the research was conducted by the school counselor. This was done to avoid any possible influence on the answers given by those being interviewed. This also allowed for anonymity for those being interviewed, as pseudonyms were attached to their transcripts rather than actual names.

Summary

The methods used within this research study were guided by the research questions as well as the purpose of examining a possible link between students participating in the MPP at prekindergarten age and later academic gains in school. Specifically the research was focused on the Aimsweb scores in kindergarten, first grade, and second grade of students who participated in the MPP versus similar peers who did

not participate in the MPP. Many tax dollars have been invested in early childhood education, and accountability requires identifying through research whether practices such as the MPP are effective.

The research conducted was mixed methods in design. Data were examined from one school district in rural southwest Missouri. Only school districts within Missouri were eligible for the study, as the MPP is a prekindergarten program found exclusively within the state. The qualitative data were collected via interviews of the five kindergarten teachers at the rural school district in southwest Missouri. These data were analyzed by looking for emerging themes in the interview transcripts.

Chapter Four: Analysis of Data

Overview of the Study

The purpose of the study was to examine potential long-term academic benefits for students who participated in the MPP in the area of communication arts in kindergarten, first grade, and second grade versus their peers who had not participated in the MPP. The non-MPP peer group included students who had attended another early childhood education program as well as students who had no prior early childhood education. Students who had participated in the district's Title I preschool program were removed from the peer group. The Title I preschool uses the Project Construct curriculum which is the same curriculum as the MPP.

This was a mixed methods case study. All data came from one rural school district in southwest Missouri. The quantitative component of the study consisted of data from Aimsweb collected and coded by the reading coach. The data were from five separate cohorts of students who completed kindergarten, first, and second grade at the selected school district. The benchmark data were from the fourth quarter of each school year after the assessments were administered by the students' classroom teachers. The reading coach compiled and coded the Aimsweb data into a Microsoft Excel spreadsheet. Each cohort received their own page within the spreadsheet.

The kindergarten data focuses on letter-sound recognition by students. The first- and second-grade Aimsweb data are a type of progress and growth monitoring data known as curriculum-based measurement (CBM). According to Pearson (2014):

> This form of brief assessment measures overall performance of key foundational skills at each grade level and draws upon over thirty years of scientific research that demonstrates both its versatility to provide accurate prediction of reading achievement as well as its sensitivity to growth. (para. 1)

The qualitative component of the study was interviews of teachers at the district at the kindergarten, first-grade, and second-grade levels. From the pool of 15 teachers, 10 were selected to participate in the interviews. The counselor assigned each teacher a number and used a random number generator to determine which 10 teachers would be interviewed. All 10 selections volunteered to participate in the study.

Analysis of Qualitative Data

There were two sets of interview questions. One set of questions was for kindergarten teachers. The role of each educator who participated in the interview process is represented in Table 1.

Table 1

Total Number of Teacher Interview Participants

Total Number of Classroom Teachers K-2	Total Number of Teachers Randomly Selected	Kindergarten Teacher Participants	First- & Second-Grade Teacher Participants
15	10	3	7

Note. Data provided by participating school district.

The interview questions and responses from the first- and second-grade teacher interviews are listed, followed by the kindergarten teacher interview data.

Interview question one for first- and second-grade teachers. Students come to kindergarten from a variety of education backgrounds: within the school district, private preschools, Head Start, and no preschool at all. How do your students perform academically?

When asked to describe the academic performance of their students, first- and second-grade teachers consistently reported they begin the year with a wide variety of ability levels. Five of the seven teachers who responded to this question commented on the mixture of high, medium, and low academic levels of students in their classrooms. A couple of specific areas mentioned included differences in sight word knowledge, fine motor skills, and phonics skills.

One teacher specifically used Scholastic Reading Inventory (SRI) scores to illustrate the range of students entering her classroom. She said scores of students entering her class ranged from zero to 300. In first grade, a student with an SRI score of zero is considered below grade level (Cobb County School District, 2015). This is also true in second grade (Cobb County School District, 2015). An SRI score of 300 is considered above grade level for a first-grade student and on grade level for a second-grade student (Cobb County School District, 2015).

Another teacher commented she did not see a large academic difference between students who have been through a preschool program and those who have not. This participant said, “I think those that have been through preschool or Head Start programs have procedures down pat.” She went on to comment, “Preschool students are ready to learn because they have other things down like procedures.” She also said that in her

opinion the academic difference comes from the amount of work parents do at home with their children.

A different participant had an alternate view of students and preschool; she could tell which students had participated in which program based on their classroom performance. She said, "You can tell which ones have been in Head Start, as they usually have less alphabet knowledge, less fine motor skills." This teacher did not fault the Head Start program itself for this difference. Instead, she believed it was a lack of parent work at home with those students who go through the Head Start program combined with government regulations on what is allowed at Head Start. She also commented on students who attend private preschools, "Sometimes private preschool kids have good memorization without knowledge." The example offered by this teacher was students who could count really high but did not have number sense.

Another common theme in interview responses was the difference support at home makes in student growth. One respondent said, "Most kids will grow academically, but how much they grow depends on the support at home." According to respondents, parents have a big impact on academic gains at school based on how much they work with their children at home.

Interview question two for first- and second-grade teachers. How would you describe your students socially?

Respondents were fairly consistent in their answers to this question. Five of the seven participants had a positive comment regarding social interaction among students. Two participants commented students progress socially throughout the year. One teacher

said, “At first students are shy with new people and new routines to learn, but by the end of the year they are extremely social.”

There were specific social issues noted by all participants. These issues included conflict resolution, wanting to be first, learning how to take turns, separation anxiety, learning how to make friends, learning how to get someone’s attention, and basic table manners. One teacher noted using the district’s character education program in her classroom was helpful. She reported, “We work on empathy. We also work on resolving conflict so there is less tattling.”

Another teacher noted the social issues seen in her grade level are not out of the ordinary. This teacher stated, “They are typical kids. They fuss with each other.” She went on to say she did not see advancement in social behavior due to preschool or kindergarten; she believed social behaviors have more to do with family dynamics at home. Another teacher agreed social behavior in her classroom is varied, and students’ behaviors have a lot to do with what students are exposed to at home. A third participant felt some students are just more mature than others.

Interview question three for first- and second-grade teachers. How would you describe the emotional development of your students?

Life at home was a common theme in responses to this question from participants. Teachers related home life has a great emotional impact on students at school. At the time of this study, the participating school district had a free and reduced price meal rate of over 70%, so poverty is not uncommon to students. Teachers recognized the impact poverty has on students. Five of the seven participants commented on students’ home

lives relating to emotional development. One respondent commented on changes she has seen in students in her classroom:

> [Emotional development] . . . depends a lot on what is going on at home. Parents separating, jail, issues with older siblings. I see changes in students. They act out depending on what is going on at home. They have trouble dealing with the unknown.

Another participant maintained most students are average in terms of emotional development, but there are students who have to deal with abuse and neglect issues. A third teacher commented she has had students with emotional issues; each situation is different, but many have baggage they have to carry and overcome.

One teacher noted an increase in emotional breakdowns within her classroom by students. She stated, "Some kids cannot deal with the daily flow of life. They have meltdowns over minor things." She elaborated on what she believed to be the cause of this increase in emotional behavior in students, "It [emotional behavior] is on the rise because students do not feel secure at home, so they do not feel secure in other environments." A second teacher echoed these sentiments, stating she had some criers at the beginning of the year who have not been taught how to handle change.

One teacher did comment on preschool and emotional development. She believed attending preschool helps students gain an understanding of the concept of school, so that emotionally, it is not such a big adjustment for them when it is time to start going to school. She also commented, "Kids who go to the preschool within the school district come in ahead of Head Start kids."

Interview question four for first- and second-grade teachers. What are your perceptions regarding participation in the Missouri Preschool Program for students in your grade level?

Six of the seven participants had positive comments regarding students participating in the MPP. One respondent noted students attending preschool has become necessary for them to be successful. She commented, "Students who do not go to preschool start out behind."

Multiple teachers commented on preschool helping students become ready to learn once they enter the elementary school. One teacher noted, "I think it really helps them with the structure and routine of school." Another participant responded, "I think they have a better grasp on working as a class. They were prepared for kindergarten, which means they learned more in kindergarten, so they were better prepared for first grade." A third teacher echoed the importance of preschool with the way kindergarten has evolved, "I think with the expectations of students in kindergarten, a good preschool program is necessary so that it is not such a struggle once they are in school."

Most respondents saw multiple benefits to the MPP. One teacher pointed out, "They are more socially, emotionally, and academically ready for school." Three participants thought they could pick out students in their classrooms who had gone through the program without looking at the files of the students. Also, academic benefits of the MPP were recognized by teachers. One participant said, "Students learning to write, learning their letter sounds, and even starting to read in preschool gives them an advantage." A second teacher commented, "I think our MPP students are ahead of

students from Head Start and those that stayed at home. There is more creativity, they are more willing to try new things, use manipulatives, and follow directions." She attributed these positive attributes to the curriculum used at the preschool, "Project Construct is good for developing thinking skills."

Teachers recognized benefits to the MPP beyond academics. Two teachers noted the MPP prepares parents just as much as it prepares students. One teacher commented, "Parents who go through MPP are more involved in our classroom, because they were involved when their child was in preschool." The second teacher commented parent involvement gives students a strong foundation. Socialization was also recognized as being an important aspect of the MPP. One participant asserted, "It is good for social skills. Students learn how to share and take turns."

There were concerns noted about the MPP and preschools in general. One teacher thought preschool was more a benefit to working parents. She was concerned children would burnout on school due to entering at such a young age. Another participant was not sure preschool impacted success at her grade level.

Interview question one for kindergarten teachers. How long have you been teaching kindergarten with this district? What prior teaching experiences do you have, if any?

Kindergarten teaching experience ranged from three to eight years. Two participants had previously taught at different districts. All three respondents had previously taught different grade levels at different districts. Two of the participants had previously taught special education.

Interview question two for kindergarten teachers. Students come to kindergarten from a variety of education backgrounds: within the school district, private preschools, Head Start, and no preschool at all. What type of differences do you notice in the transition process for these different groups of students?

All participants recognized benefits to students of attending a preschool program. The benefits listed by teachers were numerous and included socialization, being school-ready, increased motor control, and academic benefits. These advantages were not necessarily limited to one program over another, according to the respondents.

One teacher did note different programs have different points of emphasis. She noted, "Kids from MPP have an academic advantage." She went on to elaborate, "They can write their own name, they know their letters, and they know some letter sounds." She pointed out the gap between a student who has gone through the MPP and one who has stayed at home prior to kindergarten entry is particularly large at the start of kindergarten.

Other observations by participants included the social aspect of school. According to all participants, there is a social advantage to attending a preschool program for students. One respondent said, "It is noticeable which students have been exposed to another classroom environment prior to kindergarten, and the number one thing I notice is how students engage with each other." Another respondent noted the deficiencies in students who have not been to a preschool program upon kindergarten entry in comparison to their peers who have attended a preschool program. This teacher commented, "If they have been nowhere at all, they struggle to socialize. They also

struggle with sharing and taking turns." A third teacher pointed out the social issues that result from not attending a preschool program go beyond peer interaction. She believed many students who enter kindergarten straight from home struggle with separation anxiety.

School readiness benefits were mentioned by two of the three kindergarten participants. Each claimed those students who have attended preschool before entering kindergarten are able to follow rules and two-step directions. Each also mentioned students were already conditioned to activities such as sitting on a rug and listening to a story. One of the respondents mentioned preschool helps students have a better grasp of time. All three teachers mentioned the benefits of preschool in relation to fine motor skills such as holding a pencil, using scissors, and gluing.

Interview question three for kindergarten teachers. What effect do you think prior familiarity with the school building has on the transition of students?

At the participating district, MPP students share facilities with other elementary students. They use the same cafeteria for lunch and the same nurse. These students also attend the same after-school care program as kindergarten through fourth-grade students. The responding teachers recognized benefits to preschool students of using facilities in the building where they will one day attend kindergarten. One teacher noted when students have already been in the building, they recognize landmarks, and this gives them a sense of comfort during a time of transition. This teacher stated, "I think they feel safe when they have been in the building before. They know where they are going and where they are coming back to."

Another teacher noted when students attend the MPP program, they become familiar with many of the people they will see throughout their elementary experience such as the cafeteria staff, the nurse, the principal, the custodians, and the office staff. She believed this added to the sense of safety for students. One participant mentioned many of the MPP students attend the after-school care program, and this is beneficial once they enter kindergarten. This teacher claimed, "They seem more comfortable. They know where the bathrooms are, they know how to carry a lunch tray, and they know where the nurse's office is." Overall, familiarity with the building softens the transition to kindergarten for students.

Interview question four for kindergarten teachers. What characteristics of a student coming into kindergarten seem to lend to a positive kindergarten experience?

The participants provided a range of responses to what best equips a student for kindergarten. One felt school readiness has a large impact on a positive kindergarten experience. Another cited characteristics more closely aligned to emotional development as key to success in kindergarten. A third teacher cited parent involvement as the key to a successful kindergarten year.

In terms of school readiness, one teacher listed several characteristics she believed were important to success in kindergarten. These characteristics included social skills such as participating in a group and getting along with others. Other skills she listed were more likely to appear in students with prior school experience, such as exposure to writing, good listening skills, motor skills, and being able to follow directions.

Another participant cited emotional development as the key to a positive kindergarten experience. Students who are well-developed emotionally do not exhibit signs of separation anxiety. The teacher recognized the value in students meeting their teachers prior to the first day of school so the students are comfortable in the classroom. This teacher expressed, "It also helps if they have a friend already in the class for support."

The third respondent cited home life as a key for kindergarten success and expressed, "The more invested the parent, the better the experience will be for the child." She attributed this to parents working with their children at home each night. Moreover, she asserted parents who think school is important generally have children who think school is important. Therefore, the child has an understanding of the expectations of learning.

Interview question five for kindergarten teachers. What differences, if any, do you notice in the parental involvement of families of students who attended preschool at this district versus the involvement of families of students who did not attend preschool at this district?

The MPP at the participating district has a monthly parent involvement activity. All three participants recognized the impact this has on parents once their child moves into the elementary setting. According to the teachers, there is a carryover effect. One participant stated, "Our preschool parents have parent involvement nights each month, so they come expecting that." Another noted she can identify parents in the entire grade level who are interested in their child's education. She attributed this to participation in

preschool and stated, “Those who did not attend preschool are not as supportive. I think preschool boosts parent involvement.”

One participant commented on the communal effect the MPP experience has on parents by saying, “Parents of students who have already been here, know each other and they bond.” She went on to explain this helps parents not to hesitate about being involved in school activities, and that overall, MPP parents are more involved. One of the respondents did note MPP parents being the most involved is a generality and not necessarily the rule. This teacher pointed out, “I have had parents who were very involved that did not attend our preschool program, but their child had attended another preschool program.”

Overall, the teachers maintained kindergarten has more parent involvement than the other elementary grade levels. One participant explained, “I can tell when parents are interested in their child’s education. They are involved and trying to get them exposed.”

Interview question six for kindergarten teachers. When you are conducting beginning of the year transition activities with students, what differences do you notice between students?

All three participants recognized the difference between students who had been in a school setting before and those who had not. Teachers credited “exposure” to easing the transition to kindergarten for some students. There are issues for students who have not been in a school setting prior to kindergarten. One participant stated, “The students who have not attended any preschool lack structure. It is an adjustment for them to follow a routine.” She attributed this adjustment period to a lack of exposure to a school

environment. Another teacher agreed it takes training for students who do not have exposure, “You can tell the kids who have been asked to do things before like use glue, scissors, or walk in a line.”

Another respondent commented on the social aspect for those who have not been in preschool. She said, “Some students have no concept of listening, and it is a struggle for them all year.” Additionally, she felt some students can be worked with, and over time, they will learn.

Interview question seven for kindergarten teachers. What differences do you notice in behavior and attendance in students in your class?

Two of the three participants did not see a connection between attendance and behavior for students who have attended preschool. One of the two attributed behavior as being more related to family background than preschool participation. This same participant did say she could see where attendance in kindergarten could be boosted by attending preschool. The teacher stated, “They do gain immunity from germ exposure in preschool.”

The third participant believed there were benefits to attendance and behavior to be gained from attending preschool:

> I think preschool helps them understand how important school is as well as how important it is to come to school and be exposed. I think it helps kids want to learn and broaden their expectations of what learning can be.

Specifically, this teacher contended prior social experience helps students get along with their peers.

Quantitative Data Analysis

The quantitative data for this study were collected from the district's Aimsweb assessments. Aimsweb assessments are conducted at the kindergarten, first-grade, and second-grade levels at the district. The district uses Aimsweb to assess students in the area of communication arts. Five cohorts of students have completed all three grade levels since the district started using Aimsweb. The first cohort completed the second grade during the 2011-2012 school year. The fifth cohort completed the second grade during the 2015-2016 school year.

At the participating district, the reading coach is in charge of compiling Aimsweb data after classroom teachers administer the assessments to students. For this study, the reading coach was given MPP rosters for the cohorts needed. Then, the reading coach collected and coded the Aimsweb data for the kindergarten, first-grade, and second-grade students who participated in the district's MPP program.

For the peer group data, the reading coach removed students who participated in the district's Title I preschool program, since the Title I program uses the same curriculum as the MPP. Then, the reading coach removed all students from the peer pool who did not complete kindergarten, first grade, and second grade at the district. The remaining students were assigned a number. A random number generator was used to select an equal number of students for the peer group in each cohort as compared to the MPP group.

The Aimsweb data (mean, standard deviation, and median) in Table 2 represent Cohort 1. The mean, standard deviation, and median were calculated using Microsoft

Excel 2010. Cohort 1 completed second grade during the 2011-2012 school year. There were 10 students in the MPP group as well as 10 students in the peer group.

In examining the data from Cohort 1, the MPP group had a larger mean during the kindergarten and second-grade years (see Table 2). The peer group had a larger mean during the first-grade year. During the kindergarten year of Cohort 1, the mean of the MPP group was greater (M = 61.30, SD = 15.31) than the mean of the peer group (M = 57.90, SD = 14.90).

Shown in Table 3 are the variance for the kindergarten peer group, the kindergarten MPP group, the degrees of freedom, the t Stat, the p Stat, and the t Critical of a two-tailed test. An independent samples t-test was applied to determine the significant difference between the two means ($t(18) = -0.50$). The mean of the MPP group was not significantly different ($p > .05$) from the mean of the peer group. Therefore, the null hypothesis was not rejected.

During the first-grade year of Cohort 1, the mean of the MPP group was less (M = 263.00, SD = 166.45) than the mean of the peer group (M = 276.50, SD = 130.02). The mean of the MPP group was not significantly different ($p > .05$) from the mean of the peer group ($t(18) = 0.20$). Therefore, the null hypothesis was not rejected.

During the second-grade year of Cohort 1, the mean of the MPP group was greater (M = 619.00, SD = 167.10) than the mean of the peer group (M = 478.30, SD = 218.84). The mean of the MPP group was not significantly different ($p > .05$) from the mean of the peer group ($t(18) = -1.64$). Therefore, the null hypothesis was not rejected.

Table 2

Cohort 1 Aimsweb Data

Group	Grade/ Type	*n*	*M*	*SD*	*Mdn*
MPP	K Letter Sounds	10	61.30	15.31	59.00
Peers	K Letter Sounds	10	57.90	14.90	57.50
MPP	1st Grade CBM	10	263.00	166.45	312.50
Peers	1st Grade CBM	10	276.50	130.02	267.50
MPP	2nd Grade CBM	10	619.00	167.10	662.50
Peers	2nd Grade CBM	10	478.30	218.84	537.50

Note. *n* = Number of participants, *M* = Mean, *SD* = Standard Deviation, *Mdn* = Median.

Table 3

Cohort 1 Aimsweb Data Summary from Independent Samples t-Test

Grade Level	V_1	V_2	*df*	*t*	*P*	*tC*
Kindergarten	221.88	234.46	18	-0.50	0.62	2.1
1st Grade	16905.83	27706.67	18	0.20	0.84	2.1
2nd Grade	45725.57	27921.11	18	-1.64	0.12	2.1

Note. V_1 = Variance for variable 1 (non-MPP group), V_2 = Variance for variable 2 (MPP group), *df* = degrees of freedom, *t* = *t* Stat, *P* = *P*(*T*<=*t*) two-tail, *tC* = *t* Critical.

The Aimsweb data (mean, standard deviation, and median) in Table 4 represent Cohort 2. The mean, standard deviation, and median were calculated using Microsoft Excel 2010. Cohort 2 completed second grade during the 2012-2013 school year. There were 14 students in the MPP group as well as 14 students in the peer group.

In examining the data from Cohort 2, the peer group had a larger mean during the kindergarten, first-grade, and second-grade years (see Table 4). During the kindergarten year of Cohort 2, the mean of the peer group was greater (M = 55.71, SD = 17.37) than the mean of the MPP group (M = 51.07, SD = 15.91).

Shown in Table 5 are the variance for the kindergarten peer group, the kindergarten MPP group, the degrees of freedom, the t Stat, the p Stat, and the t Critical of a two-tailed test. An independent samples t-test was applied to determine the significant difference between the two means ($t(26) = 0.74$). The mean of the MPP group was not significantly different ($p > .05$) from the mean of the peer group. Therefore, the null hypothesis was not rejected.

During the first-grade year of Cohort 2, the mean of the MPP group was less (M = 190.71, SD = 167.58) than the mean of the peer group (M = 236.79, SD = 182.69). The mean of the MPP group was not significantly different ($p > .05$) from the mean of the peer group ($t(26) = 0.70$). Therefore, the null hypothesis was not rejected.

During the second-grade year of Cohort 2, the mean of the MPP group was less (M = 520.71, SD = 234.74) than the mean of the peer group (M = 574.64, SD = 219.18). The mean of the MPP group was not significantly different ($p > .05$) from the mean of the peer group ($t(26) = 0.63$). Therefore, the null hypothesis was not rejected.

Table 4

Cohort 2 Aimsweb Data

Group	Grade and Type	*n*	*M*	*SD*	*Mdn*
MPP	K Letter Sounds	14	51.07	15.91	50.50
Peers	K Letter Sounds	14	55.71	17.37	55
MPP	1st Grade CBM	14	190.71	167.58	177.50
Peers	1st Grade CBM	14	236.79	182.69	205
MPP	2nd Grade CBM	14	520.71	234.74	530
Peers	2nd Grade CBM	14	574.64	219.18	590

Note. *n* = Number of participants, *M* = Mean, *SD* = Standard Deviation, *Mdn* = Median.

Table 5

Cohort 2 Aimsweb Data Summary from Independent Samples t-Test

Grade Level	V_1	V_2	*df*	*t*	*P*	*tC*
Kindergarten	301.76	252.99	26	0.74	0.47	2.06
1st Grade	33375.41	28084.07	26	0.70	0.49	2.06
2nd Grade	48040.25	55103.30	26	0.63	0.54	2.06

Note. V_1 = Variance for variable 1 (non-MPP group), V_2 = Variance for variable 2 (MPP group), *df* = degrees of freedom, *t* = *t* Stat, *P* = *P*(*T* < = *t*) two-tail, *tC* = *t* Critical.

The Aimsweb data (mean, standard deviation, and median) in Table 6 represent Cohort 3. The mean, standard deviation, and median were calculated using Microsoft Excel 2010. Cohort 3 completed second grade during the 2013-2014 school year. There were 15 students in the MPP group as well as 15 students in the peer group.

In examining the data from Cohort 3, the MPP group had a larger mean during the kindergarten, first-grade, and second-grade years (see Table 6). During the kindergarten

year of Cohort 3, the mean of the MPP group was greater (M = 61.20, SD = 12.83) than the mean of the peer group (M = 55.47, SD = 16.52).

Shown in Table 7 are the variance for the kindergarten peer group, the kindergarten MPP group, the degrees of freedom, the t Stat, the p Stat, and the t Critical of a two-tailed test. An independent samples t-test was applied to determine the significant difference between the two means ($t(28) = -1.06$). The mean of the MPP group was not significantly different ($p > .05$) from the mean of the peer group. Therefore, the null hypothesis was not rejected.

During the first-grade year of Cohort 3, the mean of the MPP group was greater (M = 305.00, SD = 176.69) than the mean of the peer group (M = 231.67, SD = 197.73). The mean of the MPP group was not significantly different ($p > .05$) from the mean of the peer group ($t(28) = -1.07$). Therefore, the null hypothesis was not rejected.

During the second-grade year of Cohort 3, the mean of the MPP group was greater (M = 640.33, SD = 112.45) than the mean of the peer group (M = 532.67, SD = 250.23). The mean of the MPP group was not significantly different ($p > .05$) from the mean of the peer group ($t(28) = -1.53$). Therefore, the null hypothesis was not rejected.

Table 6

Cohort 3 Aimsweb Data

Group	Grade and Type	*n*	*M*	*SD*	*Mdn*
MPP	K Letter Sounds	15	61.20	12.83	62
Peers	K Letter Sounds	15	55.47	16.52	56
MPP	1st Grade CBM	15	305.00	176.69	270
Peers	1st Grade CBM	15	231.67	197.73	245
MPP	2nd Grade CBM	15	640.33	112.45	595
Peers	2nd Grade CBM	15	532.67	250.23	510

Note. *n* = Number of participants, *M* = Mean, *SD* = Standard Deviation, *Mdn* = Median.

Table 7

Cohort 3 Aimsweb Data Summary from Independent Samples t-Test

Grade Level	V_1	V_2	*df*	*t*	*P*	*tC*
Kindergarten	272.98	164.60	28	-1.06	0.30	2.05
1st Grade	39095.24	31217.86	28	-1.07	0.30	2.05
2nd Grade	62117.38	12644.52	28	-1.53	0.14	2.05

Note. V_1 = Variance for variable 1 (non-MPP group), V_2 = Variance for variable 2 (MPP group), *df* = degrees of freedom, *t* = *t* Stat, *P* = *P*(*T* < = *t*) two-tail, *tC* = *t* Critical.

The Aimsweb data (mean, standard deviation, and median) in Table 8 represent Cohort 4. The mean, standard deviation, and median were calculated using Microsoft Excel 2010. Cohort 4 completed second grade during the 2014-2015 school year. There were 15 students in the MPP group as well as 15 students in the peer group.

In examining the data from Cohort 4, the peer group had a larger mean during the kindergarten, first-grade, and second-grade years (see Table 8). During the kindergarten

year of Cohort 4, the mean of the MPP group was less (M = 50.47, SD = 11.37) than the mean of the peer group (M = 50.73, SD = 10.12).

Shown in Table 9 are the variance for the kindergarten peer group, the kindergarten MPP group, the degrees of freedom, the t Stat, the p Stat, and the t Critical of a two-tailed test. An independent samples t-test was applied to determine the significant difference between the two means ($t(28) = 0.07$). The mean of the MPP group was not significantly different ($p > .05$) from the mean of the peer group. Therefore, the null hypothesis was not rejected.

During the first-grade year of Cohort 4, the mean of the MPP group was less (M = 98.67, SD = 112.86) than the mean of the peer group (M =129.00, SD = 111.29). The mean of the MPP group was not significantly different ($p > .05$) from the mean of the peer group ($t(28) = 0.74$). Therefore, the null hypothesis was not rejected.

During the second-grade year of Cohort 4, the mean of the MPP group was less (M = 442.67, SD = 146.49) than the mean of the peer group (M = 451.67, SD = 93.55). The mean of the MPP group was not significantly different ($p > .05$) from the mean of the peer group ($t(28) = 0.20$). Therefore, the null hypothesis was not rejected.

Table 8

Cohort 4 Aimsweb Data

Group	Grade and Type	*n*	*M*	*SD*	*Mdn*
MPP	K Letter Sounds	15	50.47	11.37	45
Peers	K Letter Sounds	15	50.73	10.12	48
MPP	1st Grade CBM	15	98.67	112.86	50
Peers	1st Grade CBM	15	129.00	111.29	75
MPP	2nd Grade CBM	15	442.67	146.49	420
Peers	2nd Grade CBM	15	451.67	93.55	420

Note. *n* = Number of participants, *M* = Mean, *SD* = Standard Deviation, *Mdn* = Median.

Table 9

Cohort 4 Aimsweb Data Summary from Independent Samples t-Test

Grade Level	V_1	V_2	*df*	*t*	*P*	*tC*
Kindergarten	102.35	129.27	28	0.07	0.95	2.05
1st Grade	12382.86	12737.38	28	0.74	0.45	2.05
2nd Grade	8752.38	21460.24	28	0.20	0.84	2.05

Note. V_1 = Variance for variable 1 (non-MPP group), V_2 = Variance for variable 2 (MPP group), *df* = degrees of freedom, *t* = *t* Stat, *P* = *P*(*T* <= *t*) two-tail, *tC* = *t* Critical.

The Aimsweb data (mean, standard deviation, and median) in Table 10 represent Cohort 5. The mean, standard deviation, and median were calculated using Microsoft Excel 2010. Cohort 5 completed second grade during the 2015-2016 school year. There were 15 students in the MPP group as well as 15 students in the peer group.

In examining the data from Cohort 5, the peer group had a larger mean during the kindergarten, first-grade, and second-grade years (see Table 10). During the kindergarten

year of Cohort 5, the mean of the MPP group was less (M = 52.00, SD = 12.62) than the mean of the peer group (M = 52.67, SD = 15.33).

Shown in Table 11 are the variance for the kindergarten peer group, the kindergarten MPP group, the degrees of freedom, the t Stat, the p Stat, and the t Critical of a two-tailed test. An independent samples t-test was applied to determine the significant difference between the two means ($t(27) = 0.13$). The mean of the MPP group was not significantly different ($p > .05$) from the mean of the peer group. Therefore, the null hypothesis was not rejected.

During the first-grade year of Cohort 5, the mean of the MPP group was less (M = 186.00, SD = 185.42) than the mean of the peer group (M = 210.33, SD = 192.27). The mean of the MPP group was not significantly different ($p > .05$) from the mean of the peer group ($t(28) = 0.35$). Therefore, the null hypothesis was not rejected.

During the second-grade year of Cohort 5, the mean of the MPP group was less (M = 533.33, SD = 203.83) than the mean of the peer group (M = 564.33, SD = 223.25). The mean of the MPP group was not significantly different ($p > .05$) from the mean of the peer group ($t(28) = 0.40$). Therefore, the null hypothesis was not rejected.

Table 10

Cohort 5 Aimsweb Data

Group	Grade and Type	*n*	*M*	*SD*	*Mdn*
MPP	K Letter Sounds	15	52.00	12.62	46
Peers	K Letter Sounds	15	52.67	15.33	48
MPP	1st Grade CBM	15	186.00	185.42	115
Peers	1st Grade CBM	15	210.33	192.27	150
MPP	2nd Grade CBM	15	533.33	203.83	615
Peers	2nd Grade CBM	15	564.33	223.25	530

Note. *n* = Number of participants, *M* = Mean, *SD* = Standard Deviation, *Mdn* = Median.

Table 11

Cohort 5 Aimsweb Data Summary from Independent Samples t-Test

Grade Level	V_1	V_2	*df*	*t*	*P*	*tC*
Kindergarten	235.10	159.30	27	0.13	0.90	2.05
1st Grade	36969.52	34379.29	28	0.35	0.73	2.05
2nd Grade	49838.81	41545.24	28	0.40	0.69	2.05

Note. V_1 = Variance for variable 1 (non-MPP group), V_2 = Variance for variable 2 (MPP group), *df* = degrees of freedom, *t* = *t* Stat, *P* = *P*(*T*<= *t*) two-tail, *tC* = *t* Critical.

The Aimsweb data (mean, standard deviation, and median) in Table 12 represent the combination of all cohorts. The mean, standard deviation, and median were calculated using Microsoft Excel 2010. The students represented in the combination of all cohorts completed second grade between the 2011-2012 and 2015-2016 school years. There were 69 students in the MPP group as well as 69 students in the peer group.

In examining the data from the combination of all cohorts, the MPP group had a larger mean during the kindergarten and second-grade years (see Table 12). The peer

group had a larger mean during the first-grade year. During the kindergarten year of the combination of all cohorts, the mean of the MPP group was greater (M = 54.83, SD = 14.02) than the mean of the peer group (M = 54.23, SD = 14.79).

Shown in Table 13 are the variance for the kindergarten peer group, the kindergarten MPP group, the degrees of freedom, the t Stat, the p Stat, and the t Critical of a two-tailed test. An independent samples t-test was applied to determine the significant difference between the two means ($t(136) = -0.24$). The mean of the MPP group was not significantly different ($p > .05$) from the mean of the peer group. Therefore, the null hypothesis was not rejected.

During the first-grade year of the combination of all cohorts, the mean of the MPP group was less (M = 205, SD = 174.59) than the mean of the peer group (M = 212.25, SD = 170.80). The mean of the MPP group was not significantly different ($p > .05$) from the mean of the peer group ($t(136) = 0.24$). Therefore, the null hypothesis was not rejected.

During the second-grade year of the combination of all cohorts, the mean of the MPP group was greater (M = 546.74, SD = 187.28) than the mean of the peer group (M = 522.58, SD = 206.04). The mean of the MPP group was not significantly different ($p > .05$) from the mean of the peer group ($t(136) = -0.72$). Therefore, the null hypothesis was not rejected.

Table 12

All Cohorts Combined Aimsweb Data

Group	Grade and Type	*n*	*M*	*SD*	*Mdn*
MPP	K Letter Sounds	69	54.83	14.02	56
Peers	K Letter Sounds	69	54.23	14.79	53
MPP	1st Grade CBM	69	205	174.59	175
Peers	1st Grade CBM	69	212.25	170.80	185
MPP	2nd Grade CBM	69	546.74	187.28	570
Peers	2nd Grade CBM	69	522.58	206.04	510

Note. *n* = Number of participants, *M* = Mean, *SD* = Standard Deviation, *Mdn* = Median.

Table 13

Combined Cohorts Aimsweb Data Summary from Independent Samples t-Test

Grade Level	V_1	V_2	*df*	*t*	*P*	*tC*
Kindergarten	218.74	196.68	136	-0.24	0.81	1.98
1st Grade	29171.72	30480.15	136	0.24	0.81	1.98
2nd Grade	42450.51	35073.4	136	-0.72	0.47	1.98

Note. V_1 = Variance for variable 1 (non-MPP group), V_2 = Variance for variable 2 (MPP group), *df* = degrees of freedom, *t* = *t* Stat, *P* = *P*(*T* <= *t*) two-tail, *tC* = *t* Critical.

Summary

In education nationally, there has been an increase in funding and attention to early childhood education (Ackerman & Cooley, 2012). Both the Obama administration and Missouri's state government have increased the amount of taxpayer dollars funneled to early childhood education programs (U.S. Department of Education, 2015). Part of the

reason for this shift is in an effort to close the academic achievement gap among students that appears as early as the elementary years (U.S. Department of Education, 2015).

One of these government-funded early childhood education programs is the Missouri Preschool Program. This investigation was a mixed methods case study. The quantitative piece of the study focused on Aimsweb communication arts scores at the kindergarten, first-grade, and second-grade levels.

Cohorts of students who had completed the Missouri Preschool Program and also completed kindergarten, first grade, and second grade at the same school district were compared with their peers. The students in the peer group also had completed kindergarten, first grade, and second grade in the same school district. Five cohorts in total were studied. An independent samples *t*-test was conducted for each cohort, and an independent samples *t*-test was also conducted for all cohorts combined.

The qualitative piece of the case study focused on teacher interviews. Teachers were randomly selected using a number generation website. Interviews were conducted by the school counselor of teachers who taught kindergarten, first grade, or second grade at the district being studied. There were two separate sets of interview questions. Kindergarten had a set of interview questions focused on transition to school as well as parental involvement of students. The set of questions for first-grade and second-grade teachers focused on academic performance, social interaction, and emotional development of students.

In Chapter Five, the findings of the study are discussed in relation to the research questions. Conclusions are presented for both the qualitative and quantitative portions of

the research. Limitations of the study are also reviewed within Chapter Five. In conclusion, future implications and recommendations as a result of the research are presented.

Chapter Five: Summary and Conclusions

Within Chapter Five, the results of the study are discussed as well as implications for practice and recommendations for future research. The purpose of the study was the examination of potential long-term academic benefits for students who participated in the MPP versus their peers who did not participate in the MPP. Analysis took place using data collected from the case study. The non-MPP peer group included students who attended another early childhood education program as well as students who had no prior early childhood education.

In addition, this research included a qualitative component to examine the perceptions of kindergarten, first-grade, and second-grade teachers regarding the academic performance of the MPP students in the classroom versus those who did not attend the MPP. Including this component allowed for the examination of other possible benefits of the MPP in addition to academics, such as social skills, school readiness, and emotional development. The school counselor conducted all 10 of the teacher interviews and transcribed them. The reading coach at the district pulled and coded all of the Aimsweb data.

Findings

This case study was designed using a mixed methods approach. The quantitative component included analysis of data from five cohorts of students at the selected rural school district in southwest Missouri. Each cohort was divided into two groups of students: one group of students who participated in the district's MPP and the second group of students who did not participate in the MPP. Each group within the cohort

contained an equal number of students. Also, to be part of the cohort students had to complete kindergarten, first grade, and second grade at the selected school district.

In total, data from 138 students were analyzed as part of this case study. The data focused on Aimsweb scores of students in the area of communication arts. The Aimsweb scores came from the fourth quarter of each student's kindergarten, first-grade, and second-grade years.

The scores of students in the MPP group of each cohort were examined in comparison to the scores of the peer group in the same cohort. An independent samples *t*-test was used to examine the data and to determine if there was a statistically significant difference in the scores. Also as part of the case study, the data from all MPP students in the five cohorts were combined and examined in comparison to all students in the peer groups.

The qualitative component of the case study focused on teacher interviews. The pool of potential teachers interviewed totaled 15 teachers of kindergarten through second grade. Ten teachers were selected to be interviewed by the school counselor. The counselor used an online random number generator to select which teachers would be approached about being part of the study. All 10 teachers selected opted to participate in the study.

There were two different sets of interview questions, one set of interview questions specifically for kindergarten teachers and then a second set of interview questions specifically for first- and second-grade teachers. Of the 10 participating teachers, three were kindergarten teachers and seven were first- or second-grade teachers.

The interview questions touched on a variety of topics including the academics of students, emotional development, classroom behavior, attendance, social skills, and teacher backgrounds.

It is important to develop research questions that bolster and clarify the findings of a study (Terry, 2014). The research questions that guided this study focused on the academic achievement of students who participated in the MPP in comparison to their peers at selected grade levels (kindergarten through second grade). The qualitative research questions focused on teacher perceptions regarding student participation in the MPP in relation to school readiness, academic performance, and social development. The research questions, the findings relating to those questions, and analyses are presented:

1. What difference exists, if any, between the kindergarten communication arts assessment scores of students who participated in the Missouri Preschool Program and the assessment scores of similar peers who did not participate in the Missouri Preschool Program?

The communication arts assessment used at the kindergarten level was the Aimsweb letter-sounds assessment students complete during the fourth quarter. Of the five cohorts studied, the MPP group only had a higher mean score than the peer group in two of the cohorts (Cohort 1 MPP M = 61.30, Peer M = 57.90; Cohort 3 MPP M = 61.20, Peer M = 55.47). The peer group had a higher mean score in the remaining three cohorts (Cohort 2 MPP M = 51.07, Peer M = 55.71; Cohort 4 MPP M = 50.47, Peer M = 50.73; Cohort 5 MPP M = 52.00, Peer M = 52.67).

When the scores of all five cohorts were combined, the MPP group had a higher mean score than the peer group (MPP M = 54.83, Peer M =54.23). An independent samples *t*-test was conducted for each cohort as well as the combination of all cohorts, with none of the results showing a statistically significant difference ($p > .05$) between the scores of the MPP group and the peer group. Therefore, the null hypothesis was not rejected.

2. What difference exists, if any, between the first-grade communication arts assessment scores of students who participated in the Missouri Preschool Program and the assessment scores of similar peers who did not participate in the Missouri Preschool Program?

The communication arts assessment used at the first-grade level was the Aimsweb curriculum-based measurement assessment students complete during the fourth quarter. Of the five cohorts studied, the MPP group only had a higher mean score than the peer group in one of the cohorts (Cohort 3 MPP M = 305.00, Peer M = 231.67). The peer group had a higher mean score in the remaining four cohorts (Cohort 1 MPP M = 263.00, Peer M = 276.50; Cohort 2 MPP M = 190.71, Peer M = 236.79; Cohort 4 MPP M = 98.67, Peer M = 129.00; Cohort 5 MPP M = 186.00, Peer M = 210.33).

When the first-grade scores of all five cohorts were combined, the peer group had a higher mean score than the MPP group (MPP M = 205, Peer M = 212.25). An independent samples *t*-test was conducted for each cohort as well as the combination of all cohorts, with none of the results showing a statistically significant difference ($p > .05$)

between the scores of the MPP group and the peer group. Therefore, the null hypothesis was not rejected.

3. What difference exists, if any, between the second-grade communication arts assessment scores of students who participated in the Missouri Preschool Program and the assessment scores of similar peers who did not participate in the Missouri Preschool Program?

The communication arts assessment used at the second-grade level was the Aimsweb curriculum-based measurement assessment students complete during the fourth quarter. Of the five cohorts studied, the MPP group only had a higher mean score than the peer group in two of the cohorts (Cohort 1 MPP M =619.00, Peer M = 478.30; Cohort 3 MPP M = 640.33, Peer M = 532.67). The peer group had a higher mean score in the remaining three cohorts (Cohort 2 MPP M = 520.71, Peer M = 574.64; Cohort 4 MPP M = 442.67, Peer M = 451.67; Cohort 5 MPP M = 533.33, Peer M = 564.33).

When the second-grade scores of all five cohorts were combined, the MPP group had a higher mean score than the peer group (MPP M = 546.74, Peer M = 522.58). An independent samples t-test was conducted for each cohort as well as the combination of all cohorts, with none of the results showing a statistically significant difference ($p > .05$) between the scores of the MPP group and the peer group. Therefore, the null hypothesis was not rejected.

4. What are the perceptions of kindergarten teachers regarding student participation in the Missouri Preschool Program as it pertains to school readiness, academic performance, and social and behavioral awareness?

This research question was addressed through teacher interviews. A total of 10 teacher interviews were conducted. Teachers interviewed worked at the district in grades kindergarten through second. Of those interviewed, three were kindergarten teachers and seven were first- or second-grade teachers. The questions as well as the summary and analysis of each are included.

Interview question one for first- and second-grade teachers. Students come to kindergarten from a variety of education backgrounds: within the school district, private preschools, Head Start, and no preschool at all. How do your students perform academically?

Five of the seven teachers (71%) who responded to this question commented on the mixture of high, medium, and low academic levels of students in their classrooms. Two teachers (29%) specifically listed benefits provided through attending an early childhood program. These benefits include school readiness, motor skills, and alphabet knowledge. Three of the respondents (43%) also mentioned the positive impact of families who work with children at home on academic skills.

Interview question two for first- and second-grade teachers. How would you describe your students socially?

Five of the seven participants (71%) had a positive comment regarding social interaction among students. Five of the seven who responded to this question (71%) also noted at least one, if not multiple, social skills they work with their students on throughout the year. These skills include conflict resolution, wanting to be first, learning how to take turns, separation anxiety, learning how to make friends, learning how to get

someone's attention, and basic table manners. Three respondents (43%) made the connection between social skills at school and parent involvement at home.

Interview question three for first- and second-grade teachers. How would you describe the emotional development of your students?

Life at home was a common theme in responses to this question from participants. Five of the seven participants (71%) commented on students' home lives relating to emotional development. Only one respondent (14%) commented on the positive impact attending preschool has on the emotional development of children. The other six teachers did not mention preschool in relation to this question. The overriding theme seemed to focus on the life events young children are unfairly put through and forced to overcome in order to succeed.

Interview question four for first- and second-grade teachers. What are your perceptions regarding participation in the Missouri Preschool Program for students in your grade level?

Six of the seven participants (86%) had positive comments regarding students participating in the Missouri Preschool Program. Six of the seven teachers (86%) commented on preschool helping students become ready to learn once they enter the elementary school. Three teachers (43%) commented on the social benefits of attending a preschool program. Two teachers (29%) discussed the parent involvement MPP requires and how that carries over once students enter the elementary building. One respondent (14%) did say she was not sure that where students attend prior to elementary has an impact on being ready for her grade level.

Interview question one for kindergarten teachers. How long have you been teaching kindergarten with this district? What prior teaching experiences do you have if any?

Two of the three respondents (66%) had previously taught at a different district. All three teachers (100%) had taught a different grade level prior to teaching kindergarten. Two of the three teachers interviewed (66%) had experience as a special education teacher. Time with the district varied for the teachers ranging from three to eight years.

Interview question two for kindergarten teachers. Students come to kindergarten from a variety of education backgrounds: within the school district, private preschools, Head Start, and no preschool at all. What type of differences do you notice in the transition process for these different groups of students?

All three respondents (100%) recognized benefits to students of attending a preschool program. The benefits listed by teachers were numerous and included socialization, being school-ready, increased motor control, and academic benefits. These advantages were not necessarily limited to one program over another according to the respondents.

School readiness benefits were mentioned by two of the three kindergarten participants (66%). Both claimed those students who have attended preschool before entering kindergarten are able to follow rules and two-step directions. Each also mentioned students were already conditioned to activities such as sitting on a rug and listening to a story. All three teachers (100%) mentioned the benefits of preschool in

relation to fine motor skills such as holding a pencil, using scissors, and gluing. Only one of the respondents pointed out benefits of the MPP over other early childhood education options.

Interview question three for kindergarten teachers. What effect do you think prior familiarity with the school building has on the transition of students?

Two of the three respondents (66%) noted benefits to students being familiar with the school building prior to entering kindergarten. Teachers noted students who have been through the MPP seem more comfortable and feel safer, as they have been in the building on a daily basis prior to kindergarten. The MPP students know the location of the bathrooms, nurse's office, principal's office, and the procedures when in the cafeteria due to this prior exposure.

Interview question four for kindergarten teachers. What characteristics of a student coming into kindergarten seem to lend to a positive kindergarten experience?

The participants did not have a common answer for this question. One teacher felt school readiness has a large impact on a positive kindergarten experience. Another respondent cited characteristics more closely aligned to emotional development as key to success in kindergarten for students. A third teacher cited parent involvement as the key to a successful kindergarten year.

Interview question five for kindergarten teachers. What differences, if any, do you notice in the parental involvement of families of students who attended preschool at this district versus the involvement of families of students who did not attend preschool at this district?

The MPP at the participating district has a monthly parent involvement activity. All three participants (100%) recognized the impact this has on parents once their children move into the elementary setting. According to the teachers, there is a carryover effect. All teachers saw the parent involvement from MPP as having a positive impact on students once they enter kindergarten.

Interview question six for kindergarten teachers. When you are conducting beginning-of-the-year transition activities with students, what differences do you notice among students?

All three participants (100%) recognized the difference between students who had been in a school setting before and those who had not. Teachers credited "exposure" to easing the transition to kindergarten for some students. There are issues for students who have not been in a school setting prior to kindergarten. The issues mentioned included not being able to follow directions, difficulty following a routine/schedule, and lack of fine motor skills.

Interview question seven for kindergarten teachers. What differences do you notice in behavior and attendance in students in your class?

Two of the three participants (66%) did not see a connection between attendance and behavior for students who have attended preschool. The third participant believed there were benefits to attendance and behavior to be gained from attending preschool. She believed it helps students and families understand the importance of learning.

Limitations of Findings

The limitations of the research involved the sample of the study as well as the assessment tool chosen for the research. The limitations included the following:

1. The research was conducted only at one school district.
2. Aimsweb data were only available dating back to 2009; during that time five cohorts of students had completed kindergarten through second grade at the district.
3. Only 15 teachers were available to interview in grades kindergarten through second at the district being studied.
4. The district only conducts communication arts assessments using Aimsweb, not other academic areas such as mathematics.
5. Records are not kept by the district regarding which early childhood program students have attended, if any.

Conclusions

No statistically significant differences were found in the communication arts scores between students who had participated in the MPP and their peers who had not participated in the program. This was true across five different cohorts, each of whom were examined at three grade levels. This remained true when the data from the cohorts were combined and examined through yet another independent samples *t*-test. The peer group actually had a higher mean score than the MPP group in 10 of the 15 grade level comparisons.

The data suggested the sustained academic benefits of students participating in the MPP are not evident, at least in the area of communication arts. Other areas such as mathematics were not examined. Also, the peer group may have included students who attended another early childhood education program. This is important to note, as the scores of MPP students were not solely being compared against students without education experience prior to kindergarten entry.

The teacher interviews expanded the potential benefits of students attending an early childhood education program beyond just academics. Teachers at the first- and second-grade levels were able to specifically list benefits provided to students who attend an early childhood program. These benefits include school readiness, motor skills, and alphabet knowledge.

All kindergarten teachers echoed the benefits to students of attending a preschool program. They expanded the benefit list to include socialization and academic benefits. These advantages were not necessarily limited to one program over another according to the respondents.

Nine of the 10 participants had positive comments regarding students participating in the Missouri Preschool Program. Common themes that arose during the teacher interviews included preschools in general preparing students to learn once they enter elementary school. Social benefits were also noted by teachers.

Multiple teachers specifically mentioned the MPP prepares parents to be involved with their child's education. This would seem to be important, as through multiple

interviews teachers repeatedly mentioned how important home life is in terms of the academic, emotional, and behavioral development of students.

All of the kindergarten teachers interviewed credited attending preschool with easing the transition for students. The prior exposure to an educational setting helps preschool students avoid some transition pitfalls. Kindergarten teachers generally recognized preschool students as being able to follow directions, being able to follow a routine/schedule, and having developed fine motor skills.

Kindergarten teachers recognized one specific transition advantage the district's MPP students have over students attending other early childhood education programs. The teachers noted benefits to students being familiar with the school building prior to entering kindergarten. According to teachers, students who have been through the MPP seem more comfortable than their peers. One teacher attributed this to MPP students feeling safer, as they have been in the building on a daily basis prior to kindergarten. The MPP students know the location of the bathrooms, nurse's office, principal's office, and the procedures when in the cafeteria due to the daily exposure to the building during preschool.

Future Research

Students who attended the MPP did not show statistically significant academic achievement differences in the area of communication arts for the kindergarten, first-grade, and second-grade levels. This study was limited to communication arts due to the data available, but another for future examination would be academic achievement in mathematics. Pearson, the company responsible for Aimsweb, also produces a

mathematics assessment version of the program. It would be interesting to see if there is a statistically significant difference in mathematics achievement between the MPP participants and their peers.

In this study, the peer group was a potentially diverse group in terms of academic background prior to kindergarten entry. The peer group may have included students who attended another preschool program. Students who attended the district's Title I program were removed beforehand as they could be identified. The same was not true of students who attended Head Start or a private preschool program.

It would be interesting to see if there was a statistical difference in academic achievement in kindergarten, first grade, and second grade between the MPP group and peers who had no school experience prior to kindergarten entry. This would require the district to adopt a system of identifying preschool academic backgrounds prior to kindergarten enrollment. There is no guarantee the district would be able to identify the pre-kindergarten backgrounds of students who move into the district after the kindergarten year.

During the teacher interviews, school readiness was mentioned by multiple participants as an area preschools positively impact. It would be interesting to see if this was reflected in data. One possible data source could be office referrals. Students who are ready for school are typically familiar with routines and procedures of the educational environment. Therefore, those students adapt quickly and typically struggle less with behavior.

Another possible data source would be attendance rate. Attendance could reflect the school readiness of both the child and the family. Families typically have more influence on a child's attendance at younger ages. It would be interesting to see if there is a statistically significant difference in the attendance rates of MPP participants and their peers.

Teachers mentioned the impact the MPP has on parent involvement. With the findings of the study conducted by Kim and Byington (2016), this would be an interesting topic to explore. A potential question to examine is: Does the MPP have a statistically significant impact on the number of parents involved in their child's education when compared to peers? How would this be measured?

Many districts keep sign-in sheets at parent events such as parent teacher conferences or luncheons. How would an investigator measure true parent involvement on an academic level? The topic is intriguing based on the academic benefits of parent involvement cited by Kim and Byington (2016).

Beyond academics and school readiness, preschool is often cited as benefiting students in other realms such as social skills or emotional development. Each of these areas would be interesting for an investigator to study. A final point to study would be mobility rates. The following questions should be considered:

- Are students who participate in the MPP more likely to remain in a district through graduation than their peers? This is an area that would once again integrate family involvement.

- Are the families who participate in the MPP more deeply rooted in the community than the families of peer students?
- What is the difference in the mobility rates of students at districts that have the MPP in place versus districts that do not have the MPP?

Summary

This study focused on possible academic achievement differences between students who participated in the MPP and their peers in the area of communication arts for the kindergarten, first-grade, and second-grade levels. There was no statistically significant difference shown between these two groups. Teachers were interviewed in these same grade levels at the district where the study was conducted.

Some teachers cited benefits for attending preschool beyond academic achievement. These benefits included school readiness, motor skill development, and parent involvement. These advantages were not necessarily exclusive to the MPP over other preschool programs.

Appendix A

Kindergarten Interview Questions

1) How long have you been teaching kindergarten with this district? What prior teaching experiences do you have, if any?
2) Students come to kindergarten from a variety of education backgrounds – within the school district, private preschools, Headstart, and no preschool at all. What type of differences did you notice in terms of the transition process for these different groups of students?
3) What effect do you think prior familiarity with the school building has on the transition of students?
4) What characteristics of a student coming into kindergarten seem to lend to a positive kindergarten experience?
5) What differences, if any, do you notice in the parental involvement of families of students who attended preschool at this district versus the involvement of families of students who did not attend preschool at this district?
6) When you are conducting beginning-of-the-year transition activities with students, what differences do you notice between students?
7) What differences do you notice in behavior and attendance between students in your class?

Appendix B

First- and Second-Grade Teacher Interview Questions

Students come to kindergarten from a variety of education backgrounds – within the school district, private preschools, Headstart, and no preschool at all.

1) How do your students perform academically?
2) How would you describe your students socially?
3) How would you describe the emotional development of your students?
4) What are your perceptions regarding participation in the Missouri Preschool Program for students in your grade level?

Appendix C

Consent for Teacher Interviews

LINDENWOOD

INFORMED CONSENT FOR PARTICIPATION IN RESEARCH ACTIVITIES

"An Examination of the Long-term Academic Impact for Students Who Participated in the Missouri Preschool Program in Rural Southwest Missouri"

Principal Investigator: Clint Hall

Telephone: [redacted] E-mail: [redacted]

Participant_____ Contact info _____

1. You are invited to participate in a research study conducted by Clint Hall under the guidance of Dr. Sherry DeVore. The purpose of this research is to explore what difference, if any, the Missouri Preschool Program has on the academics of students past their preschool years.

2. Your participation will involve:
   a) A 30-minute, audio taped interview that will be conducted by the school counselor.

   I am aware my interview session will be audio recorded (participant's initials: _____).

   b) The date/time of the interview will be determined according to your schedule.

   c) The school counselor will de-identify the interview transcripts to further protect your anonymity and reduce any fear of coercion. The audio tapes will remain secured by the school counselor in a locked cabinet until the project has

completed. Then, the counselor will destroy the audio tapes. The Principal Investigator, Clint Hall, will only have access to the de-identified transcripts.

3. The amount of time involved in your participation will be approximately 30 minutes. A maximum of 10 teachers have been invited to participate in this study.

4. There are no anticipated risks associated with this research.

5. There are no direct benefits for you participating in this study. However, your participation will contribute to the knowledge about the potential benefits of the Missouri Preschool Program.

6. Your participation is voluntary, and you may choose not to participate in this research study or to withdraw your consent at any time. You may choose not to answer any questions that you do not want to answer. You will NOT be penalized in any way should you choose not to participate or to withdraw.

7. We will do everything we can to protect your privacy. As part of this effort, your identity will not be revealed in any publication or presentation that may result from this study, and the de-identified data that are collected will remain in the possession of the investigator in a safe location (a locked cabinet and password-protected computer).

Due to the small sample size, there is a slight possibility the identities of the interview participants may be recognized; however, steps will be taken to mitigate the possibility. A third party (school counselor) will conduct the interviews, transcribe the responses, and redact any personally identifiable information before submitting the transcripts to the Principal Investigator. The school counselor will secure the audio tapes in a locked cabinet until the project has completed. Then, the counselor will destroy the audio tapes.

8. If you have any questions or concerns regarding this study, or if any problems arise, you may call the Principal Investigator, Clint Hall, at [redacted] or the Supervising Faculty, Dr. Sherry DeVore, at 417-881-0009. You may also ask questions of or state concerns regarding your participation to the Lindenwood Institutional Review Board (IRB) through contacting Dr. Marilyn Abbott, Provost, at mabbott@lindenwood.edu or 636-949-4912.

I have read this consent form and have been given the opportunity to ask questions. I may retain a copy of this consent form for my records. I consent to my participation in the research described above.

_____		_____
Participant's Printed Name	Date	Signature of Participant
_____		_____
Primary Investigator's Printed Name	Date	Signature of Primary Investigator

Appendix D

Recruitment Letter

My name is Clint Hall, and I am a doctoral student at Lindenwood University. As part of my program requirements, I am conducting a study which will be documented in a dissertation titled *An Examination of the Long-Term Academic Impact for Students Who Participated in the Missouri Preschool Program in Rural Southwest Missouri*.

The purpose of this study is to examine what difference, if any, the Missouri Preschool Program has on the academics of students past their preschool years.

Would you be interested in participating in a face-to-face interview to respond to questions about your experiences as a teacher with students who have come through the Missouri Preschool Program as well as their peers? The interview will be audio-recorded for accuracy in transcribing your responses.

Due to the small sample size, there is a slight possibility the identities of the interview participants may be recognized; however, steps will be taken to mitigate the possibility. A third party (school counselor) will conduct the interviews, transcribe the responses, and redact any personally identifiable information before submitting the transcripts to the Principal Investigator. The school counselor will secure the audio tapes in a locked cabinet until the projected has completed. Then, the counselor will destroy the audio tapes.

The de-identified transcripts will be deleted or destroyed three years from the date of the completion of the study.

If you are willing to participate in the interview, please read the Informed Consent form. You may contact the school counselor to schedule a day and time for the interview.

Thank you for your time,

Clint Hall, Principal Investigator

Appendix E

Lindenwood University

School of
Education 209 S.
Kingshighway
St. Charles, Missouri 63301

Permission Letter: Superintendent

Date: 03-12-2016

Dear [redacted],

I am conducting a research study titled, "An Examination of the Long-Term Academic Impacts of Students Who Participated in the Missouri Preschool Program in Rural Southwest Missouri," in partial fulfillment of the requirement for a doctoral degree at Lindenwood University.

The purpose of this study is to explore what difference, if any, the Missouri Preschool Program has on the academics of students past their preschool years.

It is hopeful this study's findings will contribute to a better understanding of the long-term impact of early childhood education on students as well as what practices are best for producing sustainable academic gains.

I am seeking your permission to interview elementary teachers in grades kindergarten, first, and second. I am also seeking to examine student Aimsweb data from the year 2009 through 2015.

Participation in the study is completely voluntary. You may withdraw from the study at any time without penalty. The school district's name, as well as the participants, will remain anonymous in the dissertation or future publications of this study. Any identifying information acquired for the study will be maintained in a secured, locked cabinet and/or password-protected to assure confidentiality.

Please do not hesitate to contact me with any questions or concerns about participation in the study. A copy of this letter and your written consent should be retained by you for future reference.

Yours truly,

Clint Hall

Doctoral Candidate
Lindenwood University

Permission Form

I, _____, grant permission

to _____, the primary researcher, to _____

By signing this permission form, I understand that the following safeguards are in place:

1. I may withdraw from the study at any time without penalty.
2. The identity of the school district, and the participants, will remain anonymous in the dissertation or any future publications of the study.

I have read the information above, and any questions that I have posed have been answered to my satisfaction.

_____ _____

Signature Date

Appendix F

LINDENWOOD

DATE:	May 6, 2016
TO:	Clint Hall
FROM:	Lindenwood University Institutional Review Board
STUDY TITLE:	[883086-1] An Examination of the Long-Term Academic Impacts of Students Who Participated in the Missouri Preschool Program in Rural Southwest Missouri
IRB REFERENCE #:	
SUBMISSION TYPE:	New Project
ACTION:	APPROVED
APPROVAL DATE:	May 6, 2016
EXPIRATION DATE:	May 6, 2017
REVIEW TYPE:	Expedited Review

Thank you for your submission of New Project materials for this research project. Lindenwood University Institutional Review Board has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a study design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Expedited Review based on the applicable federal regulation.

Please remember that informed consent is a process beginning with a description of the study and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the study via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document.

Please note that any revision to previously approved materials must be approved by this office prior to initiation. Please use the appropriate revision forms for this procedure. All SERIOUS and UNEXPECTED adverse events must be reported to this office. Please use the appropriate adverse event forms for this procedure. All FDA and sponsor reporting requirements should also be followed.

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to the IRB.

This project has been determined to be a Minimal Risk project. Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the completion/amendment form for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of May 6, 2017.

Please note that all research records must be retained for a minimum of three years. If you have any questions, please contact Megan Woods at (636) 485-9005 or mwoods1@lindenwood.edu. Please include your study title and reference number in all correspondence with this office.

If you have any questions, please send them to mwoods1@lindenwood.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Lindenwood University Institutional Review Board's records.

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Vita

Clinton R. Hall graduated from Drury University in Springfield, Missouri, with a bachelor's degree in secondary education. After graduation from college, he began teaching history and mathematics at Norwood High School in Norwood, Missouri. He remained in that position for four years. While employed at Norwood, Mr. Hall began work on his master's degree in education administration at Missouri State University. Upon completion of his master's degree, Mr. Hall entered the administration field by accepting the elementary principal position at Ava R-I School District in Ava, Missouri. Mr. Hall is currently entering his fourth year in this position.