

**Reading Level Change between Kindergarten and Third Grade for Students  
Attending Title I and Non-Title I Full Day Kindergarten**

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## Abstract

The reading level a student has attained by third grade is crucial to overall success in school, post-secondary education, employability, lifetime earnings, and the risk of incarceration. The purpose of this study was to investigate to what extent there is a difference between the kind of full-day kindergarten a student attended and the student's reading level by the end of third grade as measured on the Qualitative Reading Inventory (QRI). A quantitative research design was used to measure the association between quantitative variables. The dependent variable was change in reading level. The independent variables were type of school attending (Title I or non-Title I), student gender, student qualification for free or reduced lunch, and student minority or non-minority. For this research, minority included the following groups, Hispanic, Asian, Native American, African American, Pacific Islander, and Multi-Ethnic. Additionally, non-minority included students categorized as White. The population included students continuously enrolled in the same elementary school during kindergarten, first grade, second grade and third grade during the 2010-2011 to the 2013-2014 school years. Students in the sample were in full-day kindergarten during the 2010-2011 year. Hypotheses concerning the relationship between kind of kindergarten, full-day at a Title I school or full-day at a non-Title I school, were developed. Each correlation was calculated to index the strength and the direction of the relationship between two variables. A *Chi Square* test was conducted to test for the statistical significance. With the exception of students qualifying for reduced lunch, there was a statistically significant relationship found when comparing student groups at Title-I and non-Title I schools. This study has implications for district leadership and staff who are working to ensure all

students read on grade level by the end of third grade. Included in recommendations for future research, is replicating the study to include students participating in half-day kindergarten.

## **Dedication**

This work is dedicated to my loving and supportive wife, children, and family who have always supported me in my professional aspirations. To my wife, Kristi, thank you for putting up with my dreams, my thoughts, and my insecurities. You are my rock! Sam and Grace, I hope that both of you know how much I love you and that so much of what I do is to set an example for you. I treasure both of you and am so proud to be your dad. Dad, I thank you for always being there at a moment's notice and making a continual effort to support my family and me. Corinne, I thank you for your unconditional love, support, and encouragement. Mom, you have led by example that anything is possible through your education. Paul, you are such an important part of my life and a constant encouragement for my entire family. Grandma, I love you more than words can describe. You and Grandpa both have had a profound impact on my life. Uncle Mark, I miss you so much, and I thank you for helping me understand that I am smart enough to follow my dreams and passions. Your early intervention, when I was struggling as an adolescent, made a significant difference. Ashley, your support as my sister, has been incredible.

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## **Chapter One**

### **Introduction**

The focus of kindergarten education has changed during the past century and this change has been magnified within many school systems as the result of the difference in reading levels that exist within the same school district. A review of the changes that took place in kindergarten in the 1980s with curriculum and readiness expectations can explain the shift in focus. During the 1980s kindergarten changed from child-centered learning to skills centered learning (Kruger, 2011). Kruger explained the focus of kindergarten during this time changed to become an extension of the primary grades with a central focus on being ready for first grade. Pappano (2010), noted students need to be able to have literacy skills to include speaking, listening, reading, and writing before starting first grade.

This change has been described as a shift to focus on skills along with increased accountability that has reached kindergarten (Allen, 2001 a). The kindergarten year was historically the year that eased the transition from home to school for young students with a focus on soft skills (Allen, 2001 a). Kindergarten in the United States is now focused on getting students ready for first grade. In order to get kindergarten students ready for first grade, students are now counting to 100, and searching for answers to complex problems (Allen, 2001 a). The accountability movement in United States education has finally reached kindergarten. It may not matter whether this change is a shift of focus to skills that all students should learn by the end of kindergarten or increased accountability in the United States as described previously, the end result is that kindergarten is different than it once was.

There has been debate concerning whether the current kindergarten focus is appropriate for kindergarten students (Ray & Smith, 2010). While educational experts continue to work to figure this out across the United States, this debate is overshadowed in many school systems by the reality of the kindergarten students walking through the schoolhouse doors. For many school systems, a difference in reading levels exists when students enter kindergarten. Often, this difference may continue through third grade and beyond.

Studies have shown that the difference in reading level has continued to grow in the United States. Over the past three decades, the difference in reading level between students living in poverty and those not living in poverty has grown significantly. The difference in reading level as related to income was described this way:

Among children born in the 1950s, 1960s, and early 1970s, the reading achievement gap between those from high-income families and those from low-income families was about 0.9 of a standard deviation. This gap began to widen with the cohorts born in the mid-1970s. Among those born 20-25 years later, the gap in standardized test scores was roughly 1.25 standard deviations—40 percent larger than the gap several decades earlier. (Reardon, 2013, p. 10)

In addition to the difference in reading level that has continued to grow, the overall difference on standardized assessments has grown as well (Reardon, 2013). College completion rate for children from high-income families has continued to grow at steep rates for the past few decades, while the college completion rate for children from low-income families has not moved for decades (Reardon, 2013). Experts in the field have determined that focusing on college preparedness only during high school is too late

and will likely not result in college completion for students from poverty. Substantial inequities in reading levels exist when students enter school in kindergarten and can increase if interventions are not utilized early in a child's educational experience (Lee, 2012). This research is precisely why it is critical to analyze what school systems are doing at an early age to intervene in reducing the difference in reading levels for students living in poverty.

Perhaps most staggering is the finding that the difference in reading level was considerably different when children entered kindergarten in the United States (Reardon, 2013). One possible contributing factor was the vast unequal quality of K-12 experiences for students over the past few decades (Reardon, 2013). Further study determined that inadequate experiences for students were not likely the cause. In one study, Early Longitudinal Study-Kindergarten Cohort, 25,000 students were tested in literacy skills in 1998 and then again many more times before 2007. During the time between 1998 and 2007 the gap in reading achievement grew minimally (Reardon, 2013). The gap in reading level changed very little over a student's K-12 school career thus placing emphasis on where the student started when entering kindergarten (Reardon, 2013).

This research made it clear that the work of school systems is to eliminate the difference in reading level as quickly as possible. The difference in reading level can begin in infancy long before children come to school. During this time, the physical conditions and effects of poverty can impact the development of a child's brain and in turn affect the child's ability to learn information when the child enters school (Nelson, 2006).

Jensen (2013) described seven areas that impact a student from poverty when they enter school. The seven areas are summarized below:

- **Health and Nutrition:** Poor people are less likely to exercise, get proper diagnoses, receive appropriate and prompt medical attention, or be prescribed appropriate medications or interventions.
- **Vocabulary:** Children who grow up in low socio-economic conditions typically have a smaller vocabulary than middle-class children do, which raises the risk of academic failure.
- **Effort:** Uninformed teachers may think that poor children slouch, slump, and show little effort because they are—or their parents are—lazy. Research suggests that parents from low-income families work as much as parents of middle- or upper-class families do. There's no inherited laziness passed down from parents.
- **Hope and Growth Mind-Set:** Research suggests that lower socioeconomic status is often associated with viewing the future as containing more negative events than positive ones.
- **Cognition:** Children from lower socio-economic backgrounds often perform below those from higher socio-economic backgrounds on tests of intelligence and academic achievement.
- **Relationships:** When children's early experiences are chaotic, and one or both of the parents are absent, the developing brain often becomes insecure and stressed. Three-quarters of all children from poverty have a single-parent caregiver. In homes of those from poverty, children commonly get twice as many reprimands as positive comments.

- Distress: Although small amounts of stress are healthy, acute and chronic stress known as distress is toxic. Children living in poverty experience greater chronic stress than do their more affluent counterparts. (pp. 24-29)

By the time a child living in poverty enters school, many of the factors above have had a significant impact.

In the article, “Closing the Gap: Early Childhood Education,” Nelson (2006) suggested that the options for eliminating the differences in reading scores are: universal prekindergarten, full-day prekindergarten, and kindergarten, comprehensive early care and education programs, model programs for young children with special needs, and year-round schools. Many reasons lead to the overall difference in reading level between student groups; however, school systems are trying various interventions to close this gap. School systems are working to eliminate the differences in reading level by providing interventions, by having curriculum assurances in place, and utilizing the correct resources to provide the foundational learning students need.

Students from disadvantaged backgrounds are eliminating gaps and differences in basic skills (West, Denton, & Reaney, 2001). Students from disadvantaged backgrounds can identify letters, count to 10 and beyond, recognize patterns, and compare objects with accuracy (West et al., 2001). However, these same students continually score lower than other same-aged children when more challenging topics and skills are introduced. These lower scores are seen with more sophisticated mathematics and reading concepts (West et al., 2001).

The research reviewed indicated that students from poverty start school with a possible disadvantage; however, it suggested that schools can close the gap concerning

basic skills. As students move from grade to grade and the academic work becomes higher-level, the differences in reading level may become wider.

### **Background**

Much of the research in the area of reading level has focused on the differences between urban and suburban school districts; white students and students of various ethnicities; and students qualifying for free or reduced lunch and those who do not qualify for free or reduced lunch. A specific area that appears to need more study is the reading level differences that may exist within the same school district. The suburban school district used for this study has 35 elementary schools. In the district, 10 of the elementary schools are Title I schools because the schools have a student population over 50% who qualify for free and reduced lunch. The intervention that has been implemented in the district to eliminate the difference in reading level is providing free full-day kindergarten programming to all students who attend kindergarten in one of the ten schools that has a student population with 50% or greater of the students who qualified for free or reduced lunch.

In the article, *Closing the Gap: Early Childhood Education*, Nelson (2006) wrote: Full-day prekindergarten and kindergarten also hold promise for those students most in need. The full-day structure, combined with appropriate before- or after-school programs, offers an enriching and safe environment for young students whose parents are working. Full-day programs provide schools the opportunity to address children's learning challenges and nutritional requirements, and, in the case of older children, the extended day can include tutoring and homework assistance. (p.3)

Armed with information like this, school systems across the United States were utilizing full-day kindergarten as a way to eliminate differences in reading level. However, there is also research that suggested much of the initial academic benefits of full-day kindergarten decreased or disappeared entirely by the time a student entered first grade (Vu, Han, & Buell, 2012). While there is much research about full-day kindergarten and its effects, it has been described that much of the writing focuses on beliefs as the foundation rather than real evidence. When actual research has been utilized, it showed mixed results when the focus was on the length of the school day (Vu et al. 2012).

The school district used for this study is somewhat unique because of size and the overall range of schools with high and low percentages of students who qualified for free or reduced lunch. With minimal reliable research available in a similar school system, the school district used for this study had increasing poverty, paired with concerns about reading level differences, accountability that included higher expectations, and a desire to implement a strategic intervention to support students living in poverty. With this in mind, the school district started providing free full-day kindergarten to all students who attended one of the school district's Title I elementary schools (students who qualify for free or reduced lunch over 50%) in 1994. In this suburban school district, 10 of the district's 35 elementary schools offer full-day kindergarten for all students. In these schools, 100% of kindergarten students attend full-day kindergarten.

Since 1994, the staff at each of the 10 Title I elementary schools with full-day kindergarten has analyzed student data closely. However, a study over time comparing students who attend full-day kindergarten programming at a Title I site to those students



who attended a full-day program at one of the 25 non-Title I sites has not been completed. In addition to the intervention of full-day kindergarten, students attending one of the district's Title I elementary schools may have also received the support of a Title I reading or mathematics specialist (Executive Director of Teaching and Learning, personal communication, November 11, 2014).

A substantial range of students receiving free and reduced lunch exists in the school district used for this study. There is an elementary school with 1% percent of the student population qualifying for free or reduced lunch compared to an elementary school with almost 90% of the students qualifying for free or reduced lunch (KSDE, 2014). The staff in the suburban school district used for this study needed to determine if full-day kindergarten was making an impact on student reading levels as an intervention for students attending one of the district's 10 Title I schools compared to students attending one of the district's additional 25 elementary schools in a full-day kindergarten program.

### **Statement of the Problem**

School districts across the United States are working to find ways to eliminate the difference in reading levels among students. This may be a concern within the same school system. In the suburban school system utilized for this study, educational professionals have tried many strategies to limit these differences.

School systems, like the one used in this study, are working throughout a student's entire school career to improve reading levels. It is common for educators to cite reading on grade level by third grade as a crucial benchmark to predict future difficulties in school, high school graduation, and challenges later in life (Fiester, 2013).

In an article written by Hernandez (2011), findings have described the relationship between third-grade reading levels and future outcomes.

- One in six children who were not reading proficiently in third grade did not graduate from high school on time, a rate four times greater than that for proficient readers.
- The rates were highest for the low, below-basic readers: 23 percent of these children dropped out or failed to finish high school on time, compared to 9 percent of children with basic reading skills and 4 percent of proficient readers.
- Overall, 22 percent of children who have lived in poverty did not graduate from high school, compared to 6 percent of those who have never been poor. This rose to 32 percent for students spending more than half of their childhood in poverty.
- For children who were poor for at least a year and were not reading proficiently in third grade, the proportion of students who didn't finish school rose to about 26 percent. That's more than six times the rate for all proficient readers.
- The rate was high for poor Black and Hispanic students, at 31 and 33 percent respectively or about eight times the rate for all proficient readers.
- Even among poor children who were proficient readers in third grade, 11 percent still didn't finish high school. That compares to 9 percent of subpar third-grade readers who have never been poor.
- Among children who never lived in poverty, all but 2 percent of the best third-grade readers graduated from high school on time.

- Graduation rates for Black and Hispanic students who were not proficient readers in third grade lagged behind those for White students with the same reading skills. (pp. 3-4)

At the conclusion of his research, Hernandez (2011) described policy and program strategies to put in place. One of the programs he suggested for school districts was full-day kindergarten programming. The suburban school district used for this research needed to determine if the intervention of full-day kindergarten at Title I elementary schools had a positive impact on student reading levels compared to the students who participated in full-day kindergarten at a non-Title I school by the time the students were in third grade.

### **Purpose of the Study**

One purpose of the study was to determine the literacy skill of all students as they entered full day kindergarten. Also, the literacy skill level was analyzed to determine how the literacy skill level was impacted by gender, socio-economic status, and student minority or non-minority status. Further, differences in the literacy skill level between students attending Title I and non-Title I schools were studied.

An additional purpose of this study was to determine how reading levels changed from kindergarten through third grade for students who attended full-day kindergarten at Title I schools compared to students who attended full-day kindergarten at non-Title I schools. This change was measured using the Qualitative Reading Inventory (QRI). Additionally, the change in reading level by third grade as measured using the QRI was also analyzed by gender, socio-economic status, and student minority or non-minority status.

### **Significance of the Study**

Research referencing full-day kindergarten programming for at-risk students and the importance of students reading on grade level by third grade were referenced above. Many interventions have been utilized in school systems to minimize differences, but there is no single solution that will always close the gap (Nelson, 2006). This study explored the impact of full-day kindergarten on eliminating the difference in reading levels between those students attending Title I schools and those attending non-Title I schools.

There has been anecdotal evidence shared and reviewed in the school district used for this study over the years; however, an in-depth study has not been conducted. The research conducted included an analysis of the performance in the area of reading, using End of Year (EOY) reading levels for the students who attended kindergarten at one of the 10 Title I sites with full-day kindergarten to the students enrolled in full-day kindergarten at one of the 25 non-Title I sites across a suburban school district. Data were collected in reading at the beginning of kindergarten, the end of kindergarten, and the end of the third-grade year. The significance of this study was to determine if full-day kindergarten at Title I schools had an impact on the reading level of the students enrolled in those full day programs. Additionally, it was to determine how well reading levels of students who attended full-day kindergarten compared to reading levels of students who attended full-day kindergarten at a non-Title I school in a suburban school district by the end of third grade. Students in these schools, Title I and non-Title I schools, were exposed to the same curriculum, resources, and teaching techniques.

In the suburban school district used for this research, literacy information was collected within the first three weeks of school when students entered kindergarten. The information collected was related to uppercase letter identification, lower case letter identification, recognition of consonant sounds, recognition of vowel sounds, and identification of high-frequency words. Phonemic awareness and guided reading level were also included. Yearly reading performance levels were collected for all students through third grade. Reading level data were collected using the QRI given at the end of each school year (Director of Assessment and School Improvement, personal communication, November 11, 2014).

### **Delimitations**

Delimitations, as defined by Lunenburg and Irby (2008), are “self-imposed boundaries set by the researcher on the purpose and scope of study” (p. 134). The delimitations set for this research included:

1. Data were collected from one suburban school district in the state of Kansas.
2. The pre-assessment data were collected using the district-created Beginning of the Year (BOY) kindergarten literacy assessment for the 2010-2011 school year.
3. Third-grade student reading level data were collected using the End of Year QRI reading assessment for the 2013-2014 school year.
4. The data used for this research included students who were enrolled at the same Title I school or a non-Title I school for all of kindergarten, first grade, second grade, and third grade.

## **Assumptions**

Assumptions according to Lunenburg and Irby (2008) are “postulates, premises, and propositions that are accepted as operational for the purposes of research” (p. 135).

The assumptions that impacted this research include:

1. The data received from the suburban school district were complete and accurate.
2. The data collection methods used by teachers across the school district were complete and accurate.
3. Staff giving student performance assessments in the area of reading were trained to provide the given assessments.
4. Staff administering the performance assessments in the area of reading administered the assessments with fidelity.
5. The suburban school district’s report of Title I and non-Title I schools was accurate.
6. Testing conditions were similar for all students who completed the end of year reading assessment using the QRI.
7. Some students attending kindergarten at a Title I school may have received extra reading support from a reading specialist. This information is not collected for each student because the 10 Title I schools receive school-wide reading support.
8. Students who attended both Title I and non-Title I schools were exposed to the same teaching techniques.

## **Research Questions**

To determine whether or not the intervention of full-day kindergarten at Title I schools in a suburban school district impacts reading levels by third grade, the following research questions were developed:

**RQ1.** What is the literacy skill level of all students as they enter full-day kindergarten?

**RQ2.** To what extent is the literacy skill level of all students impacted by gender, socio-economic status, and student minority or non-minority status?

**RQ3.** To what extent is there a difference in the change in reading level, as measured on the Qualitative Reading Inventory, from kindergarten to third grade between students who attended full-day kindergarten at a Title I school and students who attended full-day kindergarten at a non-Title I school?

**RQ4.** To what extent is the difference in the change in reading level, as measured on the Qualitative Reading Inventory, from kindergarten to third grade between students who attended full-day kindergarten at a Title I school and students who attended full-day kindergarten at a non-Title I school affected by student gender?

**RQ5.** To what extent is the difference in the change in reading level, as measured on the Qualitative Reading Inventory, from kindergarten to third grade between students who attended full-day kindergarten at a Title I school and students who attended full-day kindergarten at a non-Title I school affected by student socio-economic status?

**RQ6.** To what extent is the difference in the change in reading level, as measured on the Qualitative Reading Inventory, from kindergarten to third grade between students

who attended full-day kindergarten at a Title I school and students who attended full-day kindergarten at a non-Title I school affected by student minority or non-minority status?

**Definition of Terms:** For accurate interpretation of this study's purpose and findings, terms specific to this study have been identified and defined. The following definitions are provided for this purpose.

**Reading Level Difference:** Reading level difference is a reading level that requires instruction at student's specific level with variation between students. For this study, the difference in reading level was measured on the QRI (Shapiro, 2014).

**At-risk:** Students who qualify for free or reduced lunch are at-risk as determined by federal guidelines or living in an environment with increased risk factors. For this research, students attending one of 10 Title I Schools were considered at-risk (Moore, 2006).

**Early Literacy Skills:** These are skills that begin to develop in the preschool years, such as alphabet knowledge, phonological awareness, letter writing, prior knowledge and oral language (National Institute for Literacy, 2009).

**Full-day Kindergarten:** Full-day kindergarten and all-day kindergarten were used interchangeably in this study as both names are used in research. This kindergarten schedule is the same amount of time used in first through fifth grade.

**Reading Achievement:** Current reading level is a student's reading level at the time the data was collected using the QRI assessment.

**Title I School:** The schools used in this study have over 50% of the student population qualifying for free or reduced lunch. A portion of the ESEA Act provides



financial assistance to local education agencies and schools with high percentages of children from low-income families (US Department of Education, 2014).

### **Overview of the Methodology**

The group of students used for this research was students enrolled in kindergarten, first, second, and third grade in one suburban school district in the Midwest. The data of all students continuously enrolled in the suburban school district attending the same Title I or non-Title I schools from kindergarten through third grade were analyzed for this study. For this study, performance levels were analyzed in the area of reading at the beginning and end of kindergarten and the end of third grade. The suburban school district's assessment department provided the student achievement levels for the research.

### **Organization of the Study**

The first chapter in this study explained the components of the study to include: background for the study, statement of the problem, purpose of the study, significance of the study, delimitations, assumptions, research questions, definition of terms, and an overview of the methodology. Chapter two lists relevant literature related to the proposed research questions. Chapter three outlines the design of the study and the methodology used to conduct the research. The results of the hypothesis testing for each research question are reported in chapter four. Chapter five provides a summary of the findings compared to the literature, interpretation of the results of the data analysis, a statement of the conclusion, and recommendations for further research.

## Chapter Two

### Review of Literature

Early in the nineteenth century, advocates of kindergarten introduced the European model in the United States, which for the first time explored the idea that children learn differently than adults. This model was similar to a model being used throughout Germany (Watras, 2012). Even with advocates and a growing curiosity of kindergarten in the United States, it took until the 1930s for the first kindergartens to be established within state school systems (Watras, 2012).

While kindergarten has been an established practice in the United States for over a century, many changes have occurred within kindergarten programs. Over the past two decades, kindergarten no longer has a focus on play, exploration, and socialization. The current focus of kindergarten is curriculum, preparing for tests, and academic preparation (Bassok & Rosem, 2014).

Kindergarten has been utilized as an established practice in the United States for well over 100 years; however, the structure being used has morphed overtime and looks different from state to state and from school district to school district. Vu, Han, and Buell (2012) wrote, “in recent years, the popularity of full-day kindergarten in the United States has increased among families and the school systems” (p. 2). Since 1977, the number of students in full-day kindergarten programs has more than doubled with an increase from 27% to 60% in 2001. During the same span of time, the number of students in part-day kindergarten has decreased from 73% to 40% (Vu, et al., 2012). In addition to providing an expanded curriculum and extra opportunities for students, full-day kindergarten appeared to be utilized as an intervention to eliminate or reduce the

reading level differences between student groups. Several states in the United States made an investment in full-day kindergarten to assist at-risk and low-income children (Brown, 2005).

This chapter provides a review of the following topics: the history of kindergarten in the United States, an overview of present-day kindergarten, basic information about Title 1, information regarding the importance of third grade, an examination of the academic needs of students living in poverty, and analysis of the use of full-day kindergarten as an intervention.

### **History of Kindergarten in the United States**

The first kindergarten established in the United States was in Watertown, Wisconsin, opening in 1856. This kindergarten was founded by Margarethe Schurz and was opened as a German-language kindergarten (Shapiro, 1983). As the movement to create additional kindergartens in the United States grew, more kindergartens were established. However, most were created as private schools with the primary goal to serve middle-class children. These kindergartens were largely based on the model created in Germany by Friedrich Froebel, the founder of kindergarten (Nawrotzki, 2009). The first free kindergartens were not widely established in the United States until the 1870s. Various groups that supported the first free kindergartens in the United States included clubs, religious organizations, wealthy individuals, corporations, and small-time subscribers (Nawrotzki, 2009). Nawrotzki (2009) wrote that the first kindergartens were:

Following—more or less—the pedagogical prescriptions of kindergarten founder Friedrich Froebel, free kindergartens bathed, clothed, and fed needy children who were below compulsory school age. They also visited children’s homes and

attempted to impose middle-class standards of hygiene and economy on poor and working-class mothers. In the United States, free kindergartens grew rapidly in number: by 1880, there were dozens, mostly in large cities. (p. 183)

The Friedrich Froebel kindergarten model was focused on the “unity of man, God, and nature through songs, games, movement activities, stories, poetry, nature study, and gardening” (Krueger, 2011 p. 2).

Kate Douglas Wiggin, also known as Kate Douglas Smith, is largely credited for leading the kindergarten movement and the practice of dividing students by age within the United States (de Cos, 2001). In 1878, she headed the Silver Street Kindergarten with two other people in San Francisco. This kindergarten was the first free kindergarten in California (de Cos, 2001). Most kindergartens were private in the United States until the time of World War I. During this time, there was a large influx of immigrants from Europe moving to urban cities. As a result of this growth, many of the once private kindergartens were incorporated into public school systems (Cooper, Allen, Patall, & Dent, 2010).

The next significant change in kindergarten took place leading up to and during World War II. During this time, there were fewer kindergarten teachers available and the half-day model became common. However, even with limited time, the overall focus on academic skills began to increase (Cooper et al., 2010). Cooper et al. (2010) explained that this push was “further impelled in the 1950s during the cold war, when concern about global competition with our ideological adversaries led to a national desire for the acceleration of academic knowledge acquisition throughout the school years” (p. 37).

Over the next two decades, kindergarten expanded across the United States, however, most remained half day programs with a focus on play, socialization and a transition to more academic learning (Cooper et al., 2010). Russell (2010) explained from the 1990s forward “we see kindergartens firmly institutionalized in public elementary schools and described in media reports as the new first grade, with playtime in kindergarten giving way to worksheets, math drills, and fill in the bubble standardized tests” (p. 237). The time in a child’s education that originally focused on social and emotional development was now the beginning of important academic instruction (Russell, 2010).

### **Present Day Kindergarten**

During the 1980s and 1990s, kindergartens across the United States began to shift in focus. This shift was in large part due to the political and educational concerns in the United States. These concerns highlighted the education of students from preschool to age eight as a national focus (Dombkowski, 2001). Dombkowski explained that the shift was needed because “kindergarten in the 1970s was ‘the no man's land of education’ lost amidst the surge of pedagogical and policy foci on Head Start and primary curricular reform” (p. 539). As this shift continued to take place, kindergarten became widely known as the beginning of a child’s academic life.

In addition to the educational and political concerns surrounding kindergarten, more and more information was being discovered about the cognitive capacity of the brain (Allen, 2001 b). Recent discoveries about the human brain have increased the understanding about the capacity children have for learning new information (Allen, 2001 b). The National Center for Education Statistics (2014) reported that by the conclusion of

kindergarten, 94 % of children knew their alphabet, and 99% recognized basic shapes (Allen, 2001 b). In the same information collected by NCES, students leaving kindergarten left having acquired the same basic information regardless of the differences when the students started kindergarten (Allen, 2001 b). Cognitive research and additional information about the brain has changed kindergarten across the United States; kindergarten has also been changed as a result of alignment to standards. With state standards, additional accountability for educators and school systems has been created (Allen, 2001 b).

As kindergarten became less formalized around play and socialization and shifted to be the significant start of academics for students, more questions were raised regarding the best way to support students who were not ready for kindergarten. Holloway (2003) shared that “two approaches that parents and schools commonly use are delaying the child’s entry into kindergarten and retaining the child in kindergarten for an extra year” (p. 89). Both of these options have been frequently used in schools across the United States. However, research indicated that one is better than the other. Students who had delayed entry into kindergarten, typically performed at higher levels than their younger classmates in grades one and two, conversely, students who repeated kindergarten performed at lower levels than younger peers. Holloway provided the following possibilities for the difference:

- The underlying developmental problems of the two may differ.
- The two groups may have different socio-economic backgrounds.
- Parents who choose to delay their child’s school entry may have a higher level of awareness and involvement.

- The stigmatizing effect of being required to repeat a grade may harm children's academic progress. (p. 89)

The kindergarten of the 21<sup>st</sup> century is much different than the first kindergarten in the United States that was based on the model created by Friedrich Frobel. Because of this history and change over time, families and school systems in the United States have had to make challenging decisions like the ones described above (Allen, 2006). Due to the early focus on academics taking place in many kindergarten classrooms across the United States; Gullo and Hughes (2010) wanted to adjust the focus to an earlier time more reminiscent of the model created by Friedrich Frobel. They explained that there was an opportunity to change kindergarten back to what it was in the past. They saw an opportunity to focus on engagement of students, activities that created opportunities related to sensory and fostering a curiosity of learning. All while addressing the accountability required by the educational system of today (Gullo & Hughes, 2010).

Gullo and Hughes (2010) reported that more children are attending prekindergarten programs and this, combined with state academic standards, has forced some of the change across the United States. Miller and Almon (2009) explained:

The emphasis has become content-oriented, skill-based instruction and learning that teachers assess using conventional measures. Worksheets or other paper and pencil teacher-made tests have become customary practice for determining what specific skills and knowledge children have acquired. In today's kindergarten, teachers, and children alike are under great pressure to meet inappropriate expectations reflected in external academic standards that until now have been reserved for higher grades. (p. 21)

Kindergarten students are much different than they were 20 years ago. In 2011, white students accounted for 52% of students enrolled in public schools (National Center for Education Statistics, 2014). During that same year, blacks represented 14% of students enrolled in public schools, and Hispanics represented 23% of students enrolled in public schools (United States Department of Commerce, 2013). This was much different than what Gullo and Hughes (2010) reported in 2002 when whites represented 63.5% of public school enrollment, blacks represented 17% of public school enrollment, and Hispanics represented 14.4% of public school enrollment. Additionally, they reported that between 2020 and 2030 over 50% of all children enrolled in school within the United States would be from minority groups.

### **Title 1**

The United States Department of Education (2015) explained that the “purpose of this Title [Title 1] is to ensure that all children have fair, equal, and significant opportunity to obtain a high-quality education” (p. 1). To help obtain that opportunity, the United States Federal Government has appropriated funds each year since 1965 to help states carry out the intent of Title 1 (U.S. Department of Education, 2015). The United States Department of Education (2015) outlines the following ways that states can use the funds distributed by the Federal government:

- Ensure high-quality assessments are in place, accountability systems, teacher training, utilizing aligned instructional materials, having measurement systems in place.



- Providing reading assistance to high-poverty schools, students with limited English proficiency, migratory students, students with disabilities, and children of various backgrounds.
- Work to close the achievement gap between high-performing and low-performing students and between disadvantaged and more advantaged peers.
- Holding schools, educational agencies, and states accountable for improving the academic success of all students and identifying schools that need to be turned around.
- Distributing and targeting resources to make a difference to local educational agencies and schools.
- Design state assessment systems that are designed to make sure students are meeting rigorous standards.
- Provide teachers more decision-making and flexibility with greater responsibility for student performance.
- Provide children with enriched and accelerated educational programming.
- Promote school-wide reform by using scientifically based strategies.
- Provide substantial opportunities for professional growth.
- Coordinate services all working to meet the needs of students. (p.1)

In Kansas, the state where this study took place, schools can either receive targeted assistance if less than 40% of the students qualify for free or reduced lunch or a school can receive school-wide assistance if more than 40% of the students qualify for free or reduced lunch (Kansas State Department of Education, 2014). All of the Title I schools used in this study received school-wide assistance. The school-wide program

was designed as a reform strategy to enhance the overall educational program at a Title I school. The main goal is for students who are low-achieving to demonstrate proficiency and advanced levels of achievement on state academic standards (Kansas State Department of Education, 2014).

The Kansas State Department of Education (2014) listed the following advantages to being a school-wide program school:

- A school-wide program is a catalyst for comprehensive reform of the entire instructional program.
- It allows educators to come together and work collaboratively.
- It addresses the needs of students in an integrated way.
- It permits Federal resources to be spent in ways that most effectively raise the achievement of students. (p. 1)

The school district used for this study, chose the school-wide model because the programs that were put in place could impact all students who were achieving below level in the Title I schools (Executive Director of Teaching and Learning, personal communication, November 11, 2014).

### **The Importance of Third Grade**

This study focused on the difference in reading levels between kindergarten and third grade for students attending a Title I school and students attending a non-Title I school within the same school district. The school district used for this study relied heavily on third-grade reading levels. Therefore, it was important to have an understanding of why the third grade was selected as one of the data points.

“Students not reading proficiently by the end of third grade are four times more likely than proficient readers to drop out of high school” (Rose & Schimke, 2012, p. 2). The reality is that staffs in school systems across the United States are intensely focusing on improving literacy skills from kindergarten to third grade (Rose & Schimke, 2012). Students who are not reading on grade level by the end of third grade are at a substantial disadvantage. Recent data have indicated that 55% of fourth-grade students across the United States are reading below grade level (Fuhrman, Perry, & Shinn, 2013). Fuhrman et al., (2013) explained students, reading below grade level “lack the essential skills necessary to understand the meaning of words, locate information, and make inference from text” (p. 3). Falling behind grade level progress in reading is especially common in children from low-income families. In 2013, 7.9 million low-income third-grade children in the United States were unable to read on grade level (Fuhrman et al., 2013).

In addition to not having the necessary reading skills to be successful in school or not completing high school, students not reading on grade level by third grade also have a high chance of becoming delinquent or incarcerated (Christle, Jolivette, & Nelson, 2005). However, it was suggested that school-level supports and characteristics could have a positive impact on delinquency and the incarceration rate of youth (Christle et al., 2005). Christle et al. explained that “low school achievement predicts delinquency” (p. 70). Christle et al. (2005) indicated that factors outside of the school contributed to delinquency of students because many low-income students began school with a disadvantage of fewer pre-academic skills and were more likely to experience academic failure. They found that “schools that scored lower on overall student academic

achievement assessments tended to have a higher percentage of students from low socio-economic backgrounds” (p. 71).

In the United States there continues to be a difference in reading level between children of high socio-economic backgrounds and low socio-economic backgrounds. In fact, the difference in reading level between children of high socio-economic backgrounds and low socio-economic backgrounds has grown during the past decades as more students living in poverty read below grade level (Reardon, 2011). Sean Reardon wrote this about the changing difference in reading levels:

The 1950s and 1960s were characterized by historically low levels of income inequality and high levels of racial inequality, not only in educational achievement and attainment but in access to educational opportunity, labor markets, housing markets, and health care. Beginning in the 1970s, this pattern began to reverse. Efforts to desegregate schools and hospitals, affirmative-action programs, enforcement of fair housing laws, and gradual but important changes in racial attitudes all led to reductions in the stark racial disparities of the 1950s and 1960s. At the same time, however, income inequality in the United States began to grow sharply, a trend that continues to the present. The gap between rich and poor has widened significantly, particularly among families with children. (pp. 25-26)

This gap between rich and poor continues to have an impact on school systems across the United States.

This gap has widened the difference in reading levels and the pattern of lower academic achievement performance by children living in poverty. This can be seen in

cross-sectional and longitudinal studies (Herbers et al., 2012). Additionally, Herbers et al., (2012) explained “for families living in extreme poverty with high-risk factors for homelessness and residential instability, a strong start in the early school years may have a particular significance as a protective factor for child achievement” (p. 367). This information supported the idea of early intervention for students, so they are reading on grade level by the end of third grade.

### **Academic Needs of Students Living in Poverty**

For educators to eliminate the difference in reading levels, school systems need to be aware of the academic needs represented by students living in poverty. Many school systems across the United States have been very successful and have had students who have outperformed the statistics that awaited them due to their background as they qualified for free or reduced lunch (Jensen, 2009). In order for schools to be successful they need to have an unwavering press for academic achievement, available instructional resources, a genuine belief that all students can be successful, shared decision making, an emphasis on reading skills, regular parent-teacher communication, strategic assignment of staff, support teachers’ influence, and an overall acceptance of the school’s role in success or failure of students (Jensen, 2009).

Often school leaders who thought they were doing the right things for their students supported a strict learning environment with quiet, attentive, motivated, behaved, hard-working and polite students (Jensen, 2009). However, many of these leaders failed to recognize that these expectations were being made of students who were unhealthy, hungry, stressed, and were emotionally drained (Jensen, 2009). It is important that leaders recognize that students raised in poverty have significant social, educational,

emotional, and health needs and often have limited access to services and accommodations needed (Jensen, 2009). The research provided by Jensen (2009) supports high academic expectations for students living in poverty, but also emphasizes the importance of schools and school systems finding ways to provide the “essential human services and classroom accommodations” (p. 69).

Schools and school districts have successfully worked to find ways to meet the demands of human services and classroom accommodations. Some schools in the United States have become full-service schools providing extra support to meet students’ social, emotional, physical, and intellectual needs (Santiago, Ferrara, Blank, 2008). Santiago et al., explained that schools need to focus on the following areas:

- School-based health care: Students need to be provided health care initiatives to support students and their families to include: dental care, screenings, vaccinations, and prescription medications.
- Therapy and family casework: To provide support in the developmental needs of the whole family both in crisis and general support.
- Parent education and capacity building: Creates an opportunity for parents to participate in workshops, seminars, and discussion groups about topics that are of interest to them.
- After-school enrichment: To provide homework assistance and to provide extension activities to students that may include: martial arts, photography, chess, tennis, computer instruction, and writing. (pp. 45-46)

While the school-level supports for students living in poverty are not universal, schools and school systems have been successful by using supports like those described

here. However, supports like these are not enough. School systems need to consider abandoning practices like dumping lunches in the trash when a student cannot pay for it and these same schools, school systems, and educational staff need to remember to dismiss their views at the classroom door. Many times, educators feel like students living in poverty come from “violent, chaotic homes and that only regimented curriculum and approaches to learning will allow them to succeed” (Landsman, 2014, p. 16). Finding the right fit can be a balance for educators. Finding this balance often requires dedication, self-reflection, and reexamining what works (Landsman, 2014).

Neuman and Celano (2012) echoed the need for the same kinds of supports for students living in poverty; however, these authors wrote how important it is not to just level the playing field for students living in poverty. Neuman and Celano wrote “too many government programs like Title I, as well as foundation efforts are aimed at leveling the playing field, giving high-poverty students a leg up by equalizing educational resources with more affluent communities” (p. 20). They also explained, students living in poverty need more resources and extra support. These students need additional mentoring experiences when they are in preschool and kindergarten as well as technology specialists who can guide them through the Internet and learning experiences.

The academic needs of students living in poverty continually lead to the important role of early learning considerations. Marietta (2010) wrote that “you have to take the same old bottle of time and resources and put in a new wine of a clear and compelling goal-aligned people, systems and structures, innovation and monitoring that leads to a district-wide K-12 goal” (p. 2). These early learning programs must utilize the same strategies utilized in K-12 (Marietta, 2010).

Educators should be looking to determine what kind of early-learning opportunities are provided for students. However, these same educators must also look at the structures that are in place to support students living in poverty. Unlike almost any other industry in the United States, school structures, school strategies, and educational spending are significantly unchanged over the past decades (Miles & Baroody, 2012). The educational system in the United States was once focused, and still largely is, on providing the subject matter, preparing students for a range of jobs requiring differing levels of knowledge, and preparing students for predictable careers. However, in order to meet the current demands of society, schools should be focused on ensuring learning for all students, including those living in poverty, ensuring all students are prepared for college and career and ensuring students develop the skills to participate in the informational age so students can be life-long learners. Miles and Baroody suggested the following seven strategies be employed for schools and school systems to employ to support students living in poverty:

- Define information-age standards for learning and align curriculum, instruction, and assessment.
- Restructure the teaching job.
- Match teachers and time to students through strategic school design.
- Build and reward school and district leader capacity.
- Revise funding systems.
- Redesign central system offices.
- Leverage partnerships with families, communities, and outside experts. (pp. 5-7)



While it is a challenging task for educators in any school or system to look at all of these areas, these are the critical areas that need to be addressed for all students, especially those living in poverty, to create the systems needed to support students moving into the future (Miles & Baroody, 2012).

In addition to the school-level and district-level supports that need to take place, educators must work on providing opportunities for students living in poverty. Students living in poverty must gain background knowledge and experiences by visiting museums, civic events, colleges, and theater engagements (Anderson, 2013). Not only must students living in poverty have opportunities to experience new things, educators need to find ways to get these students involved in the community. Students living in poverty need to become involved in community service activities such as working in a community garden or holding a blood drive (Anderson, 2013). The good news is that supports such as the ones described here can work and give students living in poverty a much better chance at future success (Anderson, 2013).

### **Full-Day Kindergarten as an Intervention**

Across the United States many schools and school systems have implemented full-day kindergarten as an intervention to meet the needs of students living in poverty and to enhance the chance the students living in poverty will be reading on grade level by the end of third grade. In Philadelphia, a study found that 17,600 full-day kindergarten students who were part of a research study were 26 percent more likely to reach fourth grade without being retained as compared to the students in the same study who attended half-day kindergarten (Viadero, 2002). Not only does full-day kindergarten reduce the likelihood that a student will be retained in a future grade, it was explained by Yan and

Lin (2004) that “across the board, students in full-day programs made larger gains than did students in part-day programs” (p. 7). Also, it has been explained that now is the time for school systems to consider an implementation of the full-day kindergarten model. This was based on the need to educate the whole child while having sufficient time to meet the rigorous academic standards associated with today’s kindergarten. Specifically having adequate time for teachers to teach early literacy skills such as phonological awareness and reading fluency were noted (Ray & Smith, 2010).

Not only is full-day kindergarten supported by studies, but it is also supported by the following review of relevant literature by Costa (2005/2006):

A review of the literature does, generally, support the notion that full-day kindergarten provides an academic advantage for students. A study in the East Brunswick Public School District in New Jersey, found that those grade one children who had attended full-day kindergarten scored higher than their half-day counterparts as measured on all areas of the standardized portfolio assessment measuring instrument. (p. 16)

While the literature does support full-day kindergarten for all students, it also supports full-day kindergarten especially for students living in poverty. In the same research by Costa (2005/2006), he wrote the following:

Some debate does appear in the literature regarding who might best benefit from full-day kindergarten. Some argue that a developmentally appropriate full-day program benefits all children both academically and socially, but it is especially beneficial to children from low socio-economic or educationally disadvantaged backgrounds. (p. 16)

Full-day kindergarten can be powerful for students living in poverty because it minimizes the number of transitions a kindergarten student will have compared to those who participated in half-day kindergarten. Students participating in full-day kindergarten will be accustomed to attending a full day when they enter first grade. Additionally, full-day kindergarten provides extra social and emotional support through expanded curriculum and experiences (Schroeder, 2007). Full-day kindergarten gives students living in poverty an opportunity to fill some of the deficits that may have developed with language acquisition. Schroeder (2007) wrote “children living in poverty have heard 32 million fewer words by age four than children living in professional families and one in five children, under the age of five, lives in poverty in America” (p. 429). Full-day kindergarten can provide the information to fill the gaps that exist between children living in poverty and children not living in poverty (Schroeder, 2007).

In the United States, Indiana and Minnesota have funded full-day kindergarten for all students to break the cycle of poverty, and to assist low-income children (Brooks, 2008). One of the driving forces behind Indiana’s decision to move to full-day kindergarten was real data that was available where full-day kindergarten had already been implemented within the state. The data “revealed that significant academic progress was made among participants in school districts that established full-day kindergarten programs. Particularly, students enrolled in full-day kindergarten excelled in mathematics, reading, handwriting, and spelling” (p. 438). Indiana continues full-day kindergarten because educators in the state believed it contributed to higher grades throughout middle school, students who participated in full-day kindergarten achieved

higher levels on standardized tests for two years after leaving the program, and the students were less likely to repeat a grade level (Brooks, 2008).

In 2007, the Montana legislature approved full-day kindergarten to include a review and revision of the content standards and performance descriptors related to kindergarten. The goal of the project in Montana was to assure that Montana kindergarten students were all exposed to a common set of learning expectations. This was largely done to foster the success of students who were at-risk (Juneau, 2009).

Full-day kindergarten can make a difference for students. In one study, four years after full-day kindergarten was implemented in a school district, 75 % of a district's third-grade students were reading on grade level. This percentage is up from 64 % four years earlier. An increase was seen in the number of students who had a firm grasp of the alphabet. Before starting full-day kindergarten, only 4 % of the students in the district knew their letters, at the time of the study, after the implementation of full-day kindergarten, the number of students who knew their letters was 63 % (Carnes & Albrect, 2007).

## **Summary**

The review of related literature provided an overview of the history of kindergarten in the United States from the 1880s until the present. In addition to the historical information shared, a full description of present-day kindergarten in the United States was offered which contained a description of the current academic and standards-based focus. Information was shared about the Federal and State regulations of Title I funding and how schools can disseminate Title funds. Additionally, evidence was provided that described the importance of reading on grade level by third grade. The

academic needs of students living in poverty were discussed. Lastly, the information described the use of full-day kindergarten as an intervention. In conjunction with this information, some student outcomes were referenced based on the reading achievement of students who participated in full-day kindergarten. Chapter three presents the current study's research design, population, sample, and sampling procedure, including the instrumentation and measurement tools. Also, chapter three lists the study's data collection procedures, as well as the study's data analysis, hypothesis testing, and limitations.

## **Chapter Three**

### **Methods**

One purpose of the study was to determine the literacy skill of all students as they entered full-day kindergarten. Also, the literacy skill levels were analyzed to determine how it was impacted by gender, socio-economic status, and student minority or non-minority status. An additional purpose of this study was to compare whether or not participating in full-day kindergarten through third grade in a Title I school in a suburban school district impacted change in reading level by the time students were in third grade and how this compared to students who attended full-day kindergarten through third grade at a non-Title I school. The change in reading level between kindergarten and third grade was measured using the QRI and was analyzed by gender, socio-economic status, and student minority or non-minority status. Chapter three presents the current study's research design, population, sample, sampling procedure, instrumentation and measurement, as well as the data analysis, hypothesis testing, and limitations.

### **Research Design**

A quasi-experimental research design was used. Quasi-experiments often have a failure to randomly assign participants to experimental or control groups and give the researcher control of threats to validity (Lunenburg & Irby, 2008). One variable used for this study was the score on a kindergarten literacy skills assessment. The independent variables used for this study included: type of school (Title I or non-Title I), student gender, student socio-economic status, and minority or non-minority status. The dependent variable used for this study was the change in reading level as measured by the difference between kindergarten and third grade QRI levels.

## **Population and Sample**

The population used for this study included students continuously enrolled from kindergarten through third grade at a Title I elementary school or the same non-Title I elementary school in a suburban school district. The sample attended kindergarten during the 2010-2011 school year and completed third grade at the end of the 2013-2014 school year. Students were continuously enrolled in the same school.

## **Sampling Procedures**

For this study, purposive sampling techniques were used. Lunenburg and Irby (2008) indicated that purposive sampling “involves selecting a sample based on the researcher’s experience or knowledge of the group to be sampled” (p. 175). A student was included in the sample if the student was continuously enrolled in the same Title I or non-Title I elementary school from kindergarten through third grade during the 2010-2011 through the 2013-2014 school years. All students who were enrolled in the suburban school district’s ten Title I schools participated in full-day kindergarten. The other group of students who were included in this study attended one of the district’s non-Title I elementary schools from full-day kindergarten through third grade.

## **Instrumentation**

According to Lunenburg and Irby (2008), “instrumentation is critical to descriptive research” (p. 31). Lunenburg and Irby (2008) further explained that in most descriptive research, the study is related to a specific area. In addition, these writers explained that researchers must be careful to describe all of the specifics.

The first variable, literacy skill level, was measured using the beginning of the year literacy skill assessment administered to students in kindergarten. The classroom

teachers administered the literacy skills assessment during the first three weeks of kindergarten. This assessment was given individually to students and measured upper case letter identification, lower case letter identification, consonant sound identification, vowel sound identification, high-frequency word identification, phonemic awareness, and reading level (Director of Assessment and School Improvement, personal communication, November 10, 2014). These assessments provided information related to student's skills before the student was exposed to curriculum and supports of elementary school.

Student end of year reading levels from the end of kindergarten and third grade were obtained using the QRI. This assessment identifies students' performance in the area of reading. The QRI measures fluency, comprehension, and word identification to determine if a student is reading below grade level, on grade level, or above grade level (Pearson, 2011).

The QRI by Leslie and Caldwell (2011) listed information about the QRI assessment in the following way:

The Qualitative Reading Inventory includes both narrative and expository passages at each grade level, questions to assess prior knowledge, and word lists. Instructors can measure comprehension by retelling passages, implicit and explicit questions, and other devices. Based on the latest reading research, this comprehensive inventory focuses assessment on specific questions regarding word identification, fluency, and comprehension. It also provides suggestions for intervention instruction, procedures for assessment of strategic reading, and inclusion of results in classrooms. (p. 24)



The QRI is given one-on-one to each student. The test is comprised of several components to assess a student's reading level. The student being assessed starts by reading word lists one word at a time without the support of the teacher administering the assessment. The teacher then activates prior knowledge by asking the student a few questions about the topic of the reading passage. Following the activation of prior knowledge, the teacher then introduces the concepts of the passage and asks the student to make a few predictions related to the topic. Next, the student reads the passage out loud to the teacher. While the student is reading the passage out loud, the teacher is unable to help and is keeping track of fluency and accuracy. At the conclusion of reading out loud, the teacher removes the passage and asks the student to retell the passage using his or her words. After the student retells the passage to include all of the information that is remembered, the teacher concludes the assessment by asking questions about the passage (Pearson, 2011). All of the information collected is used to determine a reading level.

**Measurement.** For the determination of literacy skill level when students entered kindergarten, as described in research question one, numerical data was used. The data was the number students answered correctly out of 73. The questions included uppercase letter identification, lowercase letter identification, and consonant letter sound identification. Also, literacy skill level was analyzed by gender, socio-economic status, and minority or non-minority status, as described in research question two. To answer questions about minority, students were either considered minority or non-minority. Research question two analyzed numerical data represented by the number students answered correctly out of 73.

For research question three, categorical data was used to show the change in reading level from kindergarten to third grade. The kindergarten data had five categories that were collapsed into three. If a student was below grade level in kindergarten and was below grade level in third grade, they were assigned a 0 for no change. If a student was below grade level in kindergarten and was on or above grade level in third grade, they were assigned a +1. If a student was on grade level in kindergarten and below grade level in third grade, they were assigned a -1.

**Validity and reliability.** The suburban school district used in this study has conducted validity and reliability studies on the literacy skills assessment. The school district's Director of Assessment and School Improvement (2014) stated the following:

In selecting, developing, and evaluating our district assessments, it is important that we determine if our tests are valid and reliable. Our tests require us to determine the use for the exam (student analysis comparison, school analysis comparison and district program analysis comparison) so we analyze our assessments for practical qualities (ease of administration, appearance, etc.) as well as technical qualities (validity and reliability). Once the data has been run, we examine the following factors: Were the directions clear? Was the vocabulary reading level appropriate? Was the level of difficulty correct? Were there any poorly constructed items? Were any of the items ambiguous? Did the test measure the outcomes standards being measured (alignment)? Was the length of the assessment appropriate? Did the arrangement of the items make sense? Are there differences in the scoring between schools and teachers? Also, all of

these areas were reviewed by expert classroom teachers. (Director of Assessment and School Improvement, personal communication, November 10, 2014)

The Director of Assessment and School Improvement also stated the following about validity and reliability specifically with district assessments (November 10, 2014): “Validity is measured using construct validity, content validity, and criterion-related validity and reliability is measured using test-retest reliability, inter-rater reliability or inter-scorer agreement (for constructed response items) and standard error of measurement”. The data providing evidence for validity or reliability were not available for this study.

Leslie and Caldwell (2011), the authors of the Qualitative Reading Inventory, described the assessment’s construct validity in the following way:

Construct validity is determined by correlations between various types of data. We examined correlations between word identification on the word lists, oral reading accuracy on passages, the semantic acceptability of oral reading miscues, and reading rate (in words per minute). For students with instructional reading levels at or below second grade, these variables were highly correlated. Word identification in a story was also significantly correlated with comprehension through the first-grade instructional reading level. Beyond first grade there appear to be factors other than word identification at work, such as prior knowledge and text structure. That is, students could read a passage accurately enough to meet the oral reading accuracy criteria for the instructional reading level but not meet the criteria for comprehension. (p. 483)

Additionally, Leslie and Caldwell (2011) described the assessment's criterion-related validity in the following way:

Analysis of the relationship of test scores to variables external to the test provided another important source of validity evidence. External variables include measures that are hypothesized to measure the same construction. The convergent evidence is expected between tests of reading comprehension using different test formats. For example, the QRI is an individually administered test that includes oral reading of connected text followed by retelling and comprehension. Instructional-level scores on the QRI should correlate with tests of reading comprehension that measure comprehension through multiple choice formats and cloze formats. We examined the correlation (within grade) between the instructional level obtained from the QRI and the student's national curve equivalent (NCE) or standard score on a group-administered standardized reading test. The standardized test data from grades one, two, and three were obtained from the California Achievement Test or the Iowa Test of Basic Skills. The standardized test data from grade three through eight were Terra Nova tests. (p. 485)

In considering content validity, the QRI utilized both narrative and expository text to showcase reading levels from pre-primer through high school. Passages were varied in familiarity to assess student prior knowledge as the assessment includes a measure of prior knowledge. By utilizing the QRI students can show comprehension in several ways on the assessment to include: answering implicit questions, answering explicit questions, and retelling to include inferences. The words utilized on the word lists can be decoded

using the rules of English and some that must be memorized. Reading fluency is measured by using the words correct per minute when a student is reading the passage out loud (Leslie & Caldwell, 2011).

Pearson (2011) has calculated correlations between instructional level in text and standardized tests of reading achievement. For grade one, the correlation is .85 with 50 total items, for grade two, the correlation is .65 with 32 total items and for grade three, and the correlation is .55 with 39 total items. The overall range for correlations was .55 to .85.

Reliability is the “degree to which an instrument consistently measures whatever it is measuring” (Lunenburg & Irby, 2008, p. 182). Leslie and Caldwell (2011), the authors of the Qualitative Reading Inventory, described the assessment’s reliability in the following way:

[QRI] assessment is used to determine the consistency with which an instructional level would be the same if two passages *of the same genre* were used. We examined the reliability of comprehension scores on two passages at the same readability level by asking how close the two scores were to the instructional-level cutoff score of 70%. The degree of consistency in comprehension scores on two passages of the same readability was always above .80, and 75% were above .90. Over 70% of the time, the same instructional level would be attained independent of the passage chosen, *as long as the same genre was used*. It should be noted, however, that some of the pre-primer passages include pictures, and others do not. For the beginning reader, one cannot assume that the same

instructional level would be obtained if pictured and non-pictured passages are compared because beginning readers rely heavily on picture clues. (p. 26)

Table 1 includes the means, standard deviations, and standard errors of measurement of proportional comprehension scores for each passage used in kindergarten through third grade. The table shows a mean range of .67 to .82, a standard deviation range of .13 to .28, a standard error of measurement range of .14 to .21, and a sample size of 14 to 98.

Table 1

*Descriptive Statistics*

Level: Passage	<i>M</i>	<i>SD</i>	<i>SEM</i>	<i>n</i>
Pre-Primer: <i>Just Like Mom</i>	.82	.17	.21	69
Primer: <i>The Pig who learned to read</i>	.75	.28	.19	65
First: <i>The Bear and The Rabbit</i>	.76	.27	.18	57
Second: <i>What Can I get for My Toy</i>	.80	.18	.14	64
Third: <i>The Trip to the Zoo</i>	.76	.17	.14	98
Fourth: <i>The Busy Beaver</i>	.71	.13	.18	25
Fifth: <i>How does Your Body Take in Oxygen?</i>	.71	.20	.15	14
Sixth: <i>Clouds and Precipitation</i>	.67	.20	.16	17

*Note:* Adapted from “Qualitative Reading Inventory-5 Manual” by L. Leslie, and J. Caldwell, 2011. Copyright 2011 by Pearson Education.

### **Data Collection Procedures**

Before data collection began, a research proposal form was submitted to the Director of Assessment and School Improvement of the suburban school district (see Appendix A) to conduct research. In addition to the research proposal, a letter of support

written by the major advisor (Appendix B) was sent to the Director of Assessment and School Improvement. The proposal and letter were electronically mailed to the Director of School Assessment and School Improvement on May 26, 2015. After review, the Director of Assessment and School Improvement granted approval to conduct the study on June 18, 2015 (see Appendix C). The researcher initiated the process to receive permission from Baker University by submitting an Institutional Review Board (IRB) request to Baker University on June 2, 2015 (see Appendix D). The Baker University IRB committee approved the study on June 15, 2015 (see Appendix D).

After receiving approval for the study from both the suburban school district and Baker University, the suburban school district's assessment department supplied a data set to the researcher that included cohort data for students continuously enrolled in the same Title I or non-Title I school starting with the 2010-2011 school year and continuing through the 2013-2014 school year. This department protected the identities of the students by assigning random student numbers. Information including student gender, student socio-economic status, and minority or non-minority status was also provided as student demographic information. The following academic achievement data was provided for each student: kindergarten beginning of the year (BOY) assessment data to include: uppercase letter identification, lowercase letter identification, consonant sound identification, kindergarten end of year (EOY) reading level, and third grade end of year (EOY) reading level.

### **Data Analysis and Hypothesis Testing**

At the time the data were collected, it was organized in a Microsoft Excel spreadsheet and was inspected for importation into IBM® SPSS® Statistics Faculty Pack

22 for Windows. The quantitative analysis focused on six research questions. Each question is presented below with the hypothesis followed by the hypothesis testing method.

**RQ1.** What is the literacy skill level of students as they enter full-day kindergarten?

Descriptive statistics were calculated to provide an examination of early literacy skills when students entered full-day kindergarten.

**RQ2.** To what extent is literacy skill level impacted by gender, socio-economic status, and student minority or non-minority status?

Descriptive statistics were created to provide an examination of early literacy skills when students entered full-day kindergarten analyzed by student gender, student socio-economic status, and student minority or non-minority status.

**RQ3.** To what extent is there a difference in the change in reading level, as measured on the Qualitative Reading Inventory, from kindergarten to third grade between students who attended full-day kindergarten at a Title I school and students who attended full-day kindergarten at a non-Title I school?

**H1.** There is a difference in the change in reading level, as measured on the Qualitative Reading Inventory, from kindergarten to third grade between students who attended full-day kindergarten at a Title I school and students who attended full-day kindergarten at a non-Title I school.

A chi-square test of independence was conducted to address RQ3. The observed frequencies were compared to those expected by chance. The level of significance was set at .05.



**RQ4.** To what extent is the difference in the change in reading level, as measured on the Qualitative Reading Inventory, from kindergarten to third grade between students who attended full-day kindergarten at a Title I school and students who attended full-day kindergarten at a non-Title I school affected by student gender?

**H2.** There is a difference in change in reading level, as measured on the Qualitative Reading Inventory, from kindergarten to third grade between students who attended full-day kindergarten at a Title I school and students who attended full-day kindergarten at a non-Title I school is affected by gender.

A chi-square test of independence was conducted to address RQ4. The observed frequencies were compared to those expected by chance. The level of significance was set at .05.

**RQ5.** To what extent is the difference in the change in reading level, as measured on the Qualitative Reading Inventory, from kindergarten to third grade between students who attended full-day kindergarten at a Title I school and students who attended full-day kindergarten at a non-Title I school affected by student socio-economic status?

**H3.** There is a difference in change in reading level, as measured on the Qualitative Reading Inventory, from kindergarten to third grade between students who attended full-day kindergarten at a Title I school and students who attended full-day kindergarten at a non-Title I school is affected by socio-economic status.

A chi-square test of independence was conducted to address RQ5. The observed frequencies were compared to those expected by chance. The level of significance was set at .05.

**RQ6.** To what extent is the difference in the change in reading level, as measured on the Qualitative Reading Inventory, from kindergarten to third grade between students who attended full-day kindergarten at a Title I school and students who attended full-day kindergarten at a non-Title I school affected by student minority or non-minority status?

**H4.** There is a difference in the change in reading level, as measured on the Qualitative Reading Inventory, from kindergarten to third grade between students who attended full-day kindergarten at a Title I school and students who attended full-day kindergarten at a non-Title I school is affected by student minority or non-minority status.

A chi-square test of independence was conducted to address RQ6. The observed frequencies were compared to those expected by chance. The level of significance was set at .05.

### **Limitations**

According to Lunenburg and Irby (2008), “limitations are factors that may have an effect on the interpretation of the findings or the generalizability of the results” (p. 133). While the researcher cannot control limitations, Lunenburg and Irby (2008) explained the importance of providing the reader with information on limitations to avoid misinterpretation of the research findings. Limitations for this study included:

1. Prior formal educational opportunities some students received were not addressed.
2. Any additional reading support provided at the Title I schools was not addressed.
3. Student reading levels may be impacted by many factors including home support, prior schooling experiences, native language, and general ability.

4. Instructional techniques, classroom and school climate, teachers' perceptions, and teachers' attitudes may vary from school to school within the suburban school district.
5. The testing environment used for administering the Early Literacy Skills Assessment and QRI assessment may vary slightly from school to school.

### **Summary**

This study was a quasi-experimental quantitative design using correlational research methods. This chapter addressed the purpose of the study and outlined the methods used including the research design, population and sample, sampling procedures, instrumentation, data collection procedures, and data analysis and hypothesis testing. A purposive sample of all of the students in a suburban school district included in the study and the conditions for participation were outlined. Instrumentation, including measurement, reliability and validity information, were examined followed by a description of the data collection procedures and methods of data analysis. The results of the quantitative data analysis for this study are presented in chapter four.

## **Chapter Four**

One purpose of this study was to determine what the literacy skill level of all students was when they entered full-day kindergarten. Also, literacy skill level was analyzed to determine how it was impacted by gender, socio-economic status, and student minority or non-minority status. An additional purpose of this study was to compare change in reading level between full-day kindergarten and third grade between students who attended full-day kindergarten at Title I school compared to students who attended full-day kindergarten in a non-Title I school in a Midwest suburban school district. This study measured the change in reading level using the QRI. The students in this study attended the same Title I or non-Title I elementary school from kindergarten through third grade. An explanation of the descriptive statistics for the sample and the results of the data analysis for each hypothesis associated with the research questions are included in chapter four.

### **Descriptive Statistics**

Lunenburg and Irby (2008) defined descriptive statistics as the “mathematical procedures for organizing and summarizing numerical data” (p. 63). The sample for this study included students who were continuously enrolled in the same Title I or non-Title I elementary school from kindergarten through third grade during the 2010-2011 school year through the 2013-2014 school year. Also, the students included in this study all participated in full-day kindergarten.

Nine hundred sixty-eight students were included in this study. All 968 students were assessed using the Literacy Skills Assessment upon entry to kindergarten. Of those students, 493 were female, and 475 were male. With 73 possible points on the

assessment, the minimum was 24 points and the maximum was 73 points. Also, 54 students scored 70 points or less, 31 students scored 71 points, 31 students scored 72 points, and 848 students scored a perfect 73 points.

Table 2 summarizes the Literacy Skill Assessment data to include the mean score, standard deviation, minimum score and maximum score based on student gender. The mean score was very similar for females and males, and the maximum score was identical for females and males. However, the standard deviation and minimum score was considerably different for males and females.

Table 2

*Literacy Skills Assessment scores by gender*

	<i>N</i>	<i>M</i>	<i>SD</i>	Min	Max
Female	493	72.61	1.76	54	73
Male	476	72.14	4.16	24	73

Table 3 summarizes the Literacy Skills Assessment data to include the number, mean score, standard deviation, minimum score, and maximum score based on student socio-economic status. The mean score was similar for full pay, reduced pay, and free students and the maximum score was the same. However, the standard deviation and the minimum score were different.

Table 3

*Literacy Skills Assessment scores by socio-economic status*

	<i>N</i>	<i>M</i>	<i>SD</i>	Min	Max
Full Pay	642	72.61	2.71	24	73
Reduced	61	72.41	3.48	46	73
Free	230	71.71	4.07	38	73

Table 4 summarizes the Literacy Skill Assessment data to include the number, mean score, standard deviation, minimum score, and maximum score based on student minority or non-minority status. The mean score was similar for minority and non-minority students, and the maximum score was the same for students in both groups. However, the standard deviation and minimum score were different for minority and non-minority students.

Table 4

*Literacy Assessment Scores by minority and non-minority*

	<i>N</i>	<i>M</i>	<i>SD</i>	Min	Max
Minority	295	71.89	4.28	38	73
Non-Minority	638	72.60	2.48	24	73

**Hypothesis Testing**

The results of the hypothesis testing to address research questions RQ3, RQ4, RQ5, and RQ6 are examined in this section. Each research question is followed by its corresponding hypothesis test and results of the test.

**RQ3.** To what extent is there a difference in the change in reading level, as measured on the Qualitative Reading Inventory, from kindergarten to third grade between students who attended full-day kindergarten at a Title I school and students who attended full-day kindergarten at a non-Title I school?

**H1.** There is a difference in the change in reading level, as measured on the Qualitative Reading Inventory, from kindergarten to third grade between students who attended full-day kindergarten at a Title I school and students who attended full-day kindergarten at a non-Title I school.

A  $\chi^2$  test of independence was conducted to address RQ3. The observed frequencies were compared to those expected by chance. The level of significance was set at .05. The results of the  $\chi^2$  test of independence indicated a statistically significant difference between the observed and expected values,  $\chi^2 = 53.771$ ,  $df = 2$ ,  $p = .000$ . See Table 5 for the observed and expected frequencies. The observed frequency for students who attended the non-Title I kindergarten and who did maintain the same level ( $n = 545.0$ ) was higher than the expected frequency ( $n = 502.0$ ). The observed frequency for students who attended the Title I kindergarten and who did decrease one or two levels ( $n = 27.0$ ) was higher than the expected frequency ( $n = 15.4$ ). The observed frequency for students who attended the Title I kindergarten and who did increase one or two levels ( $n = 83.0$ ) was higher than the expected frequency ( $n = 51.6$ ). Students who attended the non-Title I kindergarten tended not to change level by the end of third grade. Students who attended Title I kindergarten tended to increase or decrease at least one level by the end of third grade. Of the 622 kindergarten students who attended a Title I school, a higher number increased reading level than decreased reading level.

Table 5

*Observed and Expected Frequencies for Hypothesis 1*

Level Change		Kindergarten Type	
		Title I	Non-Title I
Decreased	Observed	16.0	27.0
	Expected	27.6	15.4
Maintained	Observed	545.0	237.0
	Expected	502.0	280.0
Increased	Observed	61.0	83.0
	Expected	92.4	51.6

**RQ4.** To what extent is the difference in the change in reading level, as measured on the Qualitative Reading Inventory, from kindergarten to third grade between students who attended full-day kindergarten at a Title I school and students who attended full-day kindergarten at a non-Title I school affected by gender?

**H2.** There is a difference in the change in reading level, as measured on the Qualitative Reading Inventory, from kindergarten to third grade between students who attended full-day kindergarten at a Title I school and students who attended full-day kindergarten at a non-Title I school affected by gender.

To address RQ4, the sample data was disaggregated by gender. A  $\chi^2$  test of independence was conducted to test H2 using sample data for the female students. The observed frequencies were compared to those expected by chance. The level of significance was set at .05. The results of the  $\chi^2$  test of independence indicated a statistically significant difference between the observed and expected values,  $\chi^2 = 26.264$ ,  $df = 2$ ,  $p = .000$ . See Table 6 for the observed and expected frequencies. The observed



frequency for female students who attended the non-Title I kindergarten and who maintained the same level ( $n = 270.0$ ) was higher than the expected frequency ( $n = 248.8$ ). The observed frequency for students who attended the Title I kindergarten and who did decrease one or two levels ( $n = 18.0$ ) was higher than the expected frequency ( $n = 9.7$ ). The observed frequency for students who attended the Title I kindergarten and who did increase one or two levels ( $n = 39.0$ ) was higher than the expected frequency ( $n = 26.1$ ). Female students who attended the non-Title I kindergarten tended not to change level by the end of third grade. Female students who attended Title I kindergarten tended to increase or decrease least one level by the end of third grade. Of the 309 female kindergarten students who attended a Title I school, a higher number increased reading level than decreased reading level.

Table 6

*Observed and Expected Frequencies Disaggregated by Gender for Hypothesis 2  
(Females)*

Level Change		Kindergarten Type	
		Title I	Non-Title I
Decreased	Observed	8.0	18.0
	Expected	16.3	9.7
Maintained	Observed	270.0	127.0
	Expected	248.8	148.2
Increased	Observed	31.0	39.0
	Expected	43.9	26.1

A second  $\chi^2$  test of independence was conducted to test H2 using sample data for the male students. The observed frequencies were compared to those expected by

chance. The level of significance was set at .05. The results of the  $\chi^2$  test of independence indicated a statistically significant difference between the observed and expected values,  $\chi^2 = 29.03$ ,  $df = 2$ ,  $p = .000$ . See Table 7 for the observed and expected frequencies. The observed frequency for male students who attended the non-Title I kindergarten and who did maintain the same level ( $n = 275.0$ ) was higher than the expected frequency ( $n = 253.2$ ). The observed frequency for students who attended the Title I kindergarten and who did decrease one or two levels ( $n = 9.0$ ) was higher than the expected frequency ( $n = 5.8$ ). The observed frequency for students who attended the Title I kindergarten and who did increase one or two levels ( $n = 44.0$ ) was higher than the expected frequency ( $n = 25.3$ ). Male students who attended the non-Title I kindergarten tended to not change level by the end of third grade. Male students who attended Title I kindergarten tended to increase at least one level by the end of third grade. Of the 313 male kindergarten students who attended a Title I school, a higher number increased reading level than decreased reading level.

Table 7

*Observed and Expected Frequencies Disaggregated by Gender for Hypothesis 2 (Males)*

Level Change	Kindergarten Type		
		Title I	Non-Title I
Decreased	Observed	8.0	9.0
	Expected	11.2	5.8
Maintained	Observed	275.0	110.0
	Expected	253.2	131.8
Increased	Observed	30.0	44.0
	Expected	48.7	25.3

**RQ5.** To what extent is the difference in the change in reading level, as measured on the Qualitative Reading Inventory, from kindergarten to third grade between students who attended full-day kindergarten at a Title I school and students who attended full-day kindergarten at a non-Title I school affected by student socio-economic status?

**H3.** There is a difference in the change in reading level, as measured on the Qualitative Reading Inventory, from kindergarten to third grade between students who attended full-day kindergarten at a Title I school and students who attended full-day kindergarten at a non-Title I school affected by socio-economic status.

To address RQ5, the sample data was disaggregated by socio-economic status. A  $\chi^2$  test of independence was conducted to test H3 using sample data for the students who qualified for free lunch. The observed frequencies were compared to those expected by chance. The level of significance was set at .05. The results of the  $\chi^2$  test of independence indicated a marginally significant difference between the observed and expected values,  $\chi^2 = 6.004$ ,  $df = 2$ ,  $p = .050$ . See Table 8 for the observed and expected frequencies. The observed frequency for students who qualified for free lunch, attended the non-Title I kindergarten, and who did maintain the same level ( $n = 47.0$ ) was higher than the expected frequency ( $n = 39.8$ ). The observed frequency for students who qualified for free lunch, attended the Title I kindergarten, and who did decrease one or two levels ( $n = 20.0$ ) was higher than the expected frequency ( $n = 16.5$ ). The observed frequency for students who qualified for free lunch, attended the Title I kindergarten, and who did increase one or two levels ( $n = 48.0$ ) was higher than the expected frequency ( $n = 44.3$ ). Students who qualified for free lunch and attended non-Title I kindergarten tended not to change level by the end of third grade. Students who qualified for free

lunch and attended Title I kindergarten tended to increase or decrease at least one level by the end of third grade.

Table 8

*Observed and Expected Frequencies Disaggregated by Socio-Economic Status for Hypothesis 3 (Free Lunch)*

Level Change		Kindergarten Type	
		Title I	Non-Title I
Decreased	Observed	2.0	20.0
	Expected	5.5	16.5
Maintained	Observed	47.0	112.0
	Expected	39.8	119.3
Increased	Observed	11.0	48.0
	Expected	14.8	44.3

A second  $\chi^2$  test of independence was conducted to test H3 using sample data for the students who qualify for reduced lunch. The observed frequencies were compared to those expected by chance. The level of significance was set at .05. The results of the  $\chi^2$  test of independence indicated there was not a statistically significant difference between the observed and expected values,  $\chi^2 = .305$ ,  $df = 2$ ,  $p = .858$ . See Table 9 for the observed and expected frequencies. This hypothesis test was potentially compromised by the fact that three cells in the table have expected counts less than 5.

Table 9

*Observed and Expected Frequencies Disaggregated by Socio-Economic Status for Hypothesis 3 (Reduced Lunch)*

Level Change	Kindergarten Type		
		Title I	Non-Title I
Decreased	Observed	2.0	2.0
	Expected	1.5	2.5
Maintained	Observed	17.0	30.0
	Expected	17.4	29.6
Increased	Observed	4.0	7.0
	Expected	4.1	6.9

A third  $\chi^2$  test of independence was conducted to test H3 using sample data for the students who paid full price for lunch. The observed frequencies were compared to those expected by chance. The level of significance was set at .05. The results of the  $\chi^2$  test of independence indicated a statistically significant difference between the observed and expected values,  $\chi^2 = 20.441$ ,  $df = 2$ ,  $p = .000$ . See Table 10 for the observed and expected frequencies. The observed frequency for students who paid full price attended the non-Title I kindergarten, and who did maintain the same level ( $n = 481.0$ ) was higher than the expected frequency ( $n = 465.5$ ). The observed frequency for students who paid full price, attended the Title I kindergarten, and who did increase one or two levels ( $n = 28.0$ ) was higher than the expected frequency ( $n = 14.2$ ). Students who paid full price and attended non-Title I kindergarten tended not to change level by the end of third grade. Students who paid full price and attended Title I kindergarten tended to increase at least one level by the end of third grade.

Table 10

*Observed and Expected Frequencies Disaggregated by Socio-Economic Status for Hypothesis 3 (Full Pay)*

Level Change		Kindergarten Type	
		Title I	Non-Title I
Decreased	Observed	12.0	5.0
	Expected	13.7	3.3
Maintained	Observed	481.0	95.0
	Expected	465.5	110.5
Increased	Observed	46.0	28.0
	Expected	59.8	14.2

**RQ6.** To what extent is the difference in the change in reading level, as measured on the Qualitative Reading Inventory, from kindergarten to third grade between students who attended full-day kindergarten at a Title I school and students who attended full-day kindergarten at a non-Title I school affected by student minority or non-minority status?

**H4.** There is a difference in the change in reading level, as measured on the Qualitative Reading Inventory, from kindergarten to third grade between students who attended full-day kindergarten at a Title I school and students who attended full-day kindergarten at a non-Title I school affected by student minority or non-minority status.

To address RQ6, the sample data was disaggregated by student minority and non-minority status. A  $\chi^2$  test of independence was conducted to test H4 using sample data for the minority students. The observed frequencies were compared to those expected by chance. The level of significance was set at .05. The results of the  $\chi^2$  test of independence indicated a statistically significant difference between the observed and

expected values,  $\chi^2 = 11.027$ ,  $df = 2$ ,  $p = .000$ . See Table 11 for the observed and expected frequencies. The observed frequency for students who attended the non-Title I kindergarten and who did maintain the same level ( $n = 103.0$ ) was higher than the expected frequency ( $n = 90.5$ ). The observed frequency for students who attended the Title I kindergarten and who did decrease one or two levels ( $n = 17.0$ ) was higher than the expected frequency ( $n = 12.7$ ). The observed frequency for students who attended the Title I kindergarten and who did increase one or two levels ( $n = 43.0$ ) was higher than the expected frequency ( $n = 34.7$ ). Minority students who attended the non-Title I kindergarten tended not to change level by the end of third grade. Minority students who attended Title I kindergarten tended to increase or decrease at least one level by the end of third grade. Of the 125 minority kindergarten students who attended a Title I school, a higher number increased reading level than decreased reading level.

Table 11

*Observed and Expected Frequencies Disaggregated by Minority for Hypothesis 4*

Level Change		Kindergarten Type	
		Title I	Non-Title I
Decreased	Observed	5.0	17.0
	Expected	9.3	12.7
Maintained	Observed	103.0	112.0
	Expected	90.5	124.5
Increased	Observed	17.0	43.0
	Expected	25.3	34.7

A second  $\chi^2$  test of independence was conducted to test  $H4$  using sample data for the non-minority students. The observed frequencies were compared to those expected

by chance. The level of significance was set at .05. The results of the  $\chi^2$  test of independence indicated a statistically significant difference between the observed and expected values,  $\chi^2 = 29.0$ ,  $df = 2$ ,  $p = .000$ . See Table 12 for the observed and expected frequencies. The observed frequency for students who attended the non-Title I kindergarten and who did maintain the same level ( $n = 428.0$ ) was higher than the expected frequency ( $n = 406.7$ ). The observed frequency for students who attended the Title I kindergarten and who did decrease one or two levels ( $n = 9.0$ ) was higher than the expected frequency ( $n = 4.9$ ). The observed frequency for students who attended the Title I kindergarten and who did increase one or two levels ( $n = 37.0$ ) was higher than the expected frequency ( $n = 19.8$ ). Non-minority students who attended the non-Title I kindergarten tended not to change level by the end of third grade. Non-minority students who attended Title I kindergarten tended to increase at least one level by the end of third grade. Of the 313 male kindergarten students who attended a Title I school, a higher number increased reading level than decreased reading level. Of the 483 non-minority kindergarten students who attended a Title I school, a higher number increased reading level than decreased reading level.



Table 12

*Observed and Expected Frequencies Disaggregated by Non-Minority for Hypothesis 4*

Level Change	Kindergarten Type		
		Title I	Non-Title I
Decreased	Observed	11.0	9.0
	Expected	15.1	4.9
Maintained	Observed	428.0	110.0
	Expected	406.7	131.3
Increased	Observed	44.0	37.0
	Expected	61.2	19.8

### **Additional Analyses**

With the data of the study being so significant, it was important to do additional data analysis to show that that outcome of the students attending non-Title I schools was not driven by the fact that the students were already much higher when they entered kindergarten. The first additional data point analyzed was the difference of score between Title I and non-Title I students on the beginning of the year Literacy Skills Assessment. Table 13 shows the difference between the two groups of students. A higher percentage of non-Title I students scored a perfect score than Title I students. A higher percentage of Title I students scored a 72 than non-Title I students. A higher percentage of Title I students scored a 71 than non-Title I students. Lastly, a higher percentage of Title I students scored a 70 or lower on the beginning of the year skills assessment.

Table 13

*Score on Beginning of the Year Kindergarten Literacy Skills Assessment (Title I and Non-Title I)*

Level Pre K	Non-Title I	Non-Title I %	Title-I	Title-1 %
73.00	566	91.0%	282	81.5%
72.00	13	2.1%	20	5.8%
71.00	16	2.6%	15	4.3%
70.00 & under	27	4.3%	29	8.4%
Total	622	100.0%	346	100.0%

Because the results of the analysis were so significant, it was also important to disaggregate end of year reading level in kindergarten by students attending a Title I school and those attending a non-Title I school. Table 14 shows this difference for Title I and non-Title I students. By the end of kindergarten, there was a much higher percentage of non-Title I students reading on grade level than Title I students. Perhaps the data with the largest impact was the percentage of Title I students reading below level compared to the percentage of non-Title I students reading below level. The percentage of Title I students reading below grade level was about three times the amount of non-Title I students reading below grade level.

Table 14

*End of Year Kindergarten Reading Level (Title I and Non-Title I)*

Level Post K	Non-Title I	Non-Title I %	Title I	Title I %
Above	487	78.3%	184	53.0%
On	55	8.8%	36	10.4%
Below	80	12.9%	127	36.6%
Total	622	100.0%	347	100.0%

**Summary**

Chapter four began with an introduction and included descriptive statistics to the overall sample size analyzed for this research. Next the chapter included specific descriptive statistics related to the beginning of kindergarten Literacy Skills Assessment. Included were disaggregated data related to student gender, socio-economic status, and minority status. For each of these areas, descriptive statistics included number tested, mean score, standard deviation, minimum score, and maximum score.

Results related to the research questions revealed that students enrolled in full-day kindergarten at a Title I school were more likely to change reading level between kindergarten and third grade than their peers who were enrolled in full-day kindergarten at a non-Title I school. A higher number of females attending a non-Title I school than expected remained at the same reading level from kindergarten to third grade. A larger number of females attending a Title I school than expected either increased or decreased

reading level by third grade. For males, the pattern is exactly the same with more reading level change for students attending school at a Title I school.

This change was similar when the data were analyzed by students who qualify for free lunch and those who do not qualify for free lunch. Students at non-Title I sites tended not to change as expected compared to the students at Title I sites, who tended to increase or decrease levels more than what was expected. The change in reading level from kindergarten to third grade was not statistically significant for students receiving reduced pay lunch.

When the data were analyzed for minority students and non-minority students, Students attending non-Title I schools tended to stay at the same level and did not increase or decrease as much as expected. Conversely, minority students at Title I schools tended to change levels more than expected. The same was true for non-minority students as they changed levels more than was expected. The study revealed that students at Title I schools were much more likely than students at non-Title I schools to change reading levels between kindergarten and third grade.

The interpretations of the findings and recommendations for future study are included in chapter five. This same chapter contains the study summary including the overview of the problem, the purpose statement and research questions, the review of methodology, and major findings. Additionally, a discussion of the findings related to the literature follows the study summary. The chapter concludes with implications for actions, recommendations for future research, and concluding statements.

## Chapter Five

### Interpretation and Recommendations

Results of the data analysis for this study were written in the previous chapter. This chapter returns to the overview of the problem, the purpose statement and research questions, the methodology, and the major findings related to this research. An explanation of the findings related to the literature follows. Chapter five concludes with implications for actions, recommendations for future research designed to enhance or extend the findings of this study, and concluding remarks.

#### Study Summary

The subsequent sections provide a summary of the study. The summary includes an overview of the problem concerning the change in reading level of students who attended full-day kindergarten through third grade at a Title I or a non-Title I school. The following section restates the purpose of the study and related research questions. The summary finishes with a review of the methodology and the study's major findings.

**Overview of the Problem.** School districts across the United States are working to find ways to eliminate the difference in reading levels among students. This may be a concern within the same school system. In the suburban school system utilized for this study, educational professionals have tried many strategies to limit these differences.

School systems are working throughout a student's entire school career to improve reading levels. However, it is common for educators to cite being able to read on grade level by third grade as a crucial benchmark to predict future difficulties in school, high school graduation, and challenges later in life (Fiester, 2013). One of the

programs Fiester (2013), suggested for school districts was full-day kindergarten programming. The suburban school district used for this research needed to determine if the intervention of full-day kindergarten at Title I elementary schools had a positive impact on student reading levels compared to the students who participated in full-day kindergarten at a non-Title I school by the time students were in third grade.

**Purpose Statement and Research Questions.** One purpose of the study was to determine the literacy skill level of all students as they entered full day kindergarten. Also, the literacy skill level was analyzed to determine how it was impacted by gender, socio-economic status, and student minority or non-minority. Further, differences in the literacy skill level between students attending Title I and non-Title I schools was studied.

An additional purpose of this study was to determine whether or not the intervention of full-day kindergarten at Title I schools in a suburban school district impacted reading levels by the time students were in third grade. This impact was measured using QRI. The change in reading level by third grade as measured using the QRI was also analyzed by gender, socio-economic status, and student minority or non-minority status.

**Review of the Methodology.** The groups of students used for this research were students enrolled in kindergarten, first, second, and third grade in one suburban school district in the Midwest. The data of all students continuously enrolled in the suburban school district attending the same Title I or non-Title I schools from kindergarten through third grade were analyzed for this study. For this study, performance levels were analyzed in the area of reading at the beginning and end of kindergarten and the end of third grade. The suburban school district's assessment department provided the student

achievement levels for the research. The researcher calculated chi-square tests to determine the strength and direction of the relationships between the pairs of variables for students attending Title I and non-Title I schools and the students' change in reading level from kindergarten to third grade.

**Major Findings.** Results related to the research questions revealed that there is a statistically significant relationship between attending full-day kindergarten through third grade at a Title I or non-Title I elementary school in the school district used for this study. When the data were disaggregated by student gender, both males and females who attended full-day kindergarten through third grade at Title I schools tended to increase or decrease reading levels by third grade more than expected. More of these students tended to increase reading level than decrease reading level. Students, both male and female, who attended a non-Title I elementary school tended to stay at the same reading level from full-day kindergarten through third grade and did not show the expected change in reading level.

The results were similar when the data were disaggregated by student socio-economic status. However, the analysis for students receiving free lunch was marginally significant. Students who received free lunch and attended a Title I school from full-day kindergarten through third grade tended to change reading levels more than expected. Students receiving free lunch who attended a Title I school tended to increase reading level by third grade. Students who received free lunch and attended a non-Title I school did not show the expected change. More of these students stayed at the same reading level from full-day kindergarten through third grade.

There was a statistically significant relationship between students who paid full price lunch and attended a Title I school from full-day kindergarten through third grade. Full pay students who attended full-day kindergarten through third grade at a Title I school tended to increase or decrease reading levels more than expected. These students tended to increase reading level by third grade. Full pay students who attended full-day kindergarten through third grade at a non-Title I school tended not to change reading level as much as expected. When the data were analyzed for students who received reduced lunch, there was not a statistically significant relationship found.

When the data were disaggregated by student minority status and analyzed, a statistically significant relationship was found. Minority students who attended full-day kindergarten through third grade at a Title I school tended to change reading level more than expected. These students tended to increase reading level. Minority students who attended full-day kindergarten through third grade at a non-Title I school did not change reading level as expected. These students tended to stay at the same reading level from full-day kindergarten through third grade.

The same pattern held true for non-minority students who attended full-day kindergarten through third grade at a Title I school. These students tended to increase or decrease reading level by third grade more than expected. These students tended to increase reading level. Non-minority students who attended full-day kindergarten through third grade at a non-Title I school tended not to change reading level as much as expected by third grade. These students tended to stay at the same reading level from full-day kindergarten through third grade. This study revealed that there was a



statistically significant relationship for change in reading level when students attended a Title I or non-Title I elementary school from full-day kindergarten through third grade.

The pattern was so strong through all of the hypotheses testing that additional descriptive analysis was conducted. These analysis were conducted to establish that the distribution of students' reading ability attending Title I schools or non-Title I schools was similar from the beginning. Since there were significant differences in reading levels in kindergarten between students attending Title I schools and non-Title I schools the change in reading level by third grade is meaningful.

### **Findings Related to the Literature**

This section examines this study's findings as they relate to the literature regarding outcomes for students who attended a Title I school from full-day kindergarten through third grade. The research conducted for this study specifically focused on the change in reading level between kindergarten and third grade for students attending the same Title I or non-Title I school from full-day kindergarten through third grade. There has been significant research related to full-day kindergarten and the importance of reading on grade level by third grade.

Research by Costa (2005/2006) supported the notion that full-day kindergarten was "especially beneficial to children from low socio-economic or educationally disadvantaged backgrounds" (p. 16). This study supported this claim, as students who received free lunch and attended Title I schools tended to increase reading level by the time they were in third grade. Additionally, full-day kindergarten at Title I schools appeared to be beneficial to all students. Findings also suggested that full-day kindergarten puts students on a positive trajectory to increase reading levels as transitions

are minimized between kindergarten and first grade (Schroeder, 2007). The current study appeared also to support this research, as students who attended full-day kindergarten at Title I schools tended to increase reading level by third grade.

Past studies have shown that full-day kindergarten can make a difference for all students. A specific study in Montana showed that four years after full-day kindergarten was implemented there was an increase of 11% in the number of students reading on grade level by third grade (Carnes & Albrect, 2007). It is not clear if the current study would coincide with the research completed in Montana. However, in this study, it appeared that full-day kindergarten did make a positive impact for most students attending full-day kindergarten at a Title I school but did not appear to make the same impact for students who attended full-day kindergarten at a non-Title I school. As the students attending full-day kindergarten through third grade at non-Title I schools did not show the expected change in reading level.

Jensen (2009) wrote, “Many school systems across the United States have been very successful and have had students who have outperformed the statistics that awaited them” (p. 54). Additionally, it was noted that schools must use all instructional resources, like full-day kindergarten, and must have a genuine belief that all students can learn at high levels (Jensen, 2009). The results of this study show that the Title I schools in the district used for this study are implementing practices that have made a positive impact on student reading levels by the time the students are in third grade.

Past studies continually noted the importance of students reading on grade level by third grade. One such study examined the relationship of reading on grade level by third grade and dropping out of high school. This study revealed that students who are

not reading on grade level by third grade were four times more likely to drop out of high school instead of graduating (Rose & Schimke, 2012). While the current study did not consider graduation and dropout rates, it did show that students who attended full-day kindergarten through third grade at a Title I school tended to increase reading level over the four years analyzed. Thus, if the data in the school district studied is congruent with other researched data, the graduation and dropout rate for students who attended a Title I school should be impacted in a positive way.

Research indicated the difference in reading levels between children of high socio-economic backgrounds, and low socio-economic backgrounds continue to exist in the United States (Reardon, 2001). In the district used for this study, it appears that there is less of a difference in reading levels of students qualifying for free lunch, reduced lunch, and full pay lunch by third grade for all students who attended full-day kindergarten through third grade at a Title I school. All students, free lunch, reduced lunch, and full pay lunch, who attended full-day kindergarten through third grade at a non-Title I school tended not to change levels as expected. Students who attended Title I schools were more consistent with past research conducted throughout the United States and changed reading levels more than expected.

## **Conclusions**

This section provides conclusions derived from the current study regarding the change in reading level between kindergarten and third grade for students who attended full-day kindergarten at a Title I school or at a non-Title I school. Implications for action and recommendations for further research are included. Additionally, concluding remarks complete this section.

**Implications for Action.** Based on this study, there appears to be a strong relationship between attending full-day kindergarten through third grade at Title I schools. Students who attended Title I schools tended to change reading level by third grade more than expected. The majority of them increased reading level from kindergarten through third grade.

Because of the information derived from the present study, it is imperative that district leaders in school districts across the United States look at the supports being provided at Title I schools. School districts, like the one used in this study, with both Title I and non-Title I schools, need to consider what supports, strategies, and practices are in place for students in both Title I and non-Title I schools. This study showed that students attending non-Title I schools did not change reading level as expected between full-day kindergarten and third grade. School district leaders need to consider if some of the supports, strategies, and practices that are utilized in Title I schools need to be utilized in non-Title I schools. It is possible that if some of the supports, strategies, and practices are utilized in non-Title I schools, the students attending those schools may show the expected change in reading level from full-day kindergarten through third grade.

The present study also has implications for building-level leaders. Building level leaders must be aware that some of the supports, strategies, and practices being utilized in Title I schools may offer potential in non-Title I schools. Building leaders should be made aware that, in this study, students who were full pay for lunch and attended a Title I school tended to change reading level more than expected from full-day kindergarten through third grade. This change in reading level was typically an improvement. Building level leaders may immediately go to the additional personnel supports offered at

Title I schools as a reason for this improvement, however, there may be some differences in general education classroom climate, supports, and teacher beliefs that perhaps should be addressed or considered.

The last group that should examine the results of the current study is parents. Unfortunately, there may be times when parents choose not to send their children to a Title I school because of the Title I label. If parents knew that their children would have a statistically higher chance of improving their reading level from full-day kindergarten to third grade at a Title I school, they may feel more comfortable sending their children to that school.

**Recommendations for Future Research.** The purpose of this study was to determine if there was a relationship between the change in reading level from full-day kindergarten through third grade for students attending Title I and non-Title I elementary schools in a suburban school district. While there is considerable research related to full-day kindergarten and reading on grade level by third grade, additional research should be considered. This study was beneficial in widening the knowledge base; however, there are several recommendations for future research, including the same study in an additional school district.

The current study only analyzed the change in reading level. Replicating the study in the area of math would be beneficial for district leaders, building leaders, teachers, and parents of students. The same patterns could hold true for math. However, there appears to be less research available in this area, as most of the national conversation has centered on reading.

In addition to replicating the current study by focusing on math, it is also recommended that the current study be replicated by drilling down to the school level. By comparing a single Title I school to a single non-Title I school, a researcher may have the ability to draw more direct conclusions regarding the supports, strategies and practices in place in a Title I school. This additional research could facilitate change in both Title I and non-Title I schools.

There may be important data to be considered by expanding the current study to follow students who attended full-day kindergarten at Title I schools and non-Title I schools through their entire K-12 school career. Additional information could be obtained by expanding the current study beyond third grade. It is suggested that additional reading level scores be analyzed at fifth, eighth, and twelfth grades to determine if the pattern shown in K-3 continues to be true as students progress through school.

While the number of students participating in full-day kindergarten is increasing in the United States, there are still a considerable number of students participating in half-day kindergarten. A similar study should be conducted to determine if there is a relationship regarding the reading level of students who attended full-day kindergarten as compared to half-day kindergarten. Analyzing the reading level by third grade would be important to this research.

Lastly, it would be useful for the school district used in this research to study graduation and dropout rates of students who spent their entire school careers in either a Title I or non-Title I school. Studies have shown that reading on grade level by third grade is an important predictor of graduation and dropout rates. However, it would be

important to see if this information would hold true in the particular suburban school district used for this study.

**Concluding Remarks.** The results of the current study contributed to the body of work completed by earlier researchers relating to the change in reading level from kindergarten through third grade. This study showed that students who attended full-day kindergarten through third grade at Title I schools changed reading levels more than expected and that students who attended full-day kindergarten through third grade at non-Title I schools changed reading levels less than expected. Additionally, students who attended full-day kindergarten through third grade at a Title I school tended to increase reading level by third grade. The data indicated that in most cases there was a statistically significant relationship between attending a Title I school and changing reading level, usually increasing, by the time a student was in third grade. The only group that was not statistically significant was the group of students who received reduced lunch.

As indicated by research shared in chapter two, it is critical that students read on grade level by third grade. In the suburban school district used for this study, it appeared that most students read on grade level by third grade. However, it also appeared that the students attending non-Title I schools did not change reading level as expected. This is concerning as these students are not typically progressing beyond the reading level they demonstrated at the end of kindergarten. Meaning that if a kindergarten student was reading on grade level at the end of kindergarten, that same student more than likely still read on grade level by the end of third grade. Not only do students who attend Title I schools deserve to progress in their reading level during their early school years, but the

students who attend non-Title I schools deserve to progress in reading level during their primary years.

This study supported previous research that full-day kindergarten is important for students who are considered at-risk because of their qualification for free or reduced lunch and that providing full-day kindergarten at Title I schools tended to have a positive impact on reading level by the time students were in third grade. Furthermore, district leaders, building level leaders, teachers and parents, need to take a close look at the practices that are in place to support all students, not only the practices that are in place to support the students who attend Title I schools or the students who are at-risk.



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## Appendices



**Appendix A: District Internal Research Application Request**

Internal

## Public Schools Research Proposals

The Board of Education approves research projects for the purpose of improving educational practice. All research projects will be approved by the Superintendent and/or his designee prior to implementation.

### ADMINISTRATIVE PROCEDURE

All individuals wishing to conduct research in public schools must follow these designated procedures.

1. The research proposal with the completed Research Application Request (starting on page 2 of this document) is submitted to the Superintendent, Instructional Resource Center, and 14090
2. Each application is reviewed at the district level, by gaining input from various personnel, to determine alignment with district philosophy, the district strategic plan and participant responsibilities. This process will take at least two (2) weeks.
3. After review, the research will be approved, not approved, or approved with restrictions. At the conclusion of the study, a copy of the results of the research will be provided to the district.

Each proposal should meet the following criteria:

- Show evidence of careful planning, including a review of current literature, if appropriate.
- Be planned in advance as to minimize interruptions in the regular school program.
- Make no undue demands upon the time of students and staff.
- Respect the rights of privacy of personal data concerning students and staff.
- Include informed consent statements from parents when necessary.
- Provide for the protection of human subjects under the law (45-CFR 46).
- Respect the right of individuals to refrain from participation in research studies.

Administrative Responsibility: Teaching and Learning Department

Added: April 1, 1999 | Board of Education Policies Section II.L

Public Schools prohibit discrimination on the basis of race, color, national origin, sex, age, religion or disability in its programs, activities or employment, and provides equal access to the Boy Scouts and other designated youth groups to its facilities as required by: Title IX of the Education Amendments of 1972, Title VI and Title VII of the Civil Rights Act of 1964, the Age Discrimination Act of 1975, the Americans with Disabilities Act (ADA), the Individuals with Disabilities Education Act, Section 504 of the Rehabilitation Act of 1973 and other relevant state and federal laws. Inquiries regarding compliance with applicable civil rights statutes related to ethnicity, gender, age discrimination or equal access may be directed to Staff Counsel, 14160 Blackhawk Road, Overland Park, KS 66063-2000, phone 913-780-7000. All inquiries regarding compliance with applicable statutes regarding Section 504 of the Rehabilitation Act and the Individuals with Disabilities Education Act and the Americans with Disabilities Act may be directed to the Assistant Superintendent General Administration, 14160 Blackhawk Road, Overland Park, KS 66063-2000, phone (913) 780-7000. Interested persons including those with impaired vision or hearing, can also obtain information as to the existence and location of services, activities and facilities that are accessible to and usable by disabled persons by calling the Assistant Superintendent General Administration. (04/13)

## Research Application Request-Internal

### INSTRUCTIONS:

Please provide the following information so that your project can be considered in relation to district criteria. Allow a minimum of two (2) weeks for completion of the review process.

PLEASE NOTE: Your final application should include submission of the following requirements:

- (1) the on-line application,
- (2) a copy of your Human Experimentation Committee project review and approval (if applicable), and
- (3) a letter from your academic advisor/committee indicating that your research project has been reviewed and approved.

Requirements #2 and #3 can be scanned and sent through email to \_\_\_\_\_ inserted into the on-line application in word format, or sent in hard copy format to \_\_\_\_\_, Educational Resource Center, 14090 \_\_\_\_\_.

1. **Applicant(s) Name:** Brent Yeager
2. **Position:** Executive Director of General Administration and Elementary Programs
3. **School/Location:** Education Center
4. **Telephone:** 913-780-8039
5. **Email address:** byeagerec
6. **Project Title:** The Elementary Achievement Gap in Reading between Kindergarten and Third Grade in a Suburban School District.
7. **The proposed research is for:** Doctoral Dissertation in partial fulfillment of the requirements for the degree of Doctor of Education in Educational Leadership.

### 8. Anticipated Dates:

Beginning Date: 5/15

Ending Date: 8/30/15

Date Final Report Available: 12/30/15

### 9. Participant Description:

**Number of schools and names involved in the study:** No school will be directly involved as archived data will be used.

**Number of teachers involved in the study:** No teachers will be directly involved as archived data will be used.

**Number of students involved in the study:** Archived data of student results in the areas of literacy and reading will be used from the 2010-2011, 2011-2012, 2012-2013, and the 2013-2014 school years.

### 10. Has the project been submitted to a Human Experimentation Committee? Respond Yes or No. No

### 11. If no, please explain why your project has not been submitted to a committee on human experimentation.

Archived data will be utilized in the present study. A Proposal for Research will be submitted to the Baker University Institutional Review Board once \_\_\_\_\_ approval has been granted.

**12. Either paste a copy of the letter from the Human Experimentation Committee regarding your study (Word format) below, email a scanned copy to \_\_\_\_\_, or send a hard copy**

**13. Brief review of the literature:**

Early in the nineteenth century, advocates of kindergarten introduced a European model in the United States, which for the first time, explored the idea that children learn differently than adults. This model was similar to a model being used throughout Germany (Waters, 2012). Even with advocates and a growing curiosity of kindergarten in the United States, it took many more years for the first kindergartens to be established within state school systems (Waters, 2012).

While kindergarten has been an established practice in the United States for a considerable amount of time, many changes have occurred within kindergarten programs. Bassok and Rosem wrote (2014):

Kindergarten in the United States has radically changed over the past two decades, and the developmentally learning practices centered on play, exploration and social interactions have been replaced with highly-prescriptive curricula, test preparation, and explicit focus on academic skill building (2014, p. 1).

Kindergarten has been utilized as an established practice in the United States for well over 100 years; however, the structure being used has morphed overtime and looks different from state to state and from school district to school district. Vu, Han, and Buell (2012) wrote "in recent years, the popularity of full-day kindergarten in the United States has increased among families and the school systems (p.2)". The same authors also wrote:

In 1977, children who were enrolled in kindergarten were more likely to be enrolled in part-day programs (73%) as opposed to a full-day programs (27%), by 2001 the converse was true, with 40% of children in kindergarten enrolled in a part-day programs and 60% in a full-day programs (2012, p. 2).

In addition to providing an expanded curriculum and extra opportunities for students, full-day kindergarten appeared to be utilized as an intervention to eliminate or reduce the achievement gap between student groups. Several states in the United States made an investment in full-day kindergarten to assist at-risk and low-income children (Brown, 2005).

**14. Major research questions:**

To investigate if there is an achievement gap in literacy and reading level between kindergarten students and third grade students within the \_\_\_\_\_ to explore this topic, the following research question was developed: To what extent is there a relationship between attending kindergarten through third grade at a Title 1 elementary school or a non-Title 1 elementary school and reading level by the end of third grade.

**15. Methodology:**

The group of students used for this research was students enrolled in kindergarten, first, second, and third grade in one suburban school district in the Midwest. The data of all students continuously enrolled in the suburban school district attending the same Title1 or non-Title 1 schools from kindergarten through third grade were analyzed for this study. For this study, performance levels were analyzed in the area of reading at the beginning and end of kindergarten and at the end of third grade. The suburban school district's assessment department provided the student achievement scores for the research.

**16. Method Summary:**

Prior to collecting data, the researcher will submit the research proposal form to obtain permission from the Olathe Public Schools. Following approval, the researcher will initiate the process to obtain permission from Baker University by submitting an Institutional Review Board (IRB) request to Baker University. Follow approval for the study from both the \_\_\_\_\_ and Baker University, the district's Assessment Department will send a report to the researcher listing information for each student enrolled in full-day kindergarten during the 2010-2011 school year continuously enrolled through the 2013-2014 school year. The report will include the following information: random student number, gender, race, socioeconomic status, reading level for the 2010-2011 school year, reading level for the 2013-2014 school year, and early literacy information gathered fall during the 2010-2011 school year. The early literacy information will include the following: upper case letter identification, lower case letter identification, and consonant sound identification. This information will be compiled into a Microsoft Excel spreadsheet using student

numbers to protect student identification.

**17. Research Design/Data Analysis:**

The present study will utilize a quantitative research design using historical data. Additionally, it will measure the association between quantitative variables, specifically a correlation research method. The variables to be examined include attendance in full-day kindergarten at a Title 1 school or attendance in full-day kindergarten at a non-Title 1 school and student achievement by third grade in the area of reading.

The present study will use quantitative methods of data analysis. Once the quantitative data are collected and organized into a Microsoft Excel worksheet, the researcher will check the information for accuracy for import into the current version of the IBM® SPSS® Statistics Faculty Pack 21 for Windows. The researcher will determine if a relationship exists between attending full-day kindergarten at a Title 1 school and attending full-day kindergarten at a non-Title 1 school and reading level by the end of third grade. In order to make this determination, the researcher will use a Pearson product-moment correlations coefficient. A one-sample t test will be conducted to test for the statistical significance of the correlation coefficient with the level of significance set at .05.

**18. Perceived Benefits of the Project:**

In reviewing literature, the use of full-day kindergarten is often listed as an early intervention for students coming from poverty. The research also concludes that the earlier a school system can intervene the more likely it is the students will graduate from high school and go on to college.

Because the \_\_\_\_\_ s had a strong commitment to offering full-day kindergarten at Title 1 schools for almost 20 years, the findings from this study have the potential to educate administrators and program decision-makers concerning the effectiveness of full-day kindergarten at Title 1 schools compared to the effectiveness at non-Title 1 schools.

**19. Project Dissemination Plan:**

Once completed, the results of this proposed research will be shared with district leadership. Results may assist Teaching and Learning teams and General Administration teams as next steps and modifications for full-day are planned and made in the \_\_\_\_\_

**20. Briefly describe how this research project supports \_\_\_\_\_, a district goal, and/or individual school's improvement plan.**

\_\_\_\_\_ s currently reviewing all practices related to support students in poverty. This is a continual process for the district as the number of students qualifying for free or reduced lunch continues to climb each school year. This study will support the district's efforts to make the best instructional decisions for students living in poverty.

**21. Please provide a letter from your faculty advisor/committee indicating that the research project has been reviewed and the researcher has met all requirements necessary to conduct the proposed research. You can paste an electronic copy of the letter (Word format) into this section, email a scanned copy to [matthew.m@olatheschools.org](mailto:matthew.m@olatheschools.org), or send a hard copy to Mary Matthew at the Instructional Resource Center.**

This study has been approved by my major advisor, Dr. Sharon Zoellner, and Chapters One and Three of this study have been drafted and reviewed by Dr. Zoellner as well as Margaret Waterman, the research analyst for this study. A separate letter will be sent indicating that the project has been reviewed and met the requirements to conduct the research.

**Appendix B: District Internal Research Support Letter from Major Advisor**

SCHOOL OF EDUCATION  
Baldwin City, Overland Park, Wichita, Topeka,  
Kansas City and Lee's Summit

May 21, 2015



Ms. \_\_\_\_\_  
Director of School Improvement and Assessment  
Instructional Resource Center  
\_\_\_\_\_

Dear Ms. \_\_\_\_\_

This letter is written as confirmation that as Brent Yeager's major advisor at Baker University, I have reviewed and approved his study *The Elementary Achievement Gap in Reading between Kindergarten and Third Grade in a Suburban School District*. Additionally, I can confirm that his study has been reviewed and approved by Baker University Research Analyst, Peg Waterman. If you have any questions please don't hesitate to contact me.

Sincerely,



Sharon Zoellner, Ph.D

UNDERGRADUATE CAMPUS | P.O. Box 65, Baldwin City, Kansas 66006  
785.594.6451 | fax 785.594.2522 | [www.bakerU.edu](http://www.bakerU.edu)  
GRADUATE CAMPUS | 8001 College Boulevard, Suite 100, Overland Park, Kansas 66210  
913.491.4432 | fax 913.696.1997 | [www.bakerU.edu](http://www.bakerU.edu)

**Appendix C: School District Approval for Research**



You replied to this message on 6/18/2015 8:43 AM.  
From: [Redacted] Sent: Wed 6/17/2015 2:39 PM  
To: [Redacted]  
Cc: [Redacted]  
Subject: The Elementary Achievement Gap in Reading between Kindergarten and Third Grade in a Suburban School

Brent,

We have received your Research proposal as listed above. As you know your project has been approved as requested. Just a reminder when sharing results, you will need to refer to Clatsop and any elementary schools as a district and schools in the Midwest. Please do not use the district name or school names in your results. Just a reminder please provide us with a final report when available. Thanks

Thank You

[Redacted]

Click on a photo to see social network updates and email messages from this person.



Brent Yeager  
ADD

**Appendix D: Baker IRB Application & Approval**

SCHOOL OF EDUCATION  
GRADUATE DEPARTMENT



Date: \_\_\_\_\_  
IR.B PROTOCOL NUMBER \_\_\_\_\_  
(IR.B USE ONLY)

**IR.B REQUEST**  
**Proposal for Research**  
**Submitted to the Baker University Institutional Review Board**

**I. Research Investigator(s)** (Students must list faculty sponsor first)

**Department(s)**      School of Education Graduate Department

Name	Signature	
1. Sharon Zoellner	<u>Sharon Zoellner</u>	Major Advisor
2. Peg Wateman	<u>Margaret Wateman</u>	Research Analyst
3.		University Committee Member
4.		External Committee Member

Principal Investigator: Brent Yeager  
Phone: 913-653-9120  
Email: BrentCYeager@stu.bakeru.edu  
Mailing address: 11491 S. Carbondale St., Olathe, KS 66061

Faculty sponsor: Dr. Sharon Zoellner  
Phone: 913-344-1226  
Email: szoellner@bakeru.edu  
Expected Category of Review:  Exempt       Expedited       Full

**II: Protocol Title:**

**Change in Reading Score between Kindergarten and Third Grade for Students Attending Title I and Non-Title I Full Day Kindergarten**

**Summary:**

**In a sentence or two, please describe the background and purpose of the research.**

The purpose of this study is to determine if the change in reading achievement from kindergarten to third grade is the same or different after students attend a Title I or a non-Title I kindergarten. The current study will investigate early literacy skills when students enter kindergarten and

determine if an achievement gap exists in reading level between student attending Title 1 elementary and non-Title 1 elementary schools by the end of third grade.

**Briefly describe each condition or manipulation to be included within the study.**

There are no conditions or manipulations in this study.

**What measures or observations will be taken in the study? If any questionnaire or other instruments are used, provide a brief description and attach a copy.**

**Will the subjects encounter the risk of psychological, social, physical, or legal risk? If so, please describe the nature of the risk and any measures designed to mitigate that risk.**

The investigator has received written permission from the \_\_\_\_\_ to use archived data for this study. For the variable of attending full-day kindergarten at a Title 1 elementary school or a non-Title 1 elementary school, gender, ethnicity, free or reduced status, and reading score data will be used. Students will be identified using randomly assigned numbers to maintain confidentiality.

There are no psychological, social, physical, or legal risks involved with this study.

**Will any stress to subjects be involved? If so, please describe.**

There will be no stress to subjects involved in this study.

**Will the subjects be deceived or misled in any way? If so, include an outline or script of the debriefing.**

The participants will not be deceived or misled in this study.

**Will there be a request for information that subjects might consider to be personal or sensitive? If so, please include a description.**

There will be no requests for personal or sensitive information for this study.

**Will the subjects be presented with materials that might be considered to be offensive, threatening, or degrading? If so, please describe.**

There will be no materials that might be considered offensive, threatening, or degrading to present study participants.

**Approximately how much time will be demanded of each subject?**

There will be no additional time demanded of participants in this study as archival data will be used.

**Who will be the subjects in this study? How will they be solicited or contacted? Provide an outline or script of the information which will be provided to subjects prior to their volunteering to participate. Include a copy of any written solicitation as well as an outline of any oral solicitation.**

Subjects will be students in the \_\_\_\_\_ who attended full-day kindergarten during the 2010-2011 school year and were continuously enrolled through third grade during the 2013-2014 school year. Subjects will not be contacted as the data collected is archival in nature.

**What steps will be taken to ensure that each subject's participation is voluntary? What if any inducements will be offered to the subjects for their participation?**

Student data is archived data; therefore, steps for voluntary participation are not warranted.

There are no inducements to participate in this study.

**How will you ensure that the subjects give their consent prior to participating? Will a written consent form be used? If so, include the form. If not, explain why not.**

Archival district-collected data will be used; therefore, a written consent form is not necessary.

**Will any aspect of the data be made a part of any permanent record that can be identified with the subject? If so, please explain the necessity.**

In this study, there will be no permanent record that can be identified with the subject.

**Will the fact that a subject did or did not participate in a specific experiment or study be made part of any permanent record available to a supervisor, teacher or employer? If so, explain.**

There will be no permanent record that will be made available to a supervisor, teacher, or employer.

**What steps will be taken to insure the confidentiality of the data? Where will it be stored? How long will it be stored? What will be done with it after the study is completed?**

Each participant in this study will be given a randomly assigned number in lieu of the participant's real name to protect confidentiality. This data will be stored in a password protected Excel spreadsheet during the research period on the researcher's computer. At the conclusion of the research, all data will be deleted from the researcher's computer.

**If there are any risks involved in the study, are there any offsetting benefits that might accrue to either the subjects or society?**

There are no risks involved with the study.

---

**Will any data from files or archival data be used? If so, please describe.**

Historical archived data from the 2010-2011, 2011-2012, 2012-2013, and the 2013-2014 school years will be used. The archived data will include: early literacy skills ratings, first grade end of year reading score, second grade end of year reading score, and third grade end of year reading score.



*Baker University Institutional Review Board*

June 15, 2015

Dear Brent Yeager and Dr. Zoellner,

The Baker University IRB has reviewed your research project application and approved this project under Exempt Status Review. As described, the project complies with all the requirements and policies established by the University for protection of human subjects in research. Unless renewed, approval lapses one year after approval date.

Please be aware of the following:

1. Any significant change in the research protocol as described should be reviewed by this Committee prior to altering the project.
2. Notify the IRB about any new investigators not named in original application.
3. When signed consent documents are required, the primary investigator must retain the signed consent documents of the research activity.
4. If this is a funded project, keep a copy of this approval letter with your proposal/grant file.
5. If the results of the research are used to prepare papers for publication or oral presentation at professional conferences, manuscripts or abstracts are requested for IRB as part of the project record.

Please inform this Committee or myself when this project is terminated or completed. As noted above, you must also provide IRB with an annual status report and receive approval for maintaining your status. If you have any questions, please contact me at [CTodden@BakerU.edu](mailto:CTodden@BakerU.edu) or 785.594.8440.

Sincerely,

*Chris Todden EdD*  
Chair, Baker University IRB

Baker University IRB Committee  
Verneda Edwards PhD  
Sara Crump PhD  
Erin Morris PhD  
Scott Crenshaw