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Summer School Correlation to Reading Lexile Levels of African American Students in a Low Socio-Economic Area in Grades One through Four

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by

Channie Bell

A Dissertation submitted to the Education Faculty of Lindenwood University

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Declaration of Originality

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

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Abstract

The achievement gap between African American students and other races was continuously widening. School districts across the country were examining several programs to address the issue. This study attempted to examine the overall benefit of summer school attendance on reading achievement. It evaluated the relationship between summer school attendance and lexile levels of African American students from a low socio-economical area, in grades one through four. Participants for the study were not recruited as secondary data was used for the research. The study site school district's secondary data from the summer school session of 2012 was analyzed. The data included the spring 2012 and fall 2012 AimsWeb RCBM scores, along with the lexile levels. The study site school district collected lexile level data before and after summer school instruction. The summer school program was a four-week program that focused on math and reading. The program was voluntary and any student in the school district was able to attend. Data from the AimsWeb RCBM Assessment provided two measures for analysis: fluency and lexile level. The central research question was "What effect will summer school attendance have on reading lexile levels for African American Students from a low socio-economic area?" This quantitative study explored whether attendance in summer school contributed to an increase in the reading level, decrease in the reading level, or no effect on the reading level. This study used secondary data from a controlled group of students who did not attend summer school and an intervention group of students who attended summer school during 2012. A stratified random sampling of 60 students from the school's population of 343 was used to conduct the research.

The findings of the study concluded that summer school could have an observable positive effect on lexile levels, significant results depended on the grade level examined. The study identified a significant relationship between summer school attendance and fall lexile levels for first grade and significant difference in lexile levels of summer school attendees versus non-attendees for first and fourth grades.

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Chapter One: Introduction to the Study

Introduction

Angelou (2014) stated “Elimination of illiteracy is as serious an issue to our history as the abolition of slavery” (p. 1). Education allows for all things to happen. It gives students the chance to prosper and succeed. Nations cannot be successful without making a tremendous investment in educating the youth. Students depend on the early years of education, between birth through third grade (Tikkanen, 2009).

Current Issues

Elementary students today are faced with issues and the schools have numerous concerns. One major concern is the literacy and reading abilities of students. Data on the literacy and reading skills of America's children indicate a notable circumstance. A large percentage of students across the nation cannot read at a basic reading level, which is the primary or lowest rank of understanding text that has been read. Additionally, when considering family income levels, the figure for students in low-income families is more drastic (U.S. Department of Education, 2001).

Approximately 20% to 40% of children’s educational career outcomes are jeopardized because they are not reading well enough (Lane & Mercer, 1999, p. 46). Over 10 million students are promoted to the 12th grade every year and are not able to read at the basic reading level, which has also led to an increase in the dropout rate. It appears to be that in the United States, the longer the students are enrolled in school the more they regress (Bennett, 1998).

Literacy Across the World

Viewing literacy from a global viewpoint can aid in narrowing in on smaller components, as students throughout the world are struggling with literacy issues and concerns. At the time of this writing, there was 26% of the world's population considered to be illiterate (Summer Institute of Linguistics [SIL], 2014, p. 1). Out of the illiterate, two-thirds were women. Most of the illiterate population is from developing countries with over half the population being illiterate. India and China have higher literacy rates in comparison to Africa. India and China have 52% and Africa has less than 40% that are literate (SIL, p. 1). According to United Nations of Educational Scientific and Cultural Organization (2013) across the globe there were 122 million illiterate children (p. 1).

Literacy in the United States

Consistent with data across the world, the United States literacy rates were dwindling. One out of four youths in the United States were likely to grow-up to be illiterate adults (Literacy Statistics, 2013). In the United States there were 32 million illiterate adults. Out of the adults, 21% were reading below a 5th grade level. Over 60% of the prison inmate population was unable to read. The data indicated there was a clear connection between crime and literacy (p. 1).

Literacy in Missouri

In Missouri, the circumstances that were experienced as a whole continued. Review of the data indicated the state of Missouri achievement status had a relationship with the specific regional area, socio-economic position, and the race of the actual student. The state experienced lower scores from students in deprived communities. Students of minority scored lower (Missouri Department of Higher Education, n.d.).

Although as a nation the literacy level was consistently the same, Missouri's adult literacy rate decreased from 13% in 1992 to 7% in 2003 (Schremp, 2009, p. 1).

The state of Missouri assessed students yearly using the Missouri Assessment Program Assessment (MAP). The scores from the 2012 communication arts data revealed more than half of the students in the state of Missouri were meeting the expectation. The results from the test showed over 40% of the students were performing at a basic or below basic level (Missouri Department of Elementary and Secondary Education [MODESE], 2012).

St. Louis County

In the St. Louis County area the literacy concerns were more widespread. A school district in the suburbs near the study site owned data which indicated more drastic circumstances than other districts in the state. In 2012, the school district had an enrollment of 11, 494 students with 77.5% being African American and 15.2% Caucasian (MODESE, 2012, p. 1). The graduation rate of the district was 81.6%. The MAP communication arts data showed over 60% of students in third through sixth grades were performing in the basic and/or below basic category. Only 33.8% of third grade, 35% of fourth grade, and 37% of sixth grade students scored in the proficient and advanced category on the MAP assessment in communication arts. At the time of this writing, the district had 72.6% of the total population receiving free and reduced lunch (p. 1).

School Calendar Options

Most students that attended school for the traditional 10-month calendar year were learning at a sufficient pace and level according to assessment data. However, they tended to lose content information when not enrolled in school for the traditional 12-

week summer break (Gambrell, 2008). The achievement gap has been traced back to the loss in reading proficiency that happens over the summer vacation in elementary level grades (Alexander & Olson, 2007).

Research has indicated that there is no longer a need for traditional school calendars. Furthermore, the traditional school calendars do not correlate with most students' learning patterns. Summer break from school is considered an affliction, as it gets in the way of students' retaining information (White, 1999). Research indicated a drastic difference in the scoring on a standardized test at the beginning of summer break versus the end of summer break. Students usually score higher at the beginning of the summer vacation than at the end of the summer vacation (Cooper, Nye, Charlton, Lindsay, & Greathouse, 1996).

According to the National Association of Year Round Education, the number of year-round schools in the United States grew from just over 400 in the late 1980's to approximately 2,880 in 1999-2000 school calendar year. Proponents of year-round school indicated a growing trend in extending the length of the school calendar. Additionally, proponents of the year-round calendar believed this method was cost effective and beneficial. Advocates felt year-round schooling accommodated more students, reduced monetary tension, and paid teachers more money (Carter, 1999). Moreover, research indicated that schools operating throughout the calendar year were much more effective than a traditional ten-month school year. In the classic ten-month school year model, summer instruction was needed to help keep students learning and reading at their grade levels (Carter).

Summer school has been implemented throughout school districts in the United States to help decrease 'summer loss', the information that the students lose over the summer. A good summer school program integrated, in the traditional school year model, could provide support to slowing down the summer slide that many students experienced. Summer school was considered to be an aid in narrowing the achievement gap. Data showed that, in a summer program, some students could gain six months of grade levels skills (Black, 2005). It would be beneficial for more schools to offer summer school to help those students who are slightly behind, as it is essential to keep students academically active through the summer months (Green, 2002).

Literacy difficulties were becoming more prominent among our nations school districts. Many states were using reading scores from the third grade to project the growth of population in state prisons, which were, at the time of Tikkanen's (2009) writings, at a constant.

At the time of this writing, companies offered individual tutoring, and some schools offered interventions for individual students with reading difficulties. However, if parents or schools did not have funds available, these programs and services could not be provided. Money was a major barrier for many school districts, even though some schools were provided Title I funds to utilize (Black, 2005).

In summary, research has indicated that children of poverty or of low socio-economic areas tended to have more issues with reading and literacy, indicating that summer school would be beneficial to them. Summer school allowed students more individualized instruction and assist them with the skills in which they needed the most

support. Struggling students would receive needed help to assist in making progress on state mandated assessments (Buchanan, 2007).

Background

This researcher believes one of the most important educational goals is learning how to read. Being able to read allows a person to open up new worlds and opportunities. It gives oneself the opportunity to learn information, enjoy reading, and do regular things, such as read news articles, maps, and manuals. Most individuals are taught to read without any issues or problems, but some may need supplemental help with learning to read (Bernhardt, Kamil, Mulaka, & Pang, 2003).

Instruction in the summer began as an economic consideration when the country shifted from an agricultural basis to an industrial basis. Many children worked jobs during the summer, but some did not. The shift caused many city residents concern. Members of these communities began to insist on summer activities for students to participate in while school was not in session. Summer allowed opportunities to remediate learning deficits (Borman & Boulay, 2004).

High-quality summer school programs can assist in discontinuing the summer academic slide that happens between the end of one school year to the beginning of the next. When traditional school begins in August or June, reviewing previously learned information takes up much of the teaching time (Black, 2005). All students suffer a loss over the summer; however it is more evident in children from poor families. Each summer for these students the reading scores become lower and lower. The reading difficulties continue to compile (Black, 2005).

Special attention was required to address the identified gap in achievement between African American children and children of other races. According to data provided from the National Assessment of Educational Progress (NAEP) of 2007, only 14% of African American students scored proficient in reading. Only 2% scored in the advance category. Over half of the African American fourth grade students were below basic in the same category (Lee, Grigg, & Dion, 2007, p. 15). Basic signified incomplete mastery at the identified grade level. Although large amounts of funds have been utilized to address the concern, the problem continued. A clear picture was painted of the lack of harmony between the education system and students of African American ethnicity (Li, 2011).

Statement of the Problem

Some students in the United States were struggling with literacy difficulties. A large percentage of kindergarten through fifth-grade students were not showing the appropriate amount of success throughout a regular school year of 10 months. Research showed if students were not able to be fluent readers by third grade, they would possibly not have a chance to be successful citizens in the world (Tikkanen, 2009). Reading levels have also been linked to high school dropout rates of United States students. The dropout rate was a rising concern in education that needed to be addressed. Students ended the regular school year term, not ready for the next year. In some cases, students were two to three semesters behind in reading. Continuous instruction would be beneficial until students were remediated and reached the appropriate reading grade level. Some students required more intensive instruction than others. Students do not learn at the same rate or in the same way. Additional instructional activities were needed to ensure that students' needs were being met. Leaving students at a deficit in reading skills only allowed them to

further disintegrate in their educational skills. Reading was considered one of the most important subjects to study in school, because every subject required students to be able to read. If a student cannot read and comprehend a math problem, he or she will not be able to solve for the correct answer. Reading is the fuel to the fire in education, as it can allow a student to be or not be successful in all subject areas (Tikkanen, 2009).

Purpose Statement

The purpose of this quantitative study was to determine what type of potential effect summer school had on the reading levels of African American students of a low socio-economical area versus those who additionally attended summer school. The researcher was interested to see if summer school attendance would contribute to an increase in the reading level, a decrease in the reading level, or if the level would remain the same as compared to students who did not attend summer school. The study utilized secondary data from a group of students, considered as the control sample, who did not attend summer school and a group of students, considered as the intervention sample who attended summer school. Data from the AimsWeb Reading Curriculum Based Measurement (RCBM) assessment provided two scores, measurements of fluency and lexile level, to be used to determined potential contributions. All secondary data provided by the school district from one summer school session of 2012 was used for the research. The data that was collected and analyzed from student attendance at the end of Spring 2012 and Fall 2012, AimsWeb RCBM score, and reading lexile levels. The summer school attendance roster was included, along with an overall school roster of students used to identify those who did not attend summer school. All data was collected from an elementary school in St. Louis County from the study site school district. The elementary

school's population at the time of the study was 343 students of which 98.8% of the students were African American. The free and reduced lunch percentage was 89.9% (MODESE, n.d., p. 1). The summer school programs were intensive four-to-eight week sessions designed to assist with reading, writing, and math.

For this study, the dependent variable was defined as the students' lexile levels. The independent variable was the actual summer school attendance, which allowed additional instruction to be provided. The students were assessed at the end of spring for the pre-test reading measurements and at the beginning of fall for the post-test reading measurements, provided by AimsWeb data.

This quantitative research explored the possible relationship between summer school and students' lexile levels. This data may help school leaders in designing summer school programs. Federal government agencies may also find these results beneficial in planning where to apply federal funds for most effective results in student outcomes. This information may allow educators to become more effective in their teaching and supplementary instruction.

This research explored the methods of improving reading/literacy levels of students in a low socio-economical area through use of additional summer time instruction. The research examined the relationship between summer school attendance and students' reading levels. Data was analyzed by using measured lexile level from AimsWeb RCBM Assessment. The data can be helpful for school administrators from districts with demographic characteristics similar to the study site. Findings from the research may help school districts and administrators to evaluate the value of summer school attendance for students of a low socio-economical area.

Significance

One benefit of this research study may be that the study school district will be able to verify if summer school attendance contributed to improvement of African American students' reading abilities. The research may provide the district with a rationale to enhance summer programs to be more beneficial for students in the area of reading. Findings from the research can be motivate actions that may be used to narrow the achievement gap between African American students and non-African American students by providing insight on strategies that can support African American students. Districts can use the data to develop Common Core State Standards (CCSS) implementation plans through understanding the progress or lack of, students can make over the summer. In society, many African American students were performing at a lower level than other races in reading (Fryer & Levitt, 2004). This study may help to prove the efficacy of summer school in improving reading levels, and may motivate implementation of programs to be more helpful for African American students of a low socio-economical area, and contribute to a narrowing of the achievement gap between African American students and students of other races. Teachers can use the data to develop effective implementation CCSS plan by offering support for standards that were not mastered in the school year during summer instruction. Teachers may be more able to move students further in their instruction by identifying standards that need to be addressed and providing differentiated instruction to address the standards in a timely manner through use of summer school programs. Teachers and school districts may be provided with insight and information to design summer reading programs to meet students at their individual instructional level. This research may allow educators to

understand the strength of benefits of summer school programs in increasing reading levels.

Nature /Scope of Study

The study focused on first through fourth grade African American elementary students of a low socio-economical area. In the study each student's lexile level was reviewed before and after summer school instruction. Scores for students from the control group lexile scores from the end of the school year and the beginning of the school year were evaluated. The objective was to compare scores from the control group to those of the intervention group. Several options, such as year-round school, traditional school, and traditional school with summer school will be discussed in the literature review to provide information for which, if any, is deemed better for overall student success in reading and literacy. Research of literacy from a global standpoint to the local community aspect was reviewed and examined to provide a clear connection of the literacy concerns. The findings included information about implementing the CCSS to narrow achievement gap and increase literacy rates.

Research Question

What effect will summer school attendance have on reading lexile levels for African American Students from a low socio-economic area?

Hypotheses

Summer school was intended to help students increase or maintain current levels of achievement in all subject areas. Reading and literacy were subjects examined in this research, since both of these areas had been of major concern in many communities, especially low socio-economical areas. Hypotheses addressed include:

Hypothesis # 1: The average lexile levels of African American students in grades one through four will exceed the expected age-appropriate lexile levels.

Hypothesis # 2: There will be a relationship between attendance in summer school and reading levels of first through fourth grade African American students in a low socio-economic area, as identified by summer growth in lexile level provided by the AimsWeb RCBM Assessment.

Hypothesis # 3: There will be a difference in summer growth in lexile levels between the control group not attending summer school and the intervention group attending summer school for first through fourth grades, as measured by AimsWeb RCBM.

Hypothesis # 4: There will be an increase in lexile level when comparing post-to pre-test values for summer school attendees in grades one through four.

Definitions

AimsWeb - AIMSWeb is:

> a complete web-based solution for universal screening, progress monitoring, and data management for Grades K-8. AimsWeb provides guidance to administrators and teachers based on accurate, continuous, and direct student assessment. It [AimsWeb] helps school administrators demonstrate tangible improvements. It [AimsWeb] helps teachers become more effective and more efficient in the classroom. Most important of all, AimsWeb helps to create better outcomes for students - proven by the thousands of schools that use the system across the United States and Canada today. (NCS Pearson, 2011)

AimsWeb RCBM - AimsWeb Reading Curriculum Based Measure is:

a subtest of AimsWeb. More than 30 years of research has shown that listening to a child read graded passages aloud for 1 minute and calculating the number of words read correct per minute provides a highly reliable and valid measure of general reading achievement, including comprehension, for most students. This testing practice, Reading Curriculum-Based Measurement (R-CBM), has met the standards for use in Reading First as determined by the Secretary of Education's Committee on Reading Assessment and the Intervention. To assist educators in assessing students using R-CBM, Pearson has developed high quality sets of Standard Reading Assessment Passages for Grades K-8 as part of the AimsWeb system. Typically, there are over 30 equivalent passages at each grade. The passages were written by experienced educators and field-tested, revised, and researched by experienced educational researchers. The technical manual describes both the passage construction process and the outcomes with respect to field-testing and relates to a variety of readability formulae and alternate form reliability. AimsWeb R-CBM assessments meet professional standards for reliability validity, and sensitivity to improvement, are research-based, and are curriculum independent, ensuring that student achievement is assessed equitably regardless of curriculum differences among teachers and schools, and/or changes in curriculum over time and are available for Grades K through 8. (Daniel, 2010, p. 1)

Common Core State Standards (CCSS) - standards listed by grade level of what students are expected to learn and what teachers are expected to teach to ensure

students are ready to begin a career or start college after graduating from high school (In the States, 2012, p. 1).

Lexile Measure - A lexile measure represented by a letter ‘L’ and a number on a scale of 200L to 1600L, indicates an individual's ability to read, or represents the difficulty in reading of a piece of text. The measure is provided after a reading test has been given to an individual or after an individual has completed a reading program. The lexile measure considers how many times a word is used and how long the sentences are in a given passage to determine the level of difficulty of a text. The lexile level indicates the targeted reading level for an individual student. The text on a specific lexile level may be slightly difficult for a student to read. However, it will not cause frustration, and is considered the approximate text difficulty when deliberately calculated for a particular student (Schnick & Knickelbine, 2000).

Literature Rich - Literature rich is being surrounded by print of any sort, such as books and magazines and participating in a large variety of writing activities and to inspire reading and writing for several reasons (Dickinson & DiGisi, 1998).

Reading Comprehension - Comprehension is the ability to understand and pull meaning from text. It is a complex and collaborative process, in which the reader builds meaning from the information provided in the text united with their own knowledge (Sedita, 2008).

Reading Fluency - Is the ability to accurately decode with automaticity, correctly identifying the majority of words in a piece of reading, using expression as one reads, and correct phrasing of words to comprehend text (Deeney, 2010).

Summer Learning Loss - the educational knowledge students lose over the summer break from school. This loss on estimate is usually two months in reading instruction for low or disadvantage students (Alexander, Entiwisle, & Olson, 2007, p. 167).

Summer Reading Loss - Summer reading loss, which refers to the decline in children's reading improvement that can happen during the summer vacation times when students are not in the classroom and involved in formal literacy educational programs (McGill-Franzen & Allington, 2003).

Traditional Calendar - The traditional nine-month calendar emerged when half the population of the United States was part agriculture and climate controlled environments were limited in school buildings. The traditional calendar school year begins in August or early September and ends in May. Students are off during the summer for approximately 12 weeks (Dixon, 2011).

Traditional School Year - The traditional nine-month calendar emerged when over half the population of the United States was part agriculture and climate controlled was limited in school buildings (Dixon, 2011). The traditional calendar school year begins in August or early September and ended the year in May. Students were off during the summer for approximately 12 weeks.

Traditional School Year with Summer School -The traditional school year with summer school is the same as the traditional nine-month calendar (Dixon, 2011). In addition, there is an instructional component offered in summer time that typically last from six to ten weeks. Several courses can be taken during this time frame (Summer School Review LLC, 2009).

Year- Round Calendar - This school calendar is represented when students attend school the entire year with small breaks, issued throughout the calendar. Students attend the school the same amount of days as the traditional school year (McMullen & Rouse, 2012).

Year- Round School Year - When students attend school the whole year with small breaks, issued throughout the calendar. Students attend the school the same amount of days as a traditional school year (McMullen & Rouse, 2012; Southern Regional Education Board, 2002).

Limitations-Delimitations

This study was limited to researching students of a low socio-economical area. Data was from a Saint Louis County elementary school located in the study site school district of research. Only data first through fourth grade students was reviewed. Summer school pre- and post-lexile levels measured by AimsWeb RCBM Assessment taken by an intervention group of students who attended summer school and a control group of students who did not attend summer school were quantitatively analyzed for comparison.

Summary

Students who live in a low socio-economical area were struggling with reading, especially when they had two months off from formal schooling in the summer time. The lack of reading skills was causing a negative effect on overall education achievement for those students struggling with reading abilities. Students were not retaining information during the seasons of the year they were not in school, which caused students to be pushed further and further behind. Disadvantaged students were suffering the most

because in the summer they did not have the same potential to attend summer school and receive resources that other more advantaged students could access.

Effective summer school programs can assist in keeping students active through a long summer break. The literature research will explore the options of traditional school calendar, year-round calendar, and traditional-calendar year with summer school to provide an understanding of the overall calendar options for school districts. Literacy findings across the globe, in the United States, in the state of Missouri, and the St. Louis County area were considered in the literature review provide a connection of the overall literacy concerns. The Missouri state initiative of CCSS implementation will be reviewed to ensure the narrowing of the achievement gap as it relates to literacy. Research will determine if offering summer school can be beneficial to African American students residing in a low socio-economical area. The data will be reviewed to determine the benefits, or lack of, with regard to summer school attendance for the identified group of students as it relates to the students' lexile levels.

Chapter Two: The Literature Review

Jennison (n.d.) stated the following:

> The poor and the affluent are not communicating because they do not have the same words. When we talk of the millions who are culturally deprived, we refer not to those who do not have access to good libraries and bookstores, or to museums and centers for the performing arts, but those deprived of the words with which everything else is built, the words that open doors. Children without words are licked before they start. The legion of the young wordless in urban and rural slums, eight to ten years old, do not know the meaning of hundreds of words which most middle-class people assume to be familiar to much younger children. Most of them have never seen their parents read a book or a magazine, or heard words used in other than rudimentary ways related to physical needs and functions. Thus is cultural fallout caused by the vicious circle of ignorance and poverty, reinforced and perpetuated. Children deprived of words become school dropouts; dropouts deprived of hope behave delinquently. Amateur censors blame delinquency on reading immoral books and magazines, when in fact, the inability to read anything is the basic trouble. (p. 1)

The preceding quote emphasized the seriousness of illiteracy. The quote described how poverty led to the development of illiteracy and the effects of illiteracy on an individual's life. In urban areas, children of poverty often begin school behind in their vocabulary, as compared to other counterparts. The cycle of being behind can become continuous and can lead students to dropping out of school and non-productive lives (Reardon, Valentino, & Shores, 2012).

Chapter Two contains reviews of literature about the practical school calendar options available to school districts in the United States of America, and information pertaining to the students' loss of development in the summer months, assessing reading, and literacy as whole. The literature review depicts a clear picture of the overall aspect of literacy concerns from a global aspect and narrowing in on the study site; examining the true urgency of supplementary support needed for African American students of a low socio-economical area as it relates to reading and possibly ways to address the matter.

Reading and literacy difficulties impact several societal issues in the United States, such as self-esteem issues, poverty, crime, and unemployment (Roman, 2004). Over 60% of the individuals in prison lack the ability to read and write. Almost 85% of the children considered juvenile lawbreakers have some type of reading problem (Music, 2012, p. 723). Individuals with reading difficulties often experience more problems with their health and may not make as much income as others who are able to read. Illiterate individuals struggle with basic concepts of living, such as balancing a checkbook, paying household bills, and even grocery shopping. When one is not able to read and understand text, dependency on others is required to help complete simple activities. In turn, the support required for lack of literacy increases taxes for the whole population, as more funds are needed for welfare, prison, and programs to prevent crime (Roman, 2004).

School administrators continuously look for ways to increase literacy rates, despite outside influences from home life or off-campus concerns that do not happen at school. Out of available options, it is difficult to determine which option is best for the students, since so many different factors affect students in both positive and negative ways.

This literature review describes the practical options available to school districts such as a choice between a year round calendar, traditional ten month calendar, or traditional calendar with an additional summer school component. Chapter Two also includes information pertaining to students' summer loss of information, assessing lexile levels, global literacy, reading in the United States, overall reading in the state of Missouri, effects of illiteracy, and concerns for students who live in a low socio-economical area.

Global Literacy

When addressing literacy as a whole, one must look at the big picture of the entire world and consider how the world is ranking in literacy and reading skills. Nair, Norman, Tucker, and Burkert (2012) defined global literacy as possessing knowledge of a specific language with great understanding and the capability of being successful in the identified society. The individual is fluent with the terms and concepts for the identified part of the world.

The Programme for International Student Assessment (PISA), which is an international assessment used to evaluate reading, science, and math, defined reading literacy as the ability to comprehend a piece of written text. PISA stated that reading literacy includes being able to examine a piece of text with careful thought, become involved in the text to master one's goal , and to obtain knowledge to become an active participant in the world (Education Commission of the States, 2011).

The Survey of Adults Skills (PIACC) is a measurement that provides an estimation of adult competency in literacy, numeracy, and problem solving. The PIACC has been used worldwide to evaluate literacy and is scored on a 500 point scale (Survey

of Adults Skills, 2013). Table 1 shows the findings of the assessment. Italy's literacy score was 250, while Japan's was 296. The average literacy score for the United States was 270. The five countries that scored lower than the United States; Poland, Ireland, France, Spain, and Italy. The literacy scores on the PIACC indicated that 11 national entities were performing above the United States. Therefore, the PIACC assessment data leads one to conclude that the United States was lagging behind other counterparts of the world.

Table 1.

OCED Literacy Proficiency

National Entities	Score
Australia	280.4
Austria	269.5
Canada	273.5
Czech Republic	274.0
Denmark	270.8
Estonia	275.9
Finland	287.5
France	262.1
Germany	269.8
Ireland	266.5
Italy	250.5
Japan	296.2
Korea	272.6
Netherlands	284.0
Norway	278.4
Poland	266.9
Slovak Republic	273.8
Spain	251.8
Sweden	279.2
United States	269.8

Note. Adapted from OECD.

Progress in International Reading Literacy Study (PIRLS) is an assessment given to 53 educational systems across the world to provide an overall literacy score.

Table 2.
PIRLS Reading Scale Scores: Fourth Grade, 2011

Education System	Scale Score
Hong Kong-CHN 1	571
Russian Federation	568
Finland	568
Singapore 2	567
Northern Ireland-GBR3	558
United States2	556
Denmark 2	554
Croatia 2	553
Chinese Taipei-CHN	553
Ireland	552
England-GBR 3	552
Canada2	548
Netherlands 3	546
Czech Republic	545
Sweden	542
Italy	541
Germany	541
Israel	541
Portugal	541
Hungary	539
Slovak Republic	535
Bulgaria	532
New Zealand	531
Slovenia	530
Austria	529
Lithuania 2, 4	528
Australia	527
Poland	526
France	520
Spain	513
Norway5	507
Belgium (French)-BEL 2, 3	506
Romania	502
Georgia 4, 6	488
Malta	477
Trinidad and Tobago	471
Azerbaijan 2, 6	462
Iran, Islamic Rep. of	457
Colombia	448
United Arab Emirates	439
Saudi Arabia	430
Indonesia	428
Qatar 2	425
Oman 7	391
Morocco 8	310
Average Scale Score	500

Note. Adapted: International Association for Evaluation of Educational Achievement (2011).

Table 2 indicates the assessment scores by each educational system. The average score was 500. In comparing the data from 2011, Hong Kong, Russian Federation, Finland, Singapore, and Northern Ireland-GBR scored higher than the United States. The United States had an overall literacy score of 556 in comparison to Hong Kong with 571. Morocco had the lowest score of 310. When comparing all the education systems, only 9% outperformed the United States (Martin, Mullis, & Kennedy, 2007).

Americans were far behind international averages in basic reading concepts (Toppo, 2013). Additionally, the gaps were larger between more and less educated in the United States of America than those of other countries. The United States average literacy scores were below the overall international literacy scores of adults in 12 countries. Adults who have reading difficulty are likely to find themselves struggling to find a career (Toppo).The United States ranking had not been in the top 10 countries in reading literacy in the last 10 years, at the time of this writing (McDonnell, 2013).

The Program for International Assessment (PISA) is a two-hour test given to a sample of 15-year-olds in multiple nations. The PISA assessment began in 2000 and was administered every three years to evaluate overall literacy in reading, math, and science. Each country received an average score after completion of the PISA assessment. In 2009, 65 entities completed the assessment (Froese-Germain, & Canadian Teachers, 2011, p. 23). The results from the data in 2000 indicated the United States was 15th among 28 of the countries and 15th of the 32 nations. In 2009, the United States was 12th among the 34 countries and 15th among 65 entities (McDonnell, 2013, p. 1). According to the Program for International Assessment, the United States ranked 14th in reading. In reviewing these scores, much growth is not indicated. However, the scores appeared to

remain consistent. In 2012, the PISA assessment results continued to show the United States behind other equivalents in reading, math, and science. Out of 34 OCED countries assessed, the United States ranked 26th. The reading scores remained at the average range as the United States ranked 17th (Devaney, 2013, p. 1). The findings from the 2012 PISA indicated that Shanghai students outperformed other countries in math, reading, and science. The data showed Shanghai students' skills were at least a year in advance compared to countries like the United States, Germany, and the United Kingdom (Brown, 2013).

Figure 1 indicates that literacy rates vary across the globe. The map indicated that several countries had 85% or more of their populations in the literate individuals' category. Several countries on the literacy map had literacy rates that were much lower.

In 1997, one billion adults across the world battled with illiteracy. In the United States 20% of the population was currently illiterate. In Germany the rate was lower with 16% being illiterate. In the Netherlands, only 10% of the population was illiterate. Individuals that are illiterate do not possess the skills to fill out a basic application for employment. In examining this problem, India has decided to utilize eight percent of their education fund to address the adult literacy issue (McIntosh, 1997, p. 88).

Some of the richest and wealthiest nations in the world experience low literacy rates. Only 1% of the United State owns over 40% of the entire wealth. "The richest two percent of adults in the world own more than half of the global household wealth" (Hanlon, 2006, p. 1). Wealth is mostly concentrated in North America, Europe, and high earning Asia-Pacific countries.

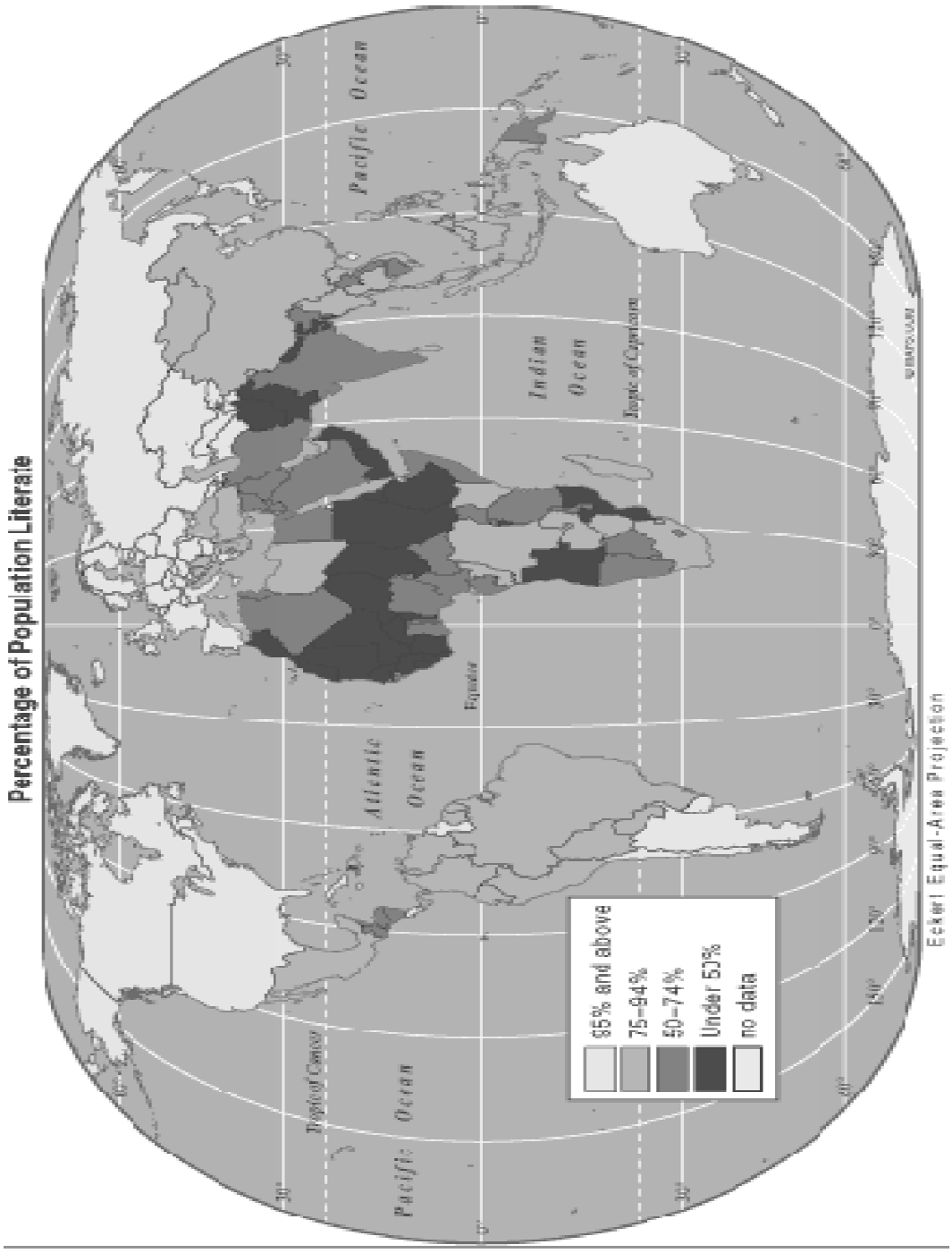

Figure 1. Literacy Rates Across the Globe.
Adapted from: *Saint Vincent & the Grenadines Country Review* (2010).

These countries hold about 90% of the total world's wealth. Although there is a large percentage of wealth, only a small percentage holds the wealth. A larger percent of individuals fall in the low and middle income category, and are not afforded the same opportunities as the wealthy individuals. Wealth has a clear connection to the literacy rate and there is an inequity among rich and poor countries (Hanlon, 2006).

Reading in the United States

Based upon the facts, it seems apparent there were literacy concerns across the globe. Many factors possibly attributed to this problem. Therefore, each entity must address the concerns by determining exactly where it stands as a piece of the literacy puzzle. The United States Department of Education was constantly developing new literacy plans and initiatives. Yet, the constant plans and programs had not earned the United States the proficiency expected in reading. Table 3 indicates the gap between African American and Caucasian students in the United States in grades four, eight, and twelve was narrowing in reading. However, the students' reading in the proficient category was still low (Education Commission of the State, 2011).

Although the United States Commission of Education made efforts to advance in literacy, there was not much improvement (Education Commission of the States, 2011). Literacy in the United States was a major concern, as 43% of American adults read at a basic level or have no reading skills at all (Schneider 2003, p. 1).

Table 3.

Percent Scoring At or Above Proficient in Reading: 2011 NAEP

	4th Grade	8th Grade
American Indian/Alaska Native	18%	22%
Asian/Pacific Islander	50%	15%
Black	17%	3%
English Language Learner	7%	
Hispanic	19%	18%
Students with a Disability	8%	11%
White	43%	44%

Note. Adapted from Education Commission of the, States. (2011).

When one has low skills, functionality in society is possible. However, it will be with difficulty. Only 13% of adults in the United States were proficient readers. Proficient readers possessed the skills to complete inquiry findings and understand intricate documents (Mettler, 2009, p. 1). Literacy skills varied among students of different ethnic backgrounds. African American and Hispanic students entered high school at least three years behind students of other ethnic groups. Students of the Hispanic and African American ethnic group lacked the necessary literacy skills to be career ready upon completion of high school. As the literacy skills were critical to the economic growth of the United States, the labor force experienced a decline (Mettler).

According to the 2011 NAEP, reading assessment, 67% of students in the United States in grade four scored at or above basic level (Reardon et al., 2012, p. 21). Students scoring at or above basic level could find information in a piece of text, make inferences,

and use the text to prove their opinions. Over a third of the fourth grade students in the United States scored at or above proficient. In summary, students scoring at or above proficient exhibited higher order thinking skills, interpreted several texts, and were able to draw conclusions. Out of all the fourth graders, only 8% scored in the advanced category (p. 22). The small percentage of individuals who were in the advanced category made complex inferences, demonstrated higher order knowledge base competencies, and justified evaluations. In assessing the eighth graders, the same trend was recognized; 87% of the eight graders scored at or above basic level. Over one-third of the eight graders scored at or above the proficient level and 3% scored in the advanced category (p. 22).

Missouri Literacy

Although the world and country were performing lower in literacy, Missouri ranked in the middle in comparison to other states, for educational performance (MODESE, 2012). The scores across the state showed an increase in mathematics and reading. Missouri students in the fourth and eighth grades ranked in 20th and 22nd place. Only one out of 14 Missouri graduates scored a three or higher on an AP exam, compared to about one in five from other states. Nearly 8,000 Missouri students dropped out of school in 2012. Over one-third of students that graduated from Missouri high schools needed remedial courses prior to attending a college or university (MODESE, 2012, p. 2). In 2012, Missouri ranked 47th in the nation and in 2011, ranked 34th on the National Education Report. The drop in the ranking was due to student performance and growth on the NAEP exam (Walker, 2012, p. 1).

Missouri Department of Elementary and Secondary Education (MODESE) assessed students using a state assessment as a part of the Missouri Assessment Program

(MAP). According to the MAP assessment given to third grade in 2011, 45% of the students scored proficient and/or advanced in communication arts, indicating that over half of the third graders are performing at a basic and/or below basic level in communication arts. Only 53% of the fourth graders met or exceeded the grade level expectation. The fifth grade students had 52% that met or exceed the grade level expectation. The data can lead one to conclude that almost 50% of Missouri third through fifth grade students are basic and/or below basic in communication arts (MODESE, n.d., p. 1).

Common Core State Standards

Once a concern for literacy was established and an understanding of the issue formulated, a plan was necessary to assist students and improve overall academic achievement in communication arts. The educational reform begin after the social, political, and economical issues were revealed from the Peters and Waterman Study in 1982 and the 1983 National Commission on Excellence in Education report (Watt, 2011). Issues and concerns continued into the 1990's with implementation of several concepts to address the issues. In 2001, the study called the American Diploma Project was launched to prepare students for college. Through the process higher education and career standards were written (Watt). The American Diploma Project came together to assist states in closing the achievement gap between what students needed to be successful in life and the expectations to obtain a high school diploma. From the study in 2008, a set of standards was developed to ensure that students would be prepared for college when they received a high school diploma. A study was conducted in 16 states to ensure the alignment of the standards and make revisions if deemed necessary (Watt). The

Mathematical and English language arts were deemed to be written effectively. The set of standards became known as the Common Core State Standards (CCSS).

In the year 2012, the CCSS adoption took place in 45 states and Washington D.C., in an effort to improve reading and literacy skills of students in the United States. The CCSS standards gave an outline of skills that required to be mastered in grades kindergarten through twelve in mathematics and English language arts. If the student mastered the standards at each level indicated, then the student would be career or college ready when graduating from high school. CCSS standards guided the instruction by ensuring it was consistent and of high quality. The standards improved student's English language arts skills with proper implementation (Kober & Rentner, 2012).

The state of Missouri chose to adopt the standards in the year 2010. The CCSS were considered to be more rigorous than previous standards utilized by the state. The full adoption to the CCSS was targeted for the school year 2014-2015 (In the States, 2012). The school districts in Missouri were expected to make sure the grade level expectations and end of the year course exams were aligned with CCSS. Each school district in Missouri determined their instructional methods, tools, textbooks, materials, and resources. However, the tools were required to clearly align with the CCSS. School districts in Missouri continued to develop curriculum based on the student's needs in their respective districts (Common Core State Standards, n.d.).

CCSS allowed teachers to teach differently than the traditional methods. The standards were broad and allowed the teacher to determine the type of instruction. CCSS instruction helped the students to meet the expectations. In order, to implement these standards, school districts needed to be proactive (McLaughlin & Overturf, 2012).

Many Republicans opposed the CCSS as it was believed the standards did not include important curriculum measures from the local entity and the implementation was unsure in the beginning of 2014 (Shapiro, 2014). However, in April of 2014 the legislature adopted the amendment to allow standards to remain in place and move forward with full implementation for the 2014 -2015 school year. The standards will be revisited to ensure the appropriate benchmarks are in place. Utilizing the CCSS students will be assessed on the common benchmarks in the fall of 2014 (Shapiro, 2014).

Research Population

According to the United States Census Bureau (2010), the population studied in this research effort is located in northern St. Louis County in St. Louis, Missouri. The community is located next to the east of the Mississippi River and north of the Missouri River. The entire area was a total of 7.4 square miles of actual land with a population, at the time, of 19,650 (State and County Quickfacts, 2010).

The Midwestern suburban community was part of the study site school district. The study site school district was one of the largest districts in the St. Louis city area and had 30 schools with a population of 18, 837 students (Research Site, 2010, p. 1).

In the community, 21.8% of the residents had an income below the poverty rate. Over 75% of the families in this area consisted of a female with no husband present. There were 27.1% of children living below poverty. Four percent of the community worked full-time jobs.

Table 4.

Communication Arts Level Descriptors for MAP

	Advanced	Proficient	Basic	Below Basic
3rd	Students identify relevant/supporting information to make predictions and draw conclusions; infer word meaning; infer main idea; make complex comparisons; make complex inferences; categorize information; identify correct sequence of events. Writing—Students consistently apply rules of Standard English; have an awareness of audience; use detail effectively. MAP score range: 673–790.	Students locate/identify supporting details, obvious cause and effect; make inferences; use context clues to determine word meaning; make comparisons; recall detailed sequence of events; identify solutions and fact vs. fiction; recognize figurative language; draw obvious conclusions. Writing—Students generally use rules of Standard English; show awareness of audience and include relevant details. MAP score range: 648–672.	Students make simple comparisons; recall simple sequence of events; make obvious inferences and predictions; use context clues to determine word meaning. Writing—Students use basic parts of speech correctly in simple sentences; show minimal awareness of audience and use some detail. MAP score range: 592–647.	Students locate information in text; identify an obvious main idea; define simple words and phrases. Writing—Students show minimal awareness of audience; attempt to create friendly letters. MAP score range: 455–591.
4th	Students make complex inferences and comparisons; evaluate simple information; infer cause/effect and word meaning; interpret figurative language; identify author's purpose; identify complex problems/solutions; explain complex main ideas. Writing—Students consistently use the rules of Standard English. MAP score range: 691–820.	Students make simple inferences; recall, identify, and use relevant information; draw conclusions; explain figurative language and main idea; use context clues to select vocabulary; identify character traits, sensory details, and simple cause and effect. Writing—Students show organization and awareness of an intended audience and purpose; use the rules of Standard English; use a writing process to revise, edit, and proofread. MAP score range: 662–690.	Students identify appropriate details; use context clues; make obvious inferences; select vocabulary using context clues. Writing—Students write simple letters with an awareness of an intended audience and purpose; generally use the rules of Standard English. MAP score range: 612–661.	Students locate information in text; recall stated information; draw obvious conclusions; make simple comparisons and descriptions. Writing—Students write simple letters, minimally use the rules of Standard English; attempt to organize information. MAP score range: 470–611.

Continued

Table 4. Continued

5th	Students interpret and draw conclusions from complex information; analyze complex characters; infer author's purpose and word meaning; categorize information; make simple evaluations and judgments; determine the appropriateness of a source and the accuracy of information. Writing—Students consistently use the rules of Standard English; use a writing process to organize information. MAP score range: 702–840.	Students interpret figurative language; infer main idea; identify author's purpose, point of view, the sequence of information, cause/effect, the meaning of vocabulary; summarize; distinguish between fact and opinion; draw conclusions; make inferences and comparisons; support a position. Writing—Students use the rules of Standard English; construct complex sentences; edit for appropriate support; organize information. MAP score range: 675–701.	Students identify supporting details, problems/solutions; use context clues; make obvious inferences; give partial summary of action. Writing—Students edit for Standard English. MAP score range: 625–674.	Students locate/identify information in text; draw simple conclusions; make obvious inferences and predictions; identify character traits. Writing—Students use correct letter writing format; partially organize information. MAP score range: 485–624.

Note. Adapted from MODESE: Division of Improvement/Assessment (2012).

The population had 41% who worked part-time jobs and 55% who did not have a job. The area had a 76.6% rental home rate, which means less than 25% of the community actually owned the home in which they are resided (City Data, 2013, p. 5).

Table 4 displays the communication arts scores and categories by grade level. According to MODESE, in 2008 grade three had 12.8% that scored proficient or advanced in communication arts per the Missouri Assessment Program. Fourth grade scored 16% and fifth grade scored 22.5% in the same category. Over 75% of the students in grades three through five were considered to be basic and/or below basic in communication arts.

Table 5 indicates the MAP communication arts scores of the study site from 2008 through 2011. In 2009, third grade scored 11.7% in proficient and/or advanced category. Over 85% of third grade students were basic or below basic in communication arts. Fourth grade scored 35% in the proficient and/or advanced and 65% were in the basic

and/or below basic category. Fifth grade showed 20% scoring proficient and/or advanced in communication arts with 80% scoring at basic and/or below basic.

In 2010, third grade scored 29.5% in proficient and/or advanced category. Over 70% of the third grade students were basic and/or below basic in communication arts. Fourth grade scored 19.7% in the proficient and/or advanced and more than 80% were in the basic and/or below basic category. Fifth grade showed 34.5% scoring proficient and/or advanced with more than 65% scoring at basic and/or below basic in communication arts.

Table 5.

Study Site MAP Communication Arts Data 2009-2011

Grade Level	Year	Below Basic	Basic	Proficient	Advanced
Third Grade	2011	7.9	58.7	27.0	6.3
Third Grade	2010	20.5	50.0	15.4	14.1
Third Grade	2009	18.2	70.1	7.8	3.9
Fourth Grade	2011	13.1	32.8	26.2	27.9
Fourth Grade	2010	16.9	63.4	16.9	2.8
Fourth Grade	2009	7.0	57.9	24.6	10.5
Fifth Grade	2011	19.0	55.2	20.7	5.2
Fifth Grade	2010	6.9	58.6	19.0	15.5
Fifth Grade	2009	12.0	58.0	18.0	12.0

Note. Adapted from MODESE: Guided Inquiry/Achievement (2012).

In 2011, third grade scored 33.3% in proficient and/or advanced category. More than 65% of the third grade students were basic and/or below basic in communication arts. Fourth grade scored 54.1% in the proficient and/or advanced and more than 55% were in the basic and/or below basic category for communication arts. Fifth grade scored

25.9% in the proficient and/or advanced category with less than 75% scoring at basic and/or below basic communication arts.

The study site's free and reduced lunch increased from 83.01% in 2008 to 90.20% in 2011. In 2012, the free and reduced lunch was 89.09%. The current free and reduced lunch percentage for the school is 87.5. The data leads one to conclude that the study site has a high free and/or reduced lunch rate with students performing low in reading.

Which Comes First, Literacy or Poverty?

Literacy and poverty are terms often interchanged when discussing each other. However, one must come before the other. One should consider whether a person's illiteracy led them to poverty, or poverty led one to being illiterate. One could ask, are all individuals that live in poverty deemed to be illiterate? And, which precedes the other?

Family structure and parents play a critical role in literacy. Factors such as family size, parents in homes, gender distribution, economic status, availability of parents, parent role models, and birth order can have major impacts on a child's reading (Binkley, Williams, & Westat, 1996).

At the time of this writing, the family structure has changed drastically over the past three decades. The typical family structure of a father, mother, and two children had been overturned with changing divorce rates, unwed mothers, and mothers in the workforce. All of these affects potentially contributed to the literacy scores and rates experienced at the time (Binkley et al, 1996).

According to Binkley et al. (1996) evidence proved that poverty handicapped some students. Children born to impoverished circumstances are less likely to attend early childhood programs and are more likely to be retained and/or dropout of school.

The amount of time spent with children and money spent on children are considered to be investments and have ability to increase academic skills (Hartas, 2011).At the time of their writings Binkley et al. indicated 46% of Black children live in poverty as compared to 16% of White children. Students from families of poverty score 27 points less than the mean for all students. Students from families of wealth have an average score of 15 points higher than the average of all students (p. 42). Socio-economic factors have a strong effect on children and their language/literacy skills. Children of low socio-economical homes, language/literacy, and social development are weaker than those of their peers. Despite the home instruction efforts of parents, the socio-economic status is a factor in the child's educational future (Binkley et. al., 1996).

Effects of Illiteracy

Understanding how illiteracy evolves is important. However, knowing the actual effects of illiteracy is even more important. There are several serious negative impacts of not being able to read on or above grade level in early grades. For example, when students are not on grade level in reading by the third grade, they are more likely to not graduate from high school by the age of 19. Students who are reading at or above grade level by grade three will more than likely graduate from high school by age 19. However, children who live in poverty for a year or more with the same circumstance may experience a more drastic outcome (Hernandez, 2011, p. 4).

Simon (2011) stated, following review of "Illiteracy: The Downfall to American Society", that the impact of illiteracy worsens as the child becomes an adult. Many individuals who were unable to read experienced lower pay and some became incarcerated. Illiterate individuals were more than likely receive food stamps at a rate of

17% to 19%, in comparison to 4% of the individuals who were literate (Simon, 2011, p. 1).

The cost of illiteracy is major and continues to rise. In 2012 the United States government incurred over $300 billion dollars in cost due to the high illiteracy rate. The large amount of money is mostly due to the social services that are illiterate individuals typically utilize, such as welfare programs, healthcare cost, and the judicial system (World Literacy Foundation, 2012, p.1).

Summer Reading Loss and Disadvantaged Students

The effects of illiteracy were troubling. It was imperative to find ways to address the overall effects of illiteracy. Therefore, understanding the relationship between summer reading loss and disadvantaged students was important.

While some students' vacation plans excluded any form of education, as it is time for pleasure, this may not have been the best plan for them academic-wise. Most parents, teachers, school administrators, and students were all excited to begin their summer vacations at the end of May or beginning of June, yet they were not happy to know that the reading skills gained by students the previous year could be lost over the summer break. Summer reading could affect students' overall reading achievement (Mraz & Rasinki, 2007).

Rasinki, a professor of literacy education said that research showed that elementary school children could lose three months' worth of reading progress during summer break. According to Cooper et. al. (1996), Rasinki indicated it was possible to lose one and a half years of reading achievement through the sixth grade, promoted by

summer breaks from school. All younger students will have some form of losing information when not exposed to instruction during the summer (Cooper et al., 1996).

Cooper et al. (1996) stated in their research study that students typically scored lower on standardized tests at the end of summer vacation than they did on the same tests at the beginning of summer vacation. Their studies revealed that the greatest areas of summer loss for all students, regardless of socio-economic status, were in factual or procedural knowledge. Low-income children and youth experienced greater summer learning losses than their higher income peers, as they were often not in literature rich environments. Low-income students experienced an average summer learning loss in reading achievement of over two months (Cooper et al.). Cooper et al.'s studies showed that out-of-school time was a dangerous time for unsupervised children and teens. Unsupervised students were more likely to engage in illegal alcohol and drug use. Students of this nature will also have a higher chance of being involved in criminal activities. In comparison to students that are supervised by responsible adults, the students will experience a decline in grades resulting in dropping out of school (Carnegie Council, 1994).

Kim and White (2008) reported that in the summer, student's learning can decline. The literacy loss is greater than the math loss, however both can possibly decline. Students, who do not have access to books and literacy resources, tend to decline even more. Young readers, who do not continue to read over the summer, especially those who are considered at risk, were likely to lose crucial ground. One summer off could mean a whole school year of struggling academic performance (McGill-Franzen & Allington, 2003).

In the article, “Summer Reading Loss”, Mraz and Rasinki (2007) discussed the reading achievement gains of Title I reading programs. The findings indicated that reading gains were significantly higher from fall to spring when students were enrolled in reading classes. Reading gains were lower from spring to fall when students were out for the summer months and were not participating in school reading programs.

Bracey (2002) stated that students from low income families suffered more from summer loss than those from middle class families. Students from low socio-economical areas were at a disadvantage. Libraries in these areas did not provide a diverse selection of books for students to select. In other affluent areas the libraries had a more abundant source of reading material for students. The lack of diverse text worsened in the summer time when the school libraries were closed and the area libraries were the students’ only option. Reading comprehension falls steeply for low income students, but only slightly for wealthier kids. The achievement gap between the two can be accounted to the information concerning access to resources for low income students lose in the summer time while on summer break (Jehlen, 2008).

A study completed in a Title I school found that interventions provided in the school during the school year may not be enough to assist students in increasing achievement (Bracey, 2002). The findings showed that students needed extra support outside the regular school year to make gains. Summer school could assist and be the extra support needed. In addition, if instruction improved in the low income schools student achievement would also improve (Bracey).

Traditional School Calendar

The traditional school calendar was most commonly implemented throughout the United States, compared to other calendar arrangements. However, whether a traditional calendar was the most beneficial for student achievement has not been proven. The traditional nine month calendar emerged when over half the population of the United States was part agriculture and climate control was limited in school buildings (White, 1999). The traditional calendar school year begins in August or early September and ends the year in May. Students are off during the summer for approximately 12 weeks.

The traditional calendar was deemed to be relevant, since most parents and families take their vacations during the months of June, July, and August, when school was not in session. When students attended the regular school year they were more focused. Teachers felt the traditional calendar gave more time to prepare students to take state mandated tests. The classroom discipline and student conduct was better during the nine month calendar year (Blankenship, 2007). The traditional calendar allowed families to remain traditional in keeping their long, cultural summer vacations. It also saved many school districts money by not having to spend cost on air conditioning the hot classrooms in the summer. Most communities had student-friendly activities designed around the traditional school year calendar, allowing students from traditional schools to participate (Wildavsky, 1999).

Since the traditional school calendar was implemented in the 19th century, allowing students to be off in the summer to assist in harvesting of plants, it appeared to be outdated. Student lifestyles had definitely changed from the late 19th century, which meant the school calendar also needed some modifications. School districts that relied on

the traditional calendar were basically relying on a calendar traced back to over 150 years ago (Johnson & Spradlin, 2007).

At the time of this writing, only a small percentage of the population was involved in the agriculture process, and traditional school calendars were no longer as beneficial. A traditional school calendar allowed students a long break in the summer which went against the research which, at the time, stated that children learned better when the instruction was continuous. The break caused a disruption in the learning for students (Cooper, 2003).

As previously mentioned, research indicated that there is no longer a need for traditional school calendars. A traditional school calendar does not show a positive relationship with students' learning patterns. Educators considered summer break a hindrance as it seemed to get in the way of retaining information (White, 1999). The traditional schedule, which was considered a factory model, existed because it was convenient for administration (Doyle, 2004).

Year Round School

As summer time appeared to be a time in which students experienced a loss of academic skills, developing programs could be a strategy to reduce the amount of knowledge loss.

Year Round School is the scheduling of educational institutions that allow students to attend classes throughout the entire calendar year. Year-round schedules deliver the same number of total days of classroom education and vacation as traditional calendars, distributed differently throughout the year. Funding considerations favor multi-tracking of students. Multi-tracking allows more students to attend by having

several sessions in progress at different times. More students are able to use the same number of classrooms, instead of constructing entirely new schools (Multitrack, 2013).

Advocates claimed that year-round calendars help raise student achievement and allowed teachers to provide more effective instruction. Reports from the California Department of Education (CDE) showed that standardized test scores increased an average of 13.37% in reading scores following the implementation of year-round schools (Multitrack, 2013). Conversely, opponents insisted that year-round education was detrimental to student learning. Some school board officials and studies indicated negative impacts of schedule changes and year-round education (Multitrack).

Year-round calendars can work in many ways. Southern Regional Education Board (2002) found that year-round schools usually had regular school sessions throughout the year, and the session was followed by a two or three week break. Some year-round schools allowed for one of the weeks to be a makeup session week, which allowed students to catch up with their work. These sessions for struggling students played an integral role in year-round schools. Year-round schools disposed of issues like low student attendance and student participation, as it gave the student breaks throughout the school year. The year-round school possibly could be a helpful opportunity to contribute to narrowing achievement gaps between failing and successful students (Southern Regional Education Board, 2002).

Year-round calendars spread the time usually spent on summer break out over the year, which allowed students to have continuous learning. Year-round calendars consisted of either a single track or multi-track schedule (Kneese, 2000). In a single track, only one session of school is taking place. All teachers and students on this plan are in

school and vacation during the same dates. In a multi-track calendar, there are several sessions taking place. In this calendar format, one session may be in class, while another session is on vacation. The multi-track method allowed for a larger number of students to be serviced as they would not all be present at the same time (Multitrack, 2013).

Mitchell and Mitchell (2005) reported in the multi-track year-round education there is a naturally occurring academic segregation in the year-round calendar. Children in the basic or lowest achieving track were approximately a year and a half behind other students in the highest achieving track. In the multi-track there are a level A, B, C, and D track. The reading scores for the level C had the highest performance across the achievement. Level A and D tracks, with lower scores, had outcomes similar to those attending a traditional school calendar. The B track consisted of the lowest achievement scores. Demographic differences occurred in the multi-track model of year-round school. The students in track B were two and half times more likely to be poor. Track B also included more students from non-English speaking homes. In comparing the highest achieving level of track C with the lowest achieving level of track B, students in track B were two times more likely to be non-Caucasian students (Mitchell & Mitchell).

A year-round school calendar is a more theoretical schedule than other school calendar options. The year-round calendar allowed for half or more than half of the summer break to be rescheduled throughout the school year. The calendar allowed for students who did not maintain formal learning over a two to three month break to retain information learned. Learning could be expanded through the school year to allow students prevention of failure. Students in a year-round calendar would not have to wait until the summer time to receive necessary help, but could have immediate feedback.

During the three weeks between school sessions in the year-round calendar, intercessions were offered to students, to help those students who may need help or to catch up on work (Stenvall, 2001). Stenvall (2001) reported the frequent breaks in the calendar were very satisfying. Student attendance was much better in this calendar, also. Teachers and students loved this calendar option for the fall and the spring holidays that were offered. They also loved the extra winter week that was allowed off in December, which increased the winter break to three weeks instead of the two week allotment in the traditional calendar (Stenvall).

Year-round school caused conflicts in family scheduling and how children learned. When parents in a household worked or when a family structure consisted of a single parent only, this caused a conflict with the year-round schedule as parents had to find child care for their children during the unusually scheduled breaks. Parents usually found themselves every six weeks looking for someone to care for their children for the two weeks they would be off from school. All family trips had to be reconsidered. Vacation, trips to grandma's house, enrichment programs, and summer camps all had to be strategically planned (Friedi, 2009). Some parents believed that learning loss occurred in the first two weeks the students were away from school. Therefore, having frequent two week breaks from school would only decrease student achievement. Extracurricular and sporting activities suffered in this time also. If schools in the same district were not on the same school schedule they would not be able to participate in activities together (Friedi). Cooper (2003) indicated that modifying the school calendar to year-round only had small positive impact on students.

Extended School Year

In the early 2000s, summer school was on the top of the list for policy makers as an important piece in educational benefits and remediation to education. Most Americans experienced the traditional calendar, but some parents, schools, and policy makers were interested in extending the school year to offer summer education to students. According to the Southern Regional Education Board (2002), to help all students succeed states made identification of students at risk of failure a priority to provide them with help during the school year before students fall too far behind. With proper implementation of the programs, many students with difficulties in reading could perform at passing levels by the end of school in the spring. Even with the high quality programs during the school year, some of the lowest performing students could not meet grade level expectations by the end of the school year. Summer school could be some students' last chance to avoid retention, which is known to result in continued failure. A quality summer school program could help struggling students improve their performance and avoid failure (Southern Regional Education Board, 2002).

Wenger-Pelosi (2000) reported that, with correct support, children can reverse summer learning loss, and increase reading achievement by as much as one and a half years. Helping students during the summer months can result in positive changes (Wenger-Pelosi). A solution to summer reading loss is to get reading materials into students' hands and to have schools motivate students during the summer, whether through an incentive program or by keeping school library doors open (Wenger-Pelosi).

All students can benefit from reading in the summer. Keeler (2009) reported that if students read as few as six books during their summer vacation, they can maintain their

current reading level. If they were to read 10 to 20 books, they could also improve their skills. The key factor was getting students to read books that interested them. Allowing students to have access to schools' libraries during the summer would assist in providing students with reading materials. The implications of not offering summer school for struggling students go beyond the prospect of immediate failure.

The Southern Regional Education Board (2002) stated that the summer bridge program used in Chicago Public Schools began in 1997. The program was required for all students who did not pass the Iowa Test of Basic Skills at the end of the third, sixth, and eighth grades. Students would have to attend the program and then retake the test at the end. An average of more than 23,000 students each year had been required to attend the program. Third grade and sixth grade students attended three hours per day for five days each week and eight grade students attended four hours each day for five days a week. The program lasted for seven weeks in the summer after the traditional school calendar year. The teachers who worked for the program were regular Chicago Public School teachers. The program classes used standard curriculum for all three grade levels. The results for the program showed an average of 40% to 50% of students achieved passing scores on the Iowa Test of Basic Skills at the end of the program (Southern Regional Education Board).

Chicago's Summer Bridge Program showed promise as a second opportunity for students who failed the standardized test. This research indicated that participation in the summer program gave students a short term gain in standardized testing (Roderick, Bryk, Jacob, Easton, & Allenworth, 1999). Brewster and Fager (2000) indicated the climate of summer school seemed to have an effect on student learning in comparison to traditional

school year. Summer school programs offered smaller classes, more individualized instruction, and a more relaxed learning atmosphere. The experience of success during summer school could boost the students' confidence as learners long term. Summer school may be the primary intervention through which educators prevent cumulative widening of the reading achievement gap (Cooper, Charlton, Valentine, Muhlenbruck, & Borman, 2000).

Summer school offered students a chance to increase academic achievement and enriched opportunities. The demand for summer school was on the rise. Almost 10% of all the high school and elementary student population in America, an equivalence of five million students, were enrolled in summer school (Boss & Railsback, 2002). There were several programs that helped provide financial support for summer programming. Boss and Railsback (2002) predicted that summer school enrollment would continue to increase for four reasons:

> 1) The family structures are changing to more single parent and working families that need child care services during the summer break; 2) Policymakers indicate concern about the educated workforce being available and global economic competition; 3) More focus is being placed on the accelerated academics standards across the world; and 4) More focus being placed on the issues that effect of the achievement gap between students with a low socio-economic background as compared to others. (p. 86)

Summer school offered students the opportunity to have a longer year of schooling. If a concept was not mastered during the traditional year, students were given a second chance to master it. The climate that students were exposed to during summer

school was another factor that had an effect on students' learning. Success in summer school increased confidence as a lifelong learner. Summer instruction was effective when its concentration was on preventing learning difficulties, increasing learning through positive interactions, providing instruction in smaller groups-more individualized, and when it required parents to be involved (Boss & Railsback, 2002). Studies have shown that summer school and other learning problems helped assist in narrowing the achievement gaps between low and middle income students (Jehlen, 2008).

A research study conducted in 11 of Baltimore, Maryland's elementary schools in 2000, which included 250 kindergarten and first grade students who attended summer school, showed that students who attended the summer school program outscored 81% of the students who did not attend the summer program (Black, 2005). The program success was attributed to the fact that the students attended regularly, emphasis was placed on reading, phonological awareness skills were included, and undersized class instruction took place (Black).

According to Cooper, Valentine, Charlton, and Melson (2003), since summer school was offered after a traditional school year calendar, it was usually arranged in a short time frame. Most districts were not sure in advance about the availability of funds, so they waited until the last minute to begin summer school planning. Starting late with summer school has a potential negative effect by not providing teachers with enough time to plan. It can also lead to delay in the arrival of instructional materials.

Some summer school programs are designed to make summer school feel just like a regular school year (Boss & Railsback, 2002). Since students have just completed the regular traditional year, this may contribute to low attendance or lack of motivation.

When summer school is offered and the attendance requirements are mandatory, the accountability can lead to students feeling as if they are being punished. Then on the other hand, it can be offered with attendance as optional. This could promote low attendance in summer school programs (Boss & Railsback).

Assessing Reading

Students benefit from being placed in a school calendar that works best for them. However, properly assessing reading determines if the program is successful. When teachers are assessing reading, it is essential that they have a significant knowledge of literacy and the development of reading. Therefore, sense can be made of the literate activities students are involved with and the reasons they chose to do them (Johnston, 1997). Effective instructors are always assessing students to provide a rationale to adjust their instruction through language, focus, and materials that they are using. Modifications in instruction allow students to be challenged and become successful learners (Lyons & Pinnell, 2003).

Reading and application of literacy are difficult tasks that include several divisions. In order to assist students with reading, it is imperative to identify the needs of the student first. A formal or informal test can be used to help identify the needs. Reading fluency consists of two components: word recognition and comprehension. The components are assessed in two different forms. One form of assessment is a diagnostic test and another form is an achievement test. The diagnostic test allows one to receive information on the students' strengths and weaknesses (Malatesha, 2005). An achievement test shows how much has been learned or achieved. Assessment and testing are unique and have different properties. Assessments allow data to be collected about the

student's ability; whereas, testing is used to accomplish a specific goal. Each component of reading needs be tested separately and the information be assessed thoroughly (Malatesha, 1995).

AimsWeb

AimsWeb is a reading assessment that was leading all other assessments in frequency of usage in schools, at the time of this writing. The entire program was computer based and it could be used for students in kindergarten through 12th grade. The program was developed to help in improving the instruction provided to students and the effectiveness of teachers. Both the United States and Canada experienced better student outcomes with using the AimsWeb system (Daniel, 2010).

The AimsWeb Curriculum Based Measurement (CBM) was used as a benchmark assessment and for ongoing progress monitoring throughout the school year. The assessment was designed to give a key picture of the foundational skills in reading that a student may need. The system created realistic documents to evaluate student, class, grade, district, and state level data (Daniel, 2010).

Summary

In summary, all school calendar choices have several advantages and disadvantages. The structures are deemed effective depending on the kind of student involved. This literature review has indicated that all students will not benefit from each method, though some students may. The calendar modification is an important topic in education. All educators and school districts want to make sure they are doing the best thing for all, or if not all the majority of the students. School districts basically want to see all students succeed.

There are several factors that influence reading and literacy. However, poverty has an effect on reading ability. Several countries that are wealthy may not experience as many issues with reading as poorer countries. The United States and other countries are experiencing many of the same issues with reading. The effects of illiteracy are widespread and far-reaching.

In order to see what method may be most effective for low-income and disadvantaged students, a research study will be conducted. The research study will explore the effects of summer school and it's correlation to lexile levels of African American students of a low socio-economic area in grades one through four. It will provide information regarding whether summer school lexile levels increase, decrease, or remain the same, in comparison to student achievement of students with the same demographics who did not attend summer school.

Chapter Three: Methodology

Introduction

At the time of this writing, African American students were scoring below other races in reading across the United States. Research indicated that the socio-economic status played a critical role in this development. Educators were seeking ways to narrow the academic achievement gap between African American students and other races. This quantitative study examined the potential contribution the benefits of summer school could make toward reading achievement. The researcher evaluated the relationship between summer school attendance and the following lexile levels of African American students in grades one through four. The research question and Null Hypotheses used to analyze data were:

Research Question

What effect will summer school attendance have on reading lexile levels for African American Students from a low socio-economic area?

Null Hypothesis # 1

The average lexile levels of African American students in grades one through four will not exceed the expected age-appropriate lexile level.

Null Hypothesis # 2

There will be no relationship between attendance in summer school and reading levels of first through fourth grade African American students in a low socio-economic area, as identified by summer growth in lexile level provided by the AimsWeb RCBM Assessment.

Null hypothesis # 3

There will be no difference in summer growth in lexile levels between the control group not attending summer school and the intervention group attending summer school for first through fourth grades, as measured by AimsWeb RCBM.

Null Hypothesis # 4

There will be no increase in lexile level when comparing post-to pre-test values for summer school attendees in grades one through four.

Study Site School District

The study site school district was located in the north portion of St. Louis County, Missouri, and serviced several small municipalities. The elementary school was located in a low socio-economical area of northeastern Missouri, from which the secondary data for analysis was provided.

Figure 2 shows the study site community had 79% of the homes in the area listed as rental properties. Less than 22% of the residents owned the home they resided in. Twenty-two percent of the residents with an income were below poverty. Twenty-seven percent of the children were living below poverty. The area had 77% of the households noted as being single-mother households. Only 4% of the community had full-time jobs. Fifty-five percent of the individuals that resided in the study site community had part-time jobs.

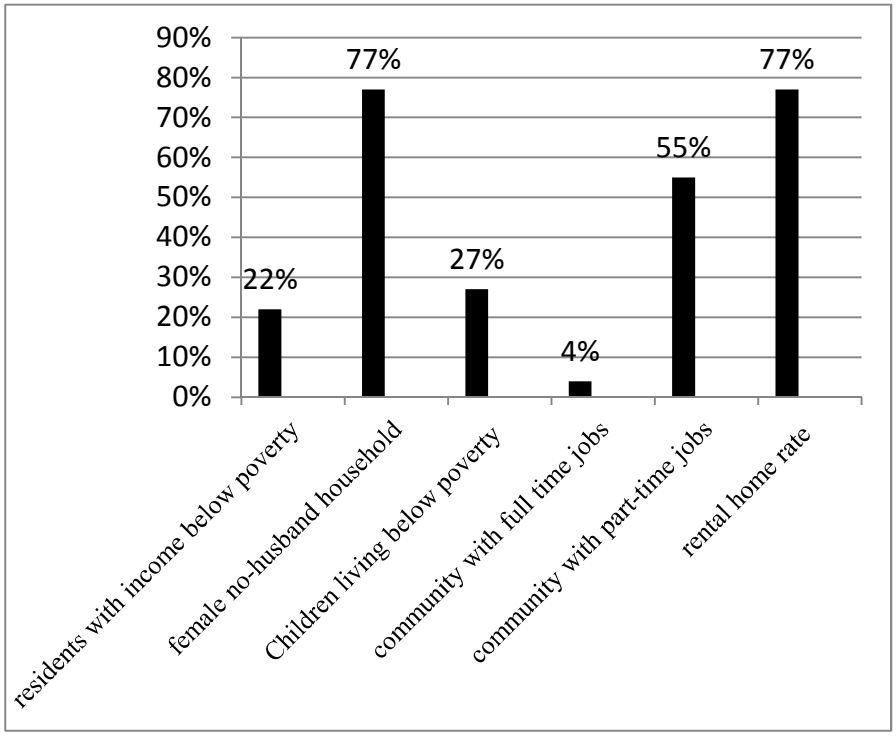

Figure 2. Demographics of Study Site Community.
Adapted from: Study-Site School District (2013). City data: Poverty rate.

The school had a total population of 343 students, in which 98.8% were African American. The free and/or reduced lunch percentage was 89.8%. Table 6 displays information for demographics for the state of Missouri. State levels for total school enrollment for 2010 through 2013 decreased from 892,391 to 888,208. The percent of Black ethnicity decreased from 17.80% to 16.60% for those same years. The Free and Reduced Lunch rates increased from 46.9% to 49.9%.

In comparison to the state of Missouri, for the year of summer school participation, 2012, the state as a whole had 886,132 for student enrollment, with 16.60% African American and 73.70% Caucasian. The free and/or reduced lunch rate was 49.9%.

Table 6.

State of Missouri: Ethnicity and Free and/or Reduced Lunch

Missouri	2010	2011	2012	2013
Total Enrollment	892,391	889,655	886,132	888,208
Asian Percent	2.00	1.80	1.90	1.90
Black Percent	17.80	17.10	16.80	16.60
Hispanic Percent	4.00	4.50	4.80	5.10
Indian Percent	0.50	0.50	0.50	0.50
White Percent	75.80	74.80	74.20	73.70
Free/Reduced Lunch (FTE)	46.9	47.8	49.5	49.9

Note. Adapted from MODESE (2012). Free and Reduced Lunch

Table 7 indicates ethnicity and the free and/or reduced lunch rates for the study site school district for the years 2010 through 2013. In 2013, the study site school district had a total enrollment of 17,882 students. In 2012, the number was slightly smaller at 17,752 students. At the time of this writing the district had 72% African American students and 24% Caucasian students. There were 71% African American students and 25% Caucasian students in study year of 2012. The free and/or reduced lunch was 59.8% in 2012 and decreased in 2013 to 57.2%.

Table 7.

Study School District: Ethnicity and Free and/or Reduced Lunch

Study Site School District (096088)	2010	2011	2012	2013
Total Enrollment	18,378	18,074	17,752	17,882
Asian Percent	1.10	1.10	1.10	1.00
Black Percent	69.50	70.60	71.30	72.00
Hispanic Percent	1.60	1.80	1.90	2.10
Indian Percent	0.10	0.10	0.10	0.10
White Percent	27.60	26.10	25.10	23.90
Free/Reduced Lunch (FTE) Percent	55.5	57.6	59.8	57.2

Note. Adapted from MODESE (2012). Free and Reduced Lunch

Study Site School Building: Demographics and Communication Arts MAP

Table 8 shows the ethnicity and the free and/or reduced lunch rates for the study site building. The demographics of African Americans students and free and/or reduced lunch increased drastically when narrowing in on the study school site. The study school site in 2012 had 98.8% African American students and only 0.30% Caucasian students out of the 343 total school enrollment. The free and/or reduced lunch rate was 89.9%. In 2013, the school had 97.90% African American students and 0.60% Caucasian students out of the 336 total enrollment, with 87.5% receiving free and/or reduced lunch. The large percentage of African American enrollment in the study site offered a unique look at the effects of summer school attendance on reading lexile levels for African American students.

Table 8.

Study Site Ethnicity and Free and/or Reduced Lunch

Year	Total Enrollment	Asian (Percent)	Black (Percent)	Hispanic (Percent)	Indian (Percent)	White (Percent)	Free/Reduced Lunch (FTE) (Percent)
2013	336	0.00	97.90	0.90	0.00	0.60	87.5
2012	343	0.30	98.80	0.30	0.30	0.30	89.9
2011	418	0.20	97.60	1.00	0.50	0.70	90.2
2010	451	0.00	98.20	0.40	0.20	1.10	90.2

Note. Adapted from MODESE (2012). Free and Reduced Lunch

Table 9 shows the MAP assessment scores from 2009 through 2011 for grades three through five in communication arts. In 2009, third grade scored 11.7% in the proficient and advanced category. Over 85% of third grade students were basic or below basic in communication arts. Fourth grade scored 35% in the proficient and advanced and 65% were in the basic or below basic category for communication arts. Fifth grade showed 20% scoring proficient and advanced with 80% scoring at basic or below basic in communication arts.

In 2010, third grade scored 29.5% in proficient and advanced category. Over 70% of the third grade students were basic or below basic in communication arts. Fourth grade scored 19.7% in the proficient and advanced and more than 80% were in the basic or below basic category for communication arts. Fifth grade showed 34.5% scoring proficient and/or advanced with more than 65% scoring at basic or below basic in communication arts.

Table 9.

Study Site MAP Communication Arts Data: 2009-2011

Grade Level	Year	Below Basic	Basic	Proficient	Advanced
Third Grade	2011	7.9	58.7	27.0	6.3
Third Grade	2010	20.5	50.0	15.4	14.1
Third Grade	2009	18.2	70.1	7.8	3.9
Fourth Grade	2011	13.1	32.8	26.2	27.9
Fourth Grade	2010	16.9	63.4	16.9	2.8
Fourth Grade	2009	7.0	57.9	24.6	10.5
Fifth Grade	2011	19.0	55.2	20.7	5.2
Fifth Grade	2010	6.9	58.6	19.0	15.5
Fifth Grade	2009	12.0	58.0	18.0	12.0

Note. Adapted from MODESE (2012). Communication Arts

In 2011, third grade scored 33.3% in proficient and advanced category. More than 65% of the third grade students were basic or below basic in communication arts. Fourth grade scored 54.1% in the proficient and advanced and more than 55% were in the basic or below basic category in communication arts. Fifth grade showed 25.9% scoring proficient and advanced with less than 75% scoring at basic or below basic in communication arts.

The study site did meet the state required Adequate Yearly Progress (AYP) mark in 2011, as the students' growth did increase in grades three through five in the proficient and advanced category. The categories of basic and below basic decreased in percentage as students moved into the higher categories of advanced and proficient.

Participants

Participations for this research were not recruited, as secondary data was provided by the study site district from a low socio-economical elementary school in the district.

As the data was already collected by the school district, a research application was completed and approved, so the school district could provide the data to the researcher. The secondary data provided was recorded by the district for students who lived in the study site area and attended the study site school. The study site school district gathered the data to show pre-and post-assessment measures at the end of the spring 2012 and the beginning of fall 2012. A random sampling of 120 students, 60 who attended summer school and 60 who did not, from the 343 member school population were be used. The sampling included 15 students from each grade level. Appendix Tables A1 through A8 show the lexile levels resulting from stratified random sampling.

Table A1 shows the sample of the 15 first grade students who attended summer school. The chart notes the pre-and post-lexile level for each student. The lexile levels ranged from Below Reading (BR), 0 to 625L for this group of students. Table A2 shows the sample of the 15 second grade students who attended summer school. The chart notes the pre-and post-lexile level for each student. The lexile levels ranged from 140L to 605L for this group of students. Table A3 shows the sample of the 15 third grade students who attended summer school. The chart notes the pre-and post-lexile level for each student. The lexile levels ranged from 60L to 650L for this group of students. Table A4 shows the sample of the 15 fourth grade students who attended summer school. The chart notes the pre-and post-lexile level for each student. The lexile levels ranged from 115L to 715L for this group of students.

Table A5 shows the sample of the 15 first grade students who did not attend summer school. The chart notes the pre-and post-lexile level for each student. The lexile levels ranged from BR, 0 to 360L for this group of students. Table A6 shows the sample

of the 15 second grade students who did not attend summer school. The chart notes the pre-and post-lexile level for each student. The lexile levels ranged from 10L to 490L for this group of students. Table A7 shows the sample of the 15 third grade students who did not attend summer school. The chart notes the pre-and post-lexile level for each student. The lexile levels ranged from 130L to 885L for this group of students. Table B8 shows the sample of the 15 fourth grade students who did not attend summer school. The chart notes the pre-and post-lexile level for each student. The lexile levels range from BR, 0 to 820L for this group of students.

Developing the Intervention

The study school district offered summer school every year. The practice of summer school attendance was already taking place prior to this study. The summer school program was a four week program focused on math and reading. Summer school was available to any student in the school district who could attend their school site for summer school.

As a Reading Specialist in the school district and a part of the retention team, the researcher experienced first-hand that recommendations were made for students to attend summer school if academic progress was below grade level in reading. Often in the district when students did not made progress during the traditional calendar year it was a requirement for those students to attend summer school to allow them to proceed to the next grade level.

The purpose of this quantitative study was to determine what type of potential effect summer school had on the reading levels of African American students of a low socio-economical area versus those who additionally attended summer school. The

researcher will examine if summer school attendance contributed to an increase in the reading level, a decrease the reading level, or a constant level, as compared to students who did not attend summer school. The study used data from the control group of students who did not attend summer school and an intervention group who did attended. Data from AimsWeb RCBM Assessment provided two scores, fluency and a lexile levels were used to determine the potential contributions.

African American students from a low socio-economical area were performing lower than other races in different communities (Ramani, Gilbertson, Fox, & Provasnik, 2007). This study could potentially benefit by contributing to an increase in student reading levels. This could also allow many school districts to evaluate if summer school is a beneficial way to narrow the achievement gap and improve reading levels of African American students in a low socio-economical area. Schools and school districts will be able to use recommendations to provide reinforcement tools and remedial programs that will lead African American students to be successful in reading. As a large amount of funds were utilized to provide summer instruction, the research could provide overall insight to show if there is a better use of funds or if summer school significantly improves reading levels. This study will also be beneficial in implementing Common Core State Standards, as it provides the teachers and administrators more opportunities to differentiate instruction. Instructors can use the lexile level to place students in the correct level within the standards for instructional purposes. Implementation will meet students at their individual instructional level and provide a more effective summer school using the Common Core State Standards.

Data Collection and Analysis Procedures

A study site school district research application was submitted prior to the IRB approval for Lindenwood University to gain permission to utilize secondary data from the summer school of 2012 for research purposes. The district provided the secondary data from the summer school program 2012 from students of the identified study site school. The summer school program was a four week, 20-day program that met four hours each day. The students received instruction in mathematics and reading. The primary investigator met with school's administrator to receive and review the student data.

The data included a roster of all students who attended summer school from the identified school in the summer of 2012 specifying the race, AimsWeb RCBM score with the lexile level for May 2012 and August 2012 for first through fourth grade students, and a list of students who did not attend summer school for that session. Using the data, the two groups were researched: the control group of students who did not attend summer school and an intervention group of students who did attend summer school. A stratified random sampling of 60 students from the 343 school's population was used to conduct the quantitative research.

Data was analyzed to indicate the potential correlation between summer school attendance of African American students in grades one through four using the AimsWeb assessment that provides two measures, fluency in words per minute and lexile levels. A *t*-test for difference in means checked to see if students in the samples met or exceeded the appropriate age target for lexile level in reading. A Pearson Product Moment Correlation Coefficient was used to check for a relationship between summer school attendance and improvement in the reading lexile levels. A *t*-test for difference in means

was used to check for a difference in the levels of improvement in reading lexile levels between the control and intervention groups. And, a *t*-test for difference in means was used to check for potential significant improvement between the pre-and post-test for reading lexile levels for both the control and intervention groups.

Sample Descriptive Data

For this research, the AimsWeb assessment data for the fall of 2012 was used as a post-test for comparison to the spring of 2012 as a pre-test. This allows comparison of post-test results to pre-test results for both the control group and intervention group. It also allowed calculation of growth, measured by the gain or loss in subtracting the pre-test lexile level from the post-test level.

Table 10.

Building Post-Test Descriptive Data: AimsWeb

	Post –Test
Mean	332.29
Standard Error	18.77
Median	305.00
Mode	120.00
Standard Deviation	205.58
Sample Variance	42261.30
Kurtosis	-0.31
Skewness	0.51
Range	885
Minimum	0
Maximum	885
Sum	39875
Count	120

Note. n=120

Table 10 shows the descriptive information and range of the post-test scores for the entire sample of 120 students used in the research. The data includes 60 scores for students who attended summer school and 60 scores for students who did not attend summer school. The average mean score was 332. 29. The range was 885. The minimum score was 0 and the maximum score was 885, with a standard deviation of 205.58. The mode was 205.58.

Table 11.

Building Pre-Test Descriptive Data: AimsWeb

	Pre-test
Mean	341.92
Standard Error	20.42
Median	342.50
Mode	0.00
Standard Deviation	223.66
Sample Variance	50023.61
Kurtosis	-1.11
Skewness	-0.04
Range	855
Minimum	0
Maximum	855
Sum	41030
Count	120

Note. n = 120.

Table 11 shows the descriptive information and range of the pre-tests of the entire sample of 120 students. The data includes 60 students who attended summer school and 60 students who did not attend summer school. The average mean score was 341.92. The range was 855. The minimum score was 0 and the maximum score was 855, with a standard deviation of 223.66. The mode was 0.00.

Table 12.

Building Growth Descriptive Data: AimsWeb

	Growth
Mean	-9.63
Standard Error	8.35
Median	0.00
Mode	-70.00
Standard Deviation	91.43
Sample Variance	8359.73
Kurtosis	0.72
Skewness	0.17
Range	565
Minimum	-250
Maximum	315
Sum	-1155
Count	120

Note. n = 120.

Table 12 gives a different view of the descriptive information. It shows the reading lexile level growth of the entire sample of 120 students by giving the difference between the post-test and pre-test scores. The data includes 60 students who attended summer school and 60 students who did not attend summer school. The average mean growth was -9.63. The range was 565. The minimum score was -250 and the maximum score was 315, with a standard deviation of 91.43. The mode was -70.00.

Table 13 shows the growth of students who attended summer school in grades one through four. The data includes the sampling of 60 students who attended summer school with 15 from each grade level. The mean was -6.17 with a standard deviation of 89.06. The range was 390 and the table indicates a minimum score of -170 with a maximum score 220. The median of this data was 5 and the mode was -65.

Table 13.

Growth *of Students who Attended Summer School*

Growth	
Mean	-6.525
Standard Error	11.687
Median	5
Mode	-65
Standard Deviation	89.775
Sample Variance	8059.701
Kurtosis	-0.499
Skewness	0.163
Range	390
Minimum	-170
Maximum	220
Sum	-385
Count	59
Confidence Level (95.0%)	23.395

Table 14 shows the growth of students who did not attend summer school in grades one through four. The data includes the sampling of 60 students who did not attend summer school with 15 from each grade level. The mean was 13.08 with a standard deviation of 94.37. The range was 565, with a minimum score of -250 and a maximum score of 315. The median of this data was -5 and the mode was -70.

Table 14.

Growth of Students who Did Not Attend Summer School

Growth	
Mean	-13.305
Standard Error	12.389
Median	-5
Mode	-70
Standard Deviation	95.165
Sample Variance	9056.560
Kurtosis	1.733
Skewness	0.200
Range	565
Minimum	-250
Maximum	315
Sum	-785
Count	59
Confidence Level (95.0%)	24.800

Appendix Tables B1 through B8 indicate reading lexile growth for individual grade levels by subtracting the pre-test scores that preceded summer school from the post-test scores that followed summer school during the year of 2012. The information is divided into separate tables for those who did attend summer school and those who did not attend, by grade level.

Table B1 shows the growth of the first grade students who attended summer school. The data includes the sampling of 15 students. The mean was 92.7, with a median of 80 and a mode of 140. The range was 215, with a minimum of 5 and a maximum of 220. The standard deviation was 57.07. Table B2 shows the growth of the second grade students who attended summer school. The data includes the sampling of 15 students. The mean was -75.67, with a median of -70 and a mode of -95. The range was 190, with

a minimum of -170 and a maximum of 20. The standard deviation was 61.47. Table B3 shows the growth of the third grade students who attended summer school. The data includes the sampling of 15 students. The mean was -42.67, with a median of -55 and a mode of 25. The range was 240, with a minimum of -150 and a maximum of 90. The standard deviation was 74.35. And Table B4 shows the growth of the fourth grade students who attended summer school. The data includes the sampling of 15 students. The mean was 1, with a median of 10 and a mode of -35. The range was 220, with a minimum of -105 and a maximum of 115. The standard deviation was 61.12.

Table 15.

Summer School Attendees Descriptive Average Growth

	1st	2nd	3rd	4th
Mean	92.67	-75.67	-42.67	1
Standard Error	14.73	15.87	19.2	15.78
Median	80	-70	-55	10
Mode	140	-95	25	-35
Standard Deviation	57.1	61.47	74.35	61.13

Note. n = 60.

Table 15 includes the data from all grades one through four. The table includes information for summer school attendees' growth. The mean, standard error, median, mode, and standard deviation are all noted for each individual grade level.

Appendix Tables B5 through B8 indicate descriptive information for scores gathered from the control group, those students who did not attend summer school. Table B5 shows the growth of the first grade students who did not attend summer school. The data includes the sampling of 15 students. The mean was 40.33, with a median of 25 and

a mode of 0. The range was 115, with a minimum of 0 and a maximum of 115. The standard deviation was 41.03. Table B6 shows the growth of the second grade students who did not attend summer school. The data includes the sampling of 15 students. The mean was -69, with a median of -70 and a mode of -70. The range was 390, with a minimum of -250 and a maximum of 140. The standard deviation was 92.53. Table B7 shows the growth of the third grade students who did not attend summer school. The data includes the sampling of 15 students. The mean was 25.67, with a median of -15 and a mode of -15. The range was 475, with a minimum of -160 and a maximum of 315. The standard deviation was 105.41. Table B8 shows the growth of the fourth grade students who did not attend summer school. The data includes the sampling of 15 students. The mean was -49.33, with a median of -70 and a mode of -70. The range was 300, with a minimum of -220 and a maximum of 80. The standard deviation was 82.18.

Table 16.

Non-Summer School Attendees Descriptive Average Growth

	1st	2nd	3rd	4th
Mean	40.33	-69	25.67	-49.33
Standard Error	10.6	23.89	27.22	21.22
Median	25	-70	15	-70
Mode	0	-70	-15	-70
Standard Deviation	41.03	92.53	105.41	82.18

Table 16 includes the data from all grades one through four for the control group. The table includes information for non-summer school attendees' growth. The mean, standard error, median, mode, and standard deviation are all noted for each individual grade level.

Measurement and Tools

AimsWeb was a reading assessment that was leading all other assessments in schools at the time of this writing. The entire program was computer-based and it could be used for students in kindergarten through twelfth grades. The program was developed to help improve the instruction provided to students and the effectiveness of teachers in the area of reading. Both the United States and Canada experienced better outcomes with using the AimsWeb system. The AimsWeb Curriculum Based Measurement (CBM) was used as a benchmark assessment and ongoing progress monitoring throughout the school year. The assessment was designed to give a key picture of the foundational skills in reading that a student may need. This assessment was considered to be one of the most powerful assessments and it provided actionable data. The system created realistic documents to evaluate student, class, grade, district, and state level data (Daniel, 2010).

Press Release Web (2009) reported that AimsWeb web-based assessment was considered to be a reliable and valid assessment of literacy. The assessment received the highest rating possible from the National Center on Response to Intervention (RCRTI). The rating indicated that the AimsWeb assessment was a great tool for predictive validity and reliability. The assessment provided a clear, accurate assessment of a student's reading skills in a timely manner and provided a connection to the instructional need of students.

Summary

The study site had some varying circumstances, as compared to the state and the school district. These factors could play a key role in the outcome of the school's performance. As the study site school had over 90% African American students and over

half of the school was performing in the basic or below basic categories in MAP testing, it was imperative the students received the tools they needed to make progress.

The AimsWeb assessment was used to determine the pre-and post-scores of the sampling students, following the intervention of summer school attendance. The assessment was valid and reliable, which made the data a better predictor of the success of summer school for students, if the research results returned significant findings. The secondary data provided in this chapter will aid in answering the research study questions addressed quantitatively in Chapter Four.

Chapter Four: Results

This chapter will provide the findings from analysis of secondary data consisting of AimsWeb RCBM lexile levels retrieved from the research study site for the spring and early fall of 2012. All materials for the study were reviewed by the primary investigator of the research study. The data was evaluated to determine the potential correlation between of summer school attendance and reading lexile levels of African American students of a low socio-economical area in grades one through four.

Null Hypothesis # 1

Null hypothesis # 1 states: The average lexile levels of African American students in grades one through four will not exceed the expected age-appropriate lexile level.

First Grade

Null hypothesis #1a states: The average pre-test lexile levels of African American students in first grade will not exceed the expected age-appropriate lexile levels of 325. The sampling of students in the first grade that attended summer school had an average pre-test lexile level of 89L. Only two student scores out of the 15 used had a lexile over 325L. The sampling of first grade students that did not attend summer school had an average pre-test lexile level of 76L. There were no student scores with a lexile level over 325L.

Null hypothesis #1b states: The average post-test lexile levels of African American students in first grade will not exceed the expected age-appropriate lexile levels of 350. The average post-lexile level of students in the first grade that attended summer school was 182L. The sample included 15 student scores, in which only two had a lexile level of 350 or higher. The average post-lexile level of students in the first grade

that did not attend summer school was 116L. Only one had a lexile level of 350 or higher. Appendix Tables C1 and C2 indicate raw data used for samples.

Table 17 shows results of the *t*-test for the first grade sampling of students. Summer School pre-test *t*-test value was -7.48 and the post-test *t*-test value was -6.41. Of the sampling for first grade students that did not attend summer school the pre-test *t*-test value was -9.99 and the post-test *t*-test value was -8.85.

Table 17.

First Grade t-Test Results

	Summer School	No Summer School
Pre-Test	-7.48	-9.99
Post-Test	-6.41	-8.85

Note. Critical value = 1.761

In reviewing the results from the *t*-test, the pre-test values of -7.48 and -9.99 are less than the critical value of 1.761. The post-*t* test values of -6.41 and -8.85 are also less than the critical value of 1.761. Therefore, the researcher did not reject the null hypothesis. The data does not support the alternate hypothesis. The pre-test averages did not exceed 325L. The post-test averages did not exceed 350L.

Second Grade

Null hypothesis #1c states: The average pre-test lexile levels of African American students in second grade will not exceed the expected age-appropriate lexile levels of 525. The average pre-test lexile level of students in the second grade that attended summer school was 336L. Only one student score in this category had a lexile level of 525L or higher. The average pre-test lexile level of students in the second grade that did not attend summer school was 324L. This category did not have any student score at 525L or higher.

Null hypothesis #1d states: The average post-test lexile levels of African American students in second grade will not exceed the expected age-appropriate lexile levels of 550. The average post-test lexile level of second grade students that attended summer school was 260L. This sampling did not include any student with a 525L or higher. The average post-test lexile level of second grade students that did not attend summer school was 255L. This category did not have any student to receive a 525L or higher. Appendix Tables C3 and C4 indicate raw data used for samples.

Table 18 shows the results of the *t*-test for the second grade sampling of students. Summer School pre-test *t*-test value is -6.37 and the post-test *t*-test value is -11.86. Of the sampling for second grade students that did not attend summer school the pre-test *t*-test value is –6.61 and the post-test *t*-test value is -8.73.

Table 18.

Second Grade t-Test Results

	Summer School	No Summer School
Pre-Test	-6.37	-6.61
Post-Test	-11.86	-8.73

Note. Critical value = 1.761

In reviewing the results from the *t*-test, the pre-test values of -6.37 and -11.86 were less than the critical value of 1.761. The post-*t* test values of -6.61 and -8.73 were also less than the critical value of 1.761. Therefore the researcher did not reject the null hypothesis. The data did not support the alternate. The pre-test averages did not exceed 525L. The post-test averages did not exceed 550L.

Third Grade

Null hypothesis #1e states: The average pre-test lexile levels of African American students in third grade will not exceed the expected age-appropriate lexile levels of 675.

The average pre-test lexile level of third grade students that attended summer school was 438L. This sampling did not include any student score of 675L or higher. The average pre-test lexile level of third grade students that did not attend summer school was 527L. Four student scores in this category were 675L or higher.

Null hypothesis #1f states: The average post-test lexile levels of African American students in third grade will not exceed the expected age-appropriate lexile levels of 700. The average post-test lexile level of students in the third grade that attended summer school was 396L. This category did not have any student score to meet the grade level expectancy of 700L or higher. The average post-test lexile level of students in grade three that did not attend summer school was 552L. Five out of the 15 student scores met the grade level expectancy of 700L or higher. Appendix Tables C5 and C6 indicate raw data used for samples.

Table 19 shows the results of the *t*-test for the third grade sampling of students. Summer School pre-test *t*-test value is -4.70 and the post-test *t*-test value is -7.83. Of the sampling for third grade students that did not attend summer school the pre-test t-test value is –3.01 and the post-test t-test value is -2.59.

Table 19.

Third Grade t-Test Results

	Summer School	No Summer School
Pre-Test	-4.70	-3.01
Post-Test	-7.83	-2.59

Note. Critical value = 1.761

In reviewing the results from the *t*-test, the pre-test values of -4.70 and -3.01 were less than the critical value of 1.761. The post-*t* test values of -7.83 and -2.59 were also less than the critical value of 1.761. Therefore the researcher did not reject the null

hypothesis. The data did not support the alternate. The pre-test averages did not exceed 675L. The post-test averages did not exceed 700L.

Fourth Grade

Null hypothesis #1g states: The average pre-test lexile levels of African American students in fourth grade will not exceed the expected age-appropriate lexile levels of 775. The average pre-test lexile level of the fourth grade students that attended summer school was 522L. There were no student scores in this category to meet the grade level expectancy of 775L or higher. The average pre-test lexile level of fourth grade students that did not attend summer school was 465L. This category did not have any student scores to meet the grade level expectancy of 775L or higher.

Null hypothesis #1h states: The average post-test lexile levels of African American students in fourth grade will not exceed the expected age-appropriate lexile levels of 800. The average post-test lexile level of fourth grade students that attended summer school was 482L. There were no student scores to meet or exceed the grade level expectancy of 800L. The average post-test lexile of fourth grade students that did not attend summer school was 416L. One of the 15 student scores met the grade level expectancy of 800L or higher. Appendix Tables C7 and C8 indicate the raw data for these hypotheses.

Table 20 shows the results of the *t*-test for the second grade sampling of students. Summer School pre-test *t*-test value is -7.20 and the post-test *t*-test value is -8.10. Of the sampling for fourth grade students that did not attend summer school the pre-test *t*-test value is –5.58 and the post-test *t*-test value is -8.40.

Table 20.

Fourth Grade t-Test Results

	Summer School	No Summer School
Pre-Test	-7.20	-5.58
Post-Test	-8.10	-8.40

Note. Critical value = 1.761

In reviewing the results from the *t*-test, the pre-test values of -7.20 and -5.58 were less than the critical value of 1.761. The post-*t* test values of -8.10 and -8.40 were also less than the critical value of 1.761. Therefore the researcher did not reject the null hypothesis. The data did not support the alternate. The pre-test averages did not exceed 775L. The post-test averages did not exceed 800L.

Null Hypothesis # 2

Null hypothesis # 2 states: There will be no relationship between attendance in summer school and reading levels of first through fourth grade African American students in a low socio-economic area, as identified by summer growth in lexile level provided by the AimsWeb RCBM Assessment.

First Grade

Null hypothesis #2a states: There is no relationship between attendance in summer school and reading levels of first grade African American students in a low socio-economic area, as identified by summer growth in lexile level provided by the AimsWeb RCBM Assessment. In reviewing the data, 100% of the first grade students that attended summer school had an increase in their lexile level from the spring to the fall semester. The average lexile level increased from 89L to 182L. The lowest lexile level in the pre-assessment was a Below Reading (BR), 0 and the lowest score in the post-assessment was a 15L. The highest lexile in the pre-assessment was 405L and the

post-assessment was a 625L. The students in the first grade that did not attend summer school had 80% of the group increase in their lexile levels. The average lexile level increased from 76L in the pre-assessment to 116L in the post-assessment. The lowest lexile level in the pre-assessment was a BR, 0 and the lowest score in the post-assessment was the same. The highest lexile in the pre-assessment was 270L and the post-assessment was a 360L. Therefore, it can be concluded through observation that there is a relationship between summer school and lexile levels of first grade students. Students in the first grade that attend summer school experience more growth than first graders that do not attend summer school. A Pearson Product Moment Correlation Coefficient was calculated to test the possible statistical significance of the relationship.

Table 21 shows the results of the Pearson Moment Correlation Coefficient (PPMCC) for first grade. The results are from the stratified random sampling of students that attended summer school and non-attendees of summer school from the identified grade level. The table shows the test value of 0.254.

Table 21.

First Grade Correlation Coefficient

	Fall Lexile	*Attendance*
Fall Lexile	1	
Attendance	0.254	1

Note. Critical value = 0.514

Since the Pearson Product Moment Correlation Coefficient (PPMCC) of 0.255 was less than the critical value of 0.514, the null hypothesis was not rejected. The data did not support the alternate hypothesis. Therefore, there was no significant relationship between summer school attendance and post-lexile reading scores as measured by AimsWeb.

Second Grade

Null hypothesis #2b states: There is no relationship between attendance in summer school and reading levels of second grade African American students in a low socio-economic area, as identified by summer growth in lexile level provided by the AimsWeb RCBM Assessment. The data shows that 20% of the second grade students that attended summer school had an increase in their lexile levels from the spring to the fall semester. The average lexile level decreased from 336L for the pre-assessment to 260L for the post-assessment. The lowest lexile level in the pre-assessment was a 205L and the lowest score in the post-assessment was a 140L. The highest lexile in the pre-assessment was 605L and for the post-assessment was a 440L. The students in the second grade that did not attend summer school had 20% of the group increase in their lexile levels. The average lexile level decreased from 324L in the pre-assessment to 255L in the post-assessment. The lowest lexile level in the pre-assessment was a 65L and the lowest score in the post-assessment was a 10L. The highest lexile in the pre-assessment was 495L and the post-assessment was a 490L.

Table 22.

Second Grade Correlation Coefficient

	Fall Lexile	*Attendance*
Fall Lexile	1	
Attendance	0.025	1

Note. Critical value = 0.514

Since the Pearson Product Moment Correlation Coefficient (PPMCC) of 0.026 was less than the critical value of 0.514, the null hypothesis was not rejected. The data did not support the alternate hypothesis. Therefore, there was no significant relationship

between summer school attendance and post-lexile reading scores as measured by AimsWeb.

Third Grade

Null hypothesis #2c states: There is no relationship between attendance in summer school and reading levels of third grade African American students in a low socio-economic area, as identified by summer growth in lexile level provided by the AimsWeb RCBM Assessment. The data shows that 33% of the third grade students that attended summer school had an increase in their lexile level from the spring to the fall semester. The average lexile level decreased from 438L for the pre-assessment to 396L for the post-assessment. The lowest lexile level in the pre-assessment was a 60L and the lowest score in the post-assessment was a 125L. The highest lexile in the pre-assessment was 650L and the post-assessment was a 615L. The students in the third grade that did not attend summer school had 53% of the group to increase in their lexile levels. The average lexile level increased from 527L in the pre-assessment to 552L in the post-assessment. The lowest lexile level in the pre-assessment was a 130L and the lowest score in the post-assessment was a 195L. The highest lexile in the pre-assessment was 855L and the post-assessment was 885L. From this data, we can conclude through observation that there is no relationship between summer school and lexile levels as both groups increased. The control group increased 20% more than the intervention group.

Table 23 shows the results of the Pearson Moment Correlation Coefficient (PPMCC) for third grade. The results are from the stratified random sampling of students that attended summer school and non-attendees of summer school from the identified grade level. The table shows the test value of -0.394.

Table 23.

Third Grade Correlation Coefficient

	Fall Lexile	*Attendance*
Fall Lexile	1	
Attendance	-0.394	1

Note. Critical value = 0.514

Since the Pearson Product Moment Correlation Coefficient (PPMCC) of -0.394 is not less than the critical value of -0.514; the null hypothesis was not rejected. The data did not support the alternate hypothesis. Therefore, there was no significant relationship between summer school attendance and post-lexile reading scores, as measured by AimsWeb.

Observably, since the PPMCC was negative, there is an observable inverse relationship. For example, the trend appeared to be summer school attendance resulted in a mild nonsignificant drop in lexile reading measurement. This result could be a result of chance.

Fourth Grade

Null hypothesis #2d states: There is no relationship between attendance in summer school and reading levels of fourth grade African American students in a low socio-economic area, as identified by summer growth in lexile level provided by the AimsWeb RCBM Assessment. The data shows that 53% of the fourth grade students that attended summer school had an increase in their lexile level from the spring to the fall semester. The average lexile level decreased from 522L for the pre-assessment to 482L for the post-assessment. The lowest lexile level in the pre-assessment was a 115L and the lowest score in the post-assessment was a 165L. The highest lexile in the pre-assessment was 670L and the post-assessment was a 715L. The students in the fourth grade that did

not attend summer school had 27% of the group to increase in their lexile levels. The average lexile level decreased from 465L in the pre-assessment to 416L in the post-assessment. The lowest lexile level in the pre-assessment was a BR, 0 and the lowest score in the post-assessment was 80L. The highest lexile in the pre-assessment was 750L and the post-assessment was an 820L.

Table 24 shows the results of the Pearson Moment Correlation Coefficient (PPMCC) for fourth grade. The results are from the stratified random sampling of students that attended summer school and non-attendees of summer school from the identified grade level. The table shows the test value of 0.203.

Table 24.

Fourth Grade Correlation Coefficient

	Fall Lexile	*Attendance*
Fall Lexile	1	
Attendance	0.203	1

Note. Critical value = 0.514

Since the Pearson Product Moment Correlation Coefficient (PPMCC) of 0.203 was less than the critical value of 0.514, the null hypothesis was not rejected. The data did not support the alternate hypothesis. Therefore, there was no significant relationship between summer school attendance and post-lexile reading scores as measured by AimsWeb.

Null Hypothesis # 3

Null hypothesis # 3 states: There will be no difference in summer growth in lexile levels between the control group not attending summer school and the intervention group attending summer school for first through fourth grades, as measured by AimsWeb RCBM.

First Grade

Null hypothesis #3a states: There will be no difference in summer growth in lexile levels between the control group not attending summer school and the intervention group attending summer school representing first grade, as measured by AimsWeb RCBM. The data shows, that 100% of the first grade students that attended summer school increased in their lexile level. Only 80% of the students in the first grade that did not attend summer school increased in their lexile level. There is an observable difference in the growth of the two groups. Students that attended summer school had more growth than the students that did not.

Table 25.

First Grade t-Test - Attendance

	Attended	Not-Attended
Mean	92.666	40.333
Variance	3256.666	1683.809
Observations	15	15
Pooled Variance	2470.238	
df	28	
t Stat	2.883	
P(T<=t) two-tail	0.007	
t Critical two-tail	2.048	

Table 25 shows the *t*-testing results for first grade. The *t*-testing results were calculated using a stratified random sampling of 15. The mean lexile for students that attended summer school is 92.67 with a variance of 3256.67. Non-attendees of summer school had a mean of 40.33 with a variance of 168.81. Since the test value of 2.883 exceeds the critical value of 2.048, the null hypothesis was rejected. Therefore, the alternate hypothesis was supported by the data. First grade summer school attendees exhibited a significant growth in reading lexiles when compared to non-attendees of

summer school. There was a difference when comparing the control group growth to the intervention group growth.

Second Grade

Null hypothesis #3b states: There will be no difference in summer growth in lexile levels between the control group not attending summer school and the intervention group attending summer school representing second grade, as measured by AimsWeb RCBM. The intervention and the control group for second grade both had 20% of the students to increase in their lexile level. There was no difference in the growth between the two groups for second grade students. However, the average post-lexile level for the students that attended summer school was observably higher than the control group.

Table 26.

Second Grade t-Test - Attendance

	Attended	Not-Attended
Mean	-75.666	-69
Variance	3778.095	8561.428
Observations	15	15
Pooled Variance	6169.761	
df	28	
t Stat	-0.232	
P(T<=t) two-tail	0.817	
t Critical two-tail	2.048	

Table 26 shows the *t*-testing results for second grade. The *t*-testing results were calculated using a stratified random sampling of 15. The mean for students that attended summer school is -75.67 with a variance of 3778.10. Non-attendees of summer school had a mean of -69 with a variance of 8561.43.

Since the test value of -0.232 does not precede the critical value of -2.048; the null hypothesis was not rejected. Therefore, the alternate hypothesis was not supported by

the data. First grade summer school attendees did not exhibit a significant growth in reading lexiles when compared to non-attendees of summer school. There was not a difference when comparing the control group growth to the intervention group growth.

Third Grade

Null hypothesis #3c states: There will be no difference in summer growth in lexile levels between the control group not attending summer school and the intervention group attending summer school representing third grade, as measured by AimsWeb RCBM. The third grade intervention group had 33% of the group show growth in lexile levels. The third grade control group had 53% show growth in lexile levels. There was an observable difference in the growth between the control and intervention groups of third graders. The students that did not attend summer school indicated 20% more growth than the intervention group.

Table 27.

Third Grade t-Test - Attendance

	Attended	Not-Attended
Mean	42.666	25.666
Variance	5528.095	11110.238
Observations	15	15
Pooled Variance	8319.166	
df	28	
t Stat	-2.051	
P(T<=t) two-tail	0.0496	
t Critical two-tail	2.0484	

Table 27 shows the *t*-testing results for third grade. The *t*-testing results were calculated using a stratified random sampling of 15. The mean for students that attended summer school was 42.67 with a variance of 5528.10. Non-attendees of summer school had a mean of 25.67 with a variance of 11110.24.

Since the test value of -2.05 precedes the critical value of -2.048, the null hypothesis was rejected. Therefore, the alternate hypothesis was supported by the data. Third grade summer school attendees exhibited a significant growth in reading lexiles when compared to non-attendees of summer school. There was a difference when comparing the control group growth to the intervention group growth.

Fourth Grade

Null hypothesis #3d states: There will be no difference in summer growth in lexile levels between the control group not attending summer school and the intervention group attending summer school representing fourth grade, as measured by AimsWeb RCBM. The intervention group of fourth grade had 53% of the sampling show growth in lexile levels. The control group of fourth grade had 27% show growth in lexile levels. Students that attended summer school in the fourth grade had 26% more growth than the control group.

Table 28.

Fourth Grade t-Test - Attendance

	Attended	Not-Attended
Mean	1	-49.333
Variance	3736.428	6753.095
Observations	15	15
Pooled Variance	5244.761	
df	28	
t Stat	1.903	
P(T<=t) two-tail	0.067	
t Critical two-tail	2.048	

Table 28 shows the *t*-testing results for fourth grade. The *t*-testing results were calculated using a stratified random sampling of 15. The mean for students that attended

summer school is 1 with a variance of 3736.43. Non-attendees of summer school had a mean of 49.33 with a variance of 6753.10.

Since the test value of 1.90 does not exceed the critical value of 2.048, the null hypothesis was not rejected. Therefore, the alternate hypothesis was not supported by the data. Fourth grade summer school attendees did not exhibit a significant growth in reading lexiles when compared to non-attendees of summer school. There was not a difference when comparing the control group growth to the intervention group growth.

Null Hypothesis # 4

Null hypothesis # 4 states: There will be no increase in lexile level when comparing post-to pre-test values for summer school attendees in grades one through four.

First Grade

Null hypothesis #4a states: There will be no increase in lexile level when comparing post-to pre-test values for summer school attendees in first grade.

Table 29.

First Grade t-Test - Variables

	Fall Lexile	Spring Lexile
Mean	161.666	87
Variance	9809.524	15131.430
Observations	15	15
Pooled Variance	12470.480	
df	28	
t Stat	1.831	
P(T<=t) one-tail	0.038	
t Critical one-tail	1.701	

Table 29 indicates results of comparing first grade pre-to-post-lexile levels. The *t*-testing results were calculated using a stratified random sampling of 15. The mean lexile for the post-test is 161.666 with a variance of 9809.524. Pre-test reading had a mean of 87 with a variance of 15131.430. The test value of 1.83 exceeds the critical value of 1.70; therefore the null hypothesis was rejected. Thus, the data supported the alternate hypothesis, and there was a significant increase in average lexile scores for summer school attendees in first grade.

Second Grade

Null hypothesis #4b states: There will be no increase in lexile level when comparing post-to pre-test values for summer school attendees in second grade. Table 54 indicates results of comparing first grade pre-to-post-lexile levels.

Table 30 indicates results of comparing second grade pre-to-post-lexile levels. The *t*-testing results were calculated using a stratified random sampling of 15. The mean lexile for the post-test is 366 with a variance of 13165. Pre-test reading had a mean of 260.333 with a variance of 8940.952.

Table 30.

Second Grade t-Test - Variables

	Fall Lexile	Spring Lexile
Mean	260.333	336
Variance	8940.952	13165
Observations	15	15
Pooled Variance	11052.980	
df	28	
t Stat	-1.971	
P(T<=t) one-tail	0.029	
t Critical one-tail	1.701	

The test value of -1.971 is smaller than the critical value of -1.70; therefore the null hypothesis was not rejected. Thus, the data did not support the alternate hypothesis, and there was not a significant increase in average lexile scores for summer school attendees in second grade.

Third Grade

Null hypothesis #4c states: There will be no increase in lexile level when comparing post-to pre-test values for summer school attendees in third grade. Table 55 indicates results of comparing first grade pre-to-post-lexile levels.

Table 31 indicates results of comparing third grade pre-to-post-lexile levels. The *t*-testing results were calculated using a stratified random sampling of 15. The mean lexile for the post-test is 438.333 with a variance of 38005.950. Pre-test reading had a mean of 395.666 with a variance of 22635.240.

Table 31.

Third Grade t-Test - Variables

	Fall Lexile	Spring Lexile
Mean	395.666	438.333
Variance	22635.240	38005.950
Observations	15	15
Pooled Variance	30320.6	
df	28	
t Stat	-0.671	
P(T<=t) one-tail	0.253	
t Critical one-tail	1.701	

The test value of -0.67 does not exceed the critical value of 1.70; therefore the null hypothesis was not rejected. Thus, the data does not support the alternate hypothesis, and there was not a significant increase in average lexile scores for summer school attendees in third grade.

Fourth Grade

Null hypothesis #4d states: There will be no increase in lexile level when comparing post-to pre-test values for summer school attendees in fourth grade. Table 56 indicates results of comparing first grade pre-to-post-lexile levels.

Table 32 indicates results of comparing second grade pre-to-post-lexile levels. The *t*-testing results were calculated using a stratified random sampling of 15. The mean lexile for the post-test is 481with a variance of 24972.140. Pre-test reading had a mean of 482 with a variance of 23095.710.

Table 32.

Fourth Grade t-Test - Variables

	Fall Lexile	Spring Lexile
Mean	482	481
Variance	23095.710	24972.140
Observations	15	15
Pooled Variance	24033.930	
df	28	
t Stat	0.017	
P(T<=t) one-tail	0.493	
t Critical one-tail	1.701	

The test value of 0.02 does not exceed the critical value of 1.70; therefore the null hypothesis was not rejected. Thus, the data does not support the alternate hypothesis, and there was not a significant increase in average lexile scores for summer school attendees in first grade.

Descriptive Discussion of Growth: All Grades

Table 33 shows the percentages of students' lexile levels that decreased, increased, and remained the same for the 15 stratified samples from each grade level that attended summer school. In first grade, 100% of the students had an increase in their lexile level. Second grade had 20% to increase and 80% to decrease. Third grade had 33% to increase, 60% to decrease, and seven percent to remain the same. Fourth grade had 53% to increase and 47% to decrease. On average, 51% of the students increased in their lexile level after summer school. Fifty five percent decreased and two percent maintained the same level.

Table 33.

Percentages of Change for Summer School Attendees

Grade Level	Decreased	Increased	Remained the Same
First Grade	0%	100%	0%
Second Grade	80%	20%	0%
Third Grade	60%	33%	7%
Fourth Grade	47%	53%	0%
Average	47%	51%	2%

Table 34 shows the percentages of students' lexile levels that decreased, increased, and remained the same for the 15 stratified samples from each grade level that did not attend summer school. In first grade, 80% of the students had an increase in their lexile level and 20% remained the same. Second grade had 20% to increase and 80% to decrease. Third grade had 53% to increase and 47% to decrease. Fourth grade had 27% to

increase and 73% to decrease. On average, 45% of the students increased in their lexile without attending summer school. Fifty -percent decreased and 5% maintained the same level.

Table 34.

Percentages of Change for Non-Summer School Attendees

Grade Level	Decreased	Increased	Remained the Same
First Grade	0%	80%	20%
Second Grade	80%	20%	0%
Third Grade	47%	53%	0%
Fourth Grade	73%	27%	0%
Average	50%	45%	5%

Summary

Chapter four presented the results of statistical testing on the null hypotheses applied to each grade level, one through four, to examine the variables of summer school attendance and summer reading growth, measured by lexile level. The following null hypotheses were tested with *t*-tests for difference in means and Pearson Product Moment Correlation Coefficient analysis.

Null Hypothesis # 1: The average lexile levels of African American students in grades one through four will not exceed the expected age-appropriate lexile level. Null Hypothesis # 2: There will be no relationship between attendance in summer school and reading levels of first through fourth grade African American students in a low socio-economic area, as identified by summer growth in lexile level provided by the AimsWeb RCBM Assessment. Null hypothesis # 3: There will be no difference in summer growth in lexile levels between the control group not attending summer school and the intervention group attending summer school for first through fourth grades, as measured by AimsWeb RCBM. Null Hypothesis # 4: There will be no increase in lexile level when

comparing post-to pre-test values for summer school attendees in grades one through four.

For Grade One null hypotheses were not rejected, except for null hypothesis # 3 which showed differences in summer growth between lexile levels of the control and intervention group. Students in the first grade did not exceed the grade level expectation of 325L on the pre-test and 350L on the post-test. Attendance of summer school was not deemed to have any effect on reading levels for first grade students. First grade students from both categories experienced significant growth. There was a difference between the two groups of study. Students that attended summer school in the first grade experience more growth in lexile levels as compared to students that did not attend summer school. There was a difference in the lexile levels of pre-and post-values after attending summer school. Students that attended summer school experience a large amount of growth from the pre-test to the post-test in value.

For Grade Two all null hypotheses were not rejected. Students in the second grade lexile level did not exceed the grade level expectation of 525L on the pre-test and 550L on the post-test. Attendance of summer school did not show a relationship with reading levels of second grade students. Students from the control and intervention group had similar results. There was not a difference in summer growth in lexile levels between the control group and the intervention group. Students from both categories had the approximately the same experience. There was a difference in the lexile level of post-test values after attending summer school. A relationship could not be established between summer school and the pre/post-test values. There were observable differences that were

not statistically significant when comparing the lexile levels of the control and intervention groups.

For Grade Three all null hypotheses were not rejected, except null hypothesis # 3 which showed differences when comparing the growth of lexile levels of the control and intervention group. There was a difference in the growth. Students that attended summer school experience less growth as compared to those that did not attend summer school. Students in the third grade lexile level did not exceed the grade level expectation of 675L on the pre-test and 700L on the post-test. Attendance of summer school did not have a relationship with reading levels of third grade students. There were observable differences that were not statistically significant when comparing the lexile pre-/post-test values.

For Grade Four all null hypotheses were not rejected. Students in the fourth grade lexile level did not exceed the grade level expectation of 775L on the pre-test and 800L on the post-test. Attendance of summer school did not have a relationship with reading levels of fourth grade students. Students that attended summer school and non-attendees of summer school had similar results of growth. There were observable differences that were not statistically significant when comparing the lexile pre-/post-test values.

Chapter Five: Discussion

This chapter will discuss the findings of this quantitative research study on the correlation of summer school and lexile levels of African American students in a low socio-economical area, enrolled in grades one through four. First, hypotheses will be discussed by grade level to examine the relationship of summer school and lexile levels. Then, findings from the study and the research of literature will be compared. In addition, an overview of possible research that can be explored in the future will be detailed in the chapter.

The study addressed the following question and hypotheses:

Research Question

What effect will summer school attendance have on reading lexile levels for African American Students from a low socio-economic area?

Hypothesis # 1

The average lexile levels of African American students in grades one through four will exceed the expected age-appropriate lexile level.

Hypothesis # 2

There will be a relationship between attendance in summer school and reading levels of first through fourth grade African American students in a low socio-economic area, as identified by summer growth in lexile level provided by the AimsWeb RCBM Assessment.

Hypothesis # 3

There will be a difference in summer growth in lexile levels between the control group not attending summer school and the intervention group attending summer school for first through fourth grades, as measured by AimsWeb RCBM.

Hypothesis # 4

There will be an increase in lexile level when comparing post-to pre-test values for summer school attendees in grades one through four.

First Grade

Null hypothesis # 1: For first grade, the average pre-test lexile levels were compared to 325; the average post-test lexile levels were compared to 350. For each case, the null hypothesis was not rejected. The data shows that students in the first grade did not exceed the grade level expectation of 325L on the pre-test and 350L on the post-test. From this data it can be implied that first grade students from the intervention and control groups did not meet grade level as it relates to their lexile levels on the pre-and post-test of AimsWeb RCBM.

Null hypothesis # 2: There was no relationship between attendance of summer school and reading levels of first grade students in this study. Attendance of summer school was not deemed to have any effect on reading levels for first grade students. Though First Grade exhibited significant growth in reading, measured by lexile scores, it cannot be stated that the summer school attendance was the actual cause for the growth.

Null hypothesis # 3: Data did support a difference in summer growth in lexile levels between the control group not attending summer school and the intervention group attending summer school. There was a difference between the two groups of study. The

mean for students that attended summer school was 92.666; non-attendees of summer school had a mean of 40.333. Students that attended summer school in the first grade experienced a significant growth in reading, compared to those who did not attend.

Null hypothesis # 4: For first grade, there was a difference in the lexile levels of pre-and post-values after attending summer school. Students that attended summer school experienced a significant growth from the pre-test to the post-test. Reading scores increased from 87L to 161L

Descriptively, two first grade students from the intervention group were on grade level on the pre- and post-tests. There were no students from the control group on grade level on the pre-test and one student was on level on the post-test. All students that attended summer school from the first grade did experience an increase in their lexile level. However, only two students received enough growth to be considered on grade level. The age-average pre-test value of 325 was not exceeded. The age-average post-test value of 350 was not exceeded.

Students that did not attend summer school in the first grade had 80% of the sampling to increase. As both groups exhibited growth there could not be a relationship established with attending summer school. However, students that attended summer school did have an observably larger growth than the control group. There was a significant increase in average lexile levels for first grade summer school attendees, when comparing pre-to post-test scores.

Second Grade

Null hypothesis # 1: For second grade, the average pre-test lexile levels were compared to 525; the average post-test lexile levels were compared to 550. For each case,

the null hypothesis was not rejected. The data shows that students in the second grade did not exceed the grade level expectation of 525L on the pre-test and 550L on the post-test. From this data is can be implied that second grade students from the intervention and control groups did not meet grade level expectations as it relates to the lexile levels on the pre- and post-test of AimsWeb RCBM.

Null hypothesis # 2: There was no relationship between attendance of summer school and reading levels of second grade students in this study. Attendance of summer school was not deemed to have any effect on reading levels of second grade students. Students from the control and intervention groups had similar results.

Null hypothesis # 3: Data did not support a difference in summer growth in lexile levels between the control group not attending summer school and the intervention group attending summer school. Students from both categories had the approximately the same experience.

Null hypothesis # 4: For second grade, there was not a difference in the lexile levels of pre-and post-values after attending summer school. Students that attended summer school did not experience a significant growth measured by the pre-test to the post-tests.

Descriptively, second grade students from the intervention group had one student score on grade level for the pre-test and no students on the post-test according to the lexile level scores. The control group did not have students to score on grade level for the pre- or post -test according to the lexile level scores. The average pre-test value of 525 was not exceeded. The average post-test value of 550 was not exceeded. Only 20% from the intervention group and control group increased in lexile level. There was no

relationship between summer school attendance and reading levels. Summer school attendees and non-summer school attendees had the same amount of growth. In turn, there was not a difference in summer growth in lexile levels between the control group and intervention group. There was no increase in lexile levels when comparing the pre-test values to post-test values for summer school attendees in second grade.

Third Grade

Null hypothesis # 1: For third grade, the average pre-test lexile levels were compared to 675; the average post-test lexile levels were compared to 700. For each case, the null hypothesis was not rejected. The data shows that students in the third grade did not exceed the grade level expectation of 675L on the pre-test and 700L on the post-test. From this data it can be implied that third grade students from the intervention and control groups did not meet grade level as it relates to the lexile level on the pre-and post-test of AimsWeb RCBM.

Null hypothesis # 2: There was no relationship between attendance of summer school and reading levels of third grade students in this study. Attendance of summer school was not deemed to have any effect on reading levels for third grade students.

Null hypothesis # 3: Data did support a difference in summer growth in lexile levels between the control group not attending summer school and the intervention group attending summer school. There was a difference between the two groups of study. The mean for students that attended summer school was 42.67; non-attendees of summer school had a mean of 25.67. Students that attended summer school in the third grade experienced a significant growth in reading, compared to those who did not attend.

Null hypothesis # 4: For third grade, there was not a difference in the lexile levels of pre-and post-values after attending summer school. Students that attended summer school did not experience a significant growth measured by the pre-test to the post-tests.

Descriptively, third grade summer school attendees were not on grade level according to the lexile level scores on the pre- and post-test data. Non-summer school attendees had four out of 15 on grade level for the pre-test and five out of 15 for the post-test. The average pre-test value of 675 was not exceeded. The average post-test of 700 was not exceeded. Only 33% of the third grade students that attended summer school had an increase in lexile level from spring to fall in comparison to 53% of non-summer school attendees. There was not a relationship between attendance in summer school and reading levels. Students that did not attend summer school experienced 20% more growth than those that attended summer school. There was a difference in summer growth of lexile levels for the control group for third grade. There was not a significant increase in average lexile level scores for summer school attendees in third grade.

Fourth Grade

Null hypothesis # 1: For fourth grade, the average pre-test lexile levels were compared to 775; the average post-test lexile levels were compared to 800. For each case, the null hypothesis was not rejected. The data shows that students in the fourth grade did not exceed the grade level expectation of 775L on the pre-test and 800L on the post-test. From this data it can be implied that fourth grade students from the intervention and control groups did not meet grade level as it relates to the lexile level as it relates to their lexile level on the pre-and post-test of AimsWeb RCBM.

Null hypothesis # 2: There was no relationship between attendance of summer school and reading levels of fourth grade students in this study. Attendance of summer school was not deemed to have any effect on reading levels for fourth grade students.

Null hypothesis # 3: Data did not support a difference in summer growth in lexile levels between the control group not attending summer school and the intervention group attending summer school. Students that attended summer school and non-attendees of summer school had similar results of growth.

Null hypothesis # 4: For fourth grade, there was not a difference in the lexile levels of pre-and post-values after attending summer school. Students that attended summer school did not experience a significant growth measured by the pre-test to the post-tests.

Descriptively, fourth grade students that attended summer school did not have students who met the grade level expectancy on the pre- and post-test. Fourth grade non-summer school attendees did not have students meet the grade level expectancy on the pre-test. However, one out of the sampling of 15 for the post-test did meet the grade level expectancy. Overall, only one student from the entire sampling of 30 on the post-test was considered to be on grade level. The pre-test averages did not exceed 775L and the post-test averages did not exceed 800L. The data shows that 53% from the intervention group increased in lexile level and 27% from the control group. The average lexile level of 465L for the pre-test decreased to 416L on the post-test. Fourth grade students that attended summer school experienced more growth than those that did not attend. However, there was a decrease in the overall average. There was not a significant relationship between summer attendance and post-lexile reading scores, as measured by

AimsWeb. Both groups showed growth in lexile levels. However, students that attended summer school had 26% more growth than those that did not attend. Therefore, there was no significant difference in summer growth of lexile levels for the intervention and the control group, just observable differences. There was not a significant increase in lexile levels when comparing post-to pre-test values for summer school attendees in fourth grade.

Summer School Attendance

Overall, 52% of the 60 students that were sampled in grades one through four experienced an increase in their lexile levels. The entire sampling of first grade that attended summer school had an increase in lexile levels. The second grade sampling had 20% to show in increase. The third grade sampling had over a third to show growth. Fifty-three percent of the fourth grade sampling made an increase in lexile levels.

Non-Summer School Attendance

Students from the control group showed a 45% increase in lexile level. The sampling of first grade students had 80% to show an increase and second grade had 20% to show an increase. Over half of third grade, increased and fourth grade had 27% to show an increase in lexile level.

Discussion and Implications of Findings

Upon reflection of the data, it is my opinion that it is imperative that the issues of reading are addressed in the African American community. The data supports that the earliest intervention is most effective. In this study, first grade students showed more promise for reading growth following summer school attendance. As the literature research data showed, African Americans continue to be outperformed by their

counterparts (Fryer & Levitt, 2004; Lee, et al., 2007; Li, 2011). First and foremost, the conclusion can be drawn that African American students that receive interventions or supplementary services prior to attending second grade will make the most gains. African American students in grades second and above may not experience as much growth as younger students. Waiting for students to move to higher grades, then providing supplemental support only appears to lead to a continuous decline for African American students (Center for the Improvement of Student Learning, 2008).

Secondly, summer school programs could also be designed in a more direct connection to the actual standards that each student needs to specifically master versus a basic curriculum. As an example, if students are expected to master 13 of the Common Core State Standards and by the end of the school year they have only mastered 10 standards, the remaining three standards will be identified and explicitly focused on in summer school. This type of summer school program would be specially designed around the student to address their individual needs.

According to Cooper et al. (1996), the research of Rasinki, showed students can lose three months of reading gains during the summer break. The research data from this study does not support Rasinki's findings. For students from this study lexile levels dropped minimally. The data from the study does agree with the findings that students' learning can decline in the summer without instruction of some form (White & Kim, 2008). However, this did not happen for students in the first grade in the research study. All students in the first grade increased across the board. Secondly, it can be implied that the increase leads to conclude that it is easy for younger children to retain and consume information. They are literally sponges and absorb information effortlessly.

Third, it is concluded from the data that the majority of summer school attendees were below grade level. However, from the non-summer school attendee data, the same information is concluded. A large number of students that were not meeting grade level expectations were not taking advantage of the safety nets and restraints to aid in their improvement. In my opinion, in order for the summer school programs to address the needs of the neediest students, it will have to be a mandatory attendance requirement.

Fourth, family structure of households plays an integral role in literacy of children (Binkley et al., 1996). The research data from the study supports this finding about family structure as students from the sampling live in an area where the majority of the population consists of single parent homes and have low literacy rates. Living in a single parent home with only one individual to bring income into the home will lead to fewer funds for the household. In turn, students of this circumstance are limited on resources and are not afforded the same opportunities of students with better circumstances. Possibly providing educational courses at night and during the summer time for parents can aid in narrowing the achievement gaps. GED courses could be offered for those parents who do not have high school diplomas. Educating the community will provide individuals more earning power through better employment opportunities. Parents will have more knowledge and be able to help their children to perform better in school by providing home support with academics.

Blanco (n.d.) explained, “Think about it: Every educated person is not rich, but almost every education person has a job and a way out of poverty. So education is a fundamental solution to poverty” (Blanco, 2014, p. 1). Education is the key. As literacy is a global issue and has a clear connection to poverty, we must ensure the education of all.

Encompassing knowledge can change ones' lifestyle. Although one may not necessarily become rich by becoming literate, it will lead to better job opportunities. In turn, a better future for them and their families.

Recommendations for Future Research

Analyzing the data from this research leads to several future research ideas. The data showed that students that were in the first grade experienced a large amount of growth when attending summer school, as well as not attending summer school. However, students in higher grades did not experience the growth or decreased in lexile levels. Future research on addressing the age or grade level correlation to summer school could determine the relationship of two entities. A beneficial study could address whether or not it is better to attend summer school at any early grade level, such as kindergarten or first grade. Or consideration could be given to a higher grade level, such as second through fifth grade. An investigation could show which may be more beneficial.

More research can also be completed on the curriculum and materials used for the summer school program. As this study did not examine teaching materials, curriculum, or interventions that were applied, the summer school program could not be evaluated for effectiveness. Research can be used to determine the effectiveness of the actual summer school programs, curriculum, and materials. The research can ensure that specifically chosen summer school instructional materials will be more beneficial for students to use during the summer months.

As it is noted in the previous sections of this chapter, most of the students that attended summer school were below grade level in reading. Research could be utilized to

evaluate the academic levels of students that attend summer programs and compare the benefits for students that are on grade level versus those that are below grade level.

Research involving the parents' level of educational academics and earning income status could be deemed beneficial. As the data for this study was used from an impoverished area in which most of the households consisted of single parent homes, parental status may possibly be a better way to address the needs of children. Developing programs for parents to find better jobs, academic support, and resources for better households can be researched to determine the impact on student improvement.

Conclusions

The research findings from this study can lead to better literacy development for African American students of a low socio-economical areas. More specifically, the findings suggest ways to narrow the achievement gap between African Americans and other races, as the results show what may work for students of the identified category. The goal of this research was to determine the relationship of summer school to gains made in reading of African American students of a low social economical area in grades one through four. Students from the sample in the study that attended and did not attend summer school experienced growth. Summer school attendees experienced more growth than those students that did not attend summer school. However, the growth percentage of difference was not significant enough to deem summer school from the study beneficial for African American students of a low socio-economical area in grades one through four. The research of this study did not find summer school beneficial for students in grades one through four as a whole. However, the study did conclude that first grade students that attend summer school may have an increase in lexile level. The study

also concluded that first and third grade students did experience a difference in growth when being compared to students that did not attend in the same grade level.

As there is a known achievement gap between African American students and students of other races (Ramani et al., 2007), summer school may not be the only way to address the matter. However, the issue needs to be addressed as it will continue until successful safety nets are put in place. The Achievement gap between races and income levels is a worldwide issue (SIL, 2014). African American children will continuously be outperformed by other counterparts until the proper restraints are put in place to address their needs. The illiteracy rates in the United States are going to continue to escalate and these individuals are not going to be afforded the same opportunities as others. Illiterate parents will extend the same trend to their offspring. The cycle will continue as the parents in the household lack academic skills to provide academic support and foster learning for the children in the home. Individuals of this nature will not be able to read and perform in society. As noted in Chapter Two, The United States Department of Education linked several societal issues, such as crime, poverty, and unemployment to the literacy rates. This data in turn, means that more African Americans will be jailed, live in poverty, and be unemployed (Education Commission of the States, 2011).

As Missouri is currently in the progress of full implementation of CCSS, each school district is responsible for ensuring that students' needs are addressed (CCSS, n.d.). Missouri can utilize the research information from this study to support decisions to implement programs, instructional methods, and other resources to help narrow the achievement gap between students. As data from MODESE shows that populations with larger numbers of African Americans are performing lower than populations with a

majority of Caucasian students, one way does not work for everyone. In my opinion, African Americans that do not enter school on grade level in kindergarten should be taught using a completely different curriculum than those students that enter school on grade level. As these students are already behind, remediation should begin immediately to catch them up at an early stage.

Edelman (n.d.) stated the following:

> The inability to get health care because people lack insurance kills less traumatically, and less visibility than terrorism, but the results is the same. And poor housing and poor education and low wages kill the spirit and the capacity and the quality of life that all of us deserve (as cited in American Quotes, 2007).

Children living with these circumstances are not afforded the same opportunities as other children. All humans should have the right to a quality life. Education can provide the tools and resources needed for better income and housing status. There is a clear connection between the socio-economic status, education, and wages. It is vital that students are provided with the opportunity to have a justified life by ensuring the educational system is truly design to educate everyone.

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Appendix A

Pre- and Post-Lexile Levels

Summer School Attendees and Non-Attendees

Table A1.

First Grade – Summer School Attendees Pre-and Post-Lexile Levels

Students	Grade Level	Spring Lexile	Fall Lexile
Student 1	1st	BR	15L
Student 2	1st	BR	55L
Student 3	1st	BR	60L
Student 4	1st	25L	105L
Student 5	1st	5L	120L
Student 6	1st	115L	120L
Student 7	1st	50L	120L
Student 8	1st	65L	140L
Student 9	1st	BR	140L
Student 10	1st	70L	195L
Student 11	1st	50L	205L
Student 12	1st	130L	220L
Student 13	1st	85L	225L
Student 14	1st	335L	380L
Student 15	1st	405L	625L

Table A2.

Second Grade – Summer School Attendees Pre-and Post-Lexile Levels

Students	Grade Level	Spring Lexile	Fall Lexile
Student 1	2nd	205L	140L
Student 2	2nd	340L	170L
Student 3	2nd	200L	170L
Student 4	2nd	210L	170L
Student 5	2nd	275L	180L
Student 6	2nd	265L	200L
Student 7	2nd	335L	240L
Student 8	2nd	380L	240L
Student 9	2nd	350L	280L
Student 10	2nd	275L	285L
Student 11	2nd	270L	290L
Student 12	2nd	400L	305L
Student 13	2nd	510L	370L
Student 14	2nd	420L	425L
Student 15	2nd	605L	440L

Table A3.

Third Grade - Summer School Attendees Pre-and Post-Lexile Levels

Students	Grade Level	Spring Lexile	Fall Lexile
Student 1	3rd	60L	150L
Student 2	3rd	190L	215L
Student 3	3rd	260L	280L
Student 4	3rd	435L	305L
Student 5	3rd	510L	360L
Student 6	3rd	410L	390L
Student 7	3rd	545L	470L
Student 8	3rd	550L	475L
Student 9	3rd	600L	480L
Student 10	3rd	560L	495L
Student 11	3rd	650L	505L
Student 12	3rd	585L	530L
Student 13	3rd	515L	540L
Student 14	3rd	615L	615L
Student 15	3rd	90L	125L

Table A4.

Fourth Grade - Summer School Attendees Pre-and Post-Lexile Levels

Students	Grade Level	Spring Lexile	Fall Lexile
Student 1	4th	115L	165L
Student 2	4th	320L	270L
Student 3	4th	270L	300L
Student 4	4th	510L	405L
Student 5	4th	305L	420L
Student 6	4th	455L	430L
Student 7	4th	530L	495L
Student 8	4th	565L	520L
Student 9	4th	595L	525L
Student 10	4th	515L	530L
Student 11	4th	560L	585L
Student 12	4th	555L	590L
Student 13	4th	670L	635L
Student 14	4th	635L	645L
Student 15	4th	615L	715L

Table A5.

First Grade – Non Summer School Pre-and Post-Lexile Levels

Students	Grade Level	Spring Lexile	Fall Lexile
Student 1	1st	BR	BR
Student 2	1st	BR	BR
Student 3	1st	BR	25L
Student 4	1st	BR	40L
Student 5	1st	BR	45L
Student 6	1st	50L	60L
Student 7	1st	20L	90L
Student 8	1st	BR	95L
Student 9	1st	110L	110L
Student 10	1st	BR	115L
Student 11	1st	130L	145L
Student 12	1st	165L	170L
Student 13	1st	130L	220L
Student 14	1st	260L	265L
Student 15	1st	270L	360L

Table A6.

Second Grade – Non Summer School Pre-and Post-Lexile Levels

Students	Grade Level	Spring Lexile	Fall Lexile
Student 1	2nd	65L	10L
Student 2	2nd	310L	120L
Student 3	2nd	200L	130L
Student 4	2nd	185L	150L
Student 5	2nd	430L	180L
Student 6	2nd	270L	200L
Student 7	2nd	360L	210L
Student 8	2nd	345L	240L
Student 9	2nd	275L	265L
Student 10	2nd	280L	305L
Student 11	2nd	355L	340L
Student 12	2nd	495L	365L
Student 13	2nd	465L	390L
Student 14	2nd	470L	425L
Student 15	2nd	350L	490L

Table A7.

Third Grade- Non Summer School Pre-and Post-Lexile Levels

Students	Grade Level	Spring Lexile	Fall Lexile
Student 1	3rd	130L	195L
Student 2	3rd	465L	305L
Student 3	3rd	265L	315L
Student 4	3rd	335L	350L
Student 5	3rd	375L	410L
Student 6	3rd	495L	435L
Student 7	3rd	500L	485L
Student 8	3rd	575L	500L
Student 9	3rd	595L	580L
Student 10	3rd	670L	665L
Student 11	3rd	705L	755L
Student 12	3rd	680L	780L
Student 13	3rd	685L	785L
Student 14	3rd	855L	840L
Student 15	3rd	570L	885L

Table A8.

Fourth Grade – Non Summer School Pre-and Post-Lexile Levels

Students	Grade Level	Spring Lexile	Fall Lexile
Student 1	4th	BR	80L
Student 2	4th	65L	105L
Student 3	4th	300L	295L
Student 4	4th	405L	335L
Student 5	4th	335L	360L
Student 6	4th	515L	410L
Student 7	4th	465L	425L
Student 8	4th	525L	450L
Student 9	4th	520L	450L
Student 10	4th	605L	460L
Student 11	4th	595L	490L
Student 12	4th	720L	500L
Student 13	4th	605L	515L
Student 14	4th	570L	540L
Student 15	4th	750L	820L

Appendix B

Lexile Level Growth

Summer School Attendees and Non-Attendees, by Grade Level

Table B1.

Growth of First Grade Summer School Attendees

	Growth
Mean	92.666
Standard Error	14.734
Median	80
Mode	140
Standard Deviation	57.067
Sample Variance	3256.667
Range	215
Minimum	5
Maximum	220
Sum	1390
Count	15

Note. n = 15.

Table B2.

Growth of Second Grade Summer School Attendees

	Growth
Mean	-75.666
Standard Error	15.870
Median	-70
Mode	-95
Standard Deviation	61.466
Sample Variance	3778.095
Range	190
Minimum	-170
Maximum	20
Sum	-1135
Count	15

Note. n = 15.

Table B3.

Growth of Third Grade Summer School Summer Attendees

	Growth
Mean	-42.666
Standard Error	19.197
Median	-55
Mode	25
Standard Deviation	74.351
Sample Variance	5528.095
Range	240
Minimum	-150
Maximum	90
Sum	-640
Count	15

Note. n = 15.

Table B4.

Growth of Fourth Grade Summer School Attendees

	Growth
Mean	1
Standard Error	15.78275
Median	10
Mode	-35
Standard Deviation	61.12633
Sample Variance	3736.429
Range	220
Minimum	-105
Maximum	115
Sum	15
Count	15

Note. n = 15.

Table B5.

Growth of First Grade Non-Attendees of Summer School

	Growth
Mean	40.33333
Standard Error	10.595
Median	25
Mode	0
Standard Deviation	41.03425
Sample Variance	1683.81
Range	115
Minimum	0
Maximum	115
Sum	605
Count	15

Note. n = 15.

Table B6.

Growth of Second Grade Non-Attendees of Summer School

	Growth
Mean	-69
Standard Error	23.89062
Median	-70
Mode	-70
Standard Deviation	92.52799
Sample Variance	8561.429
Range	390
Minimum	-250
Maximum	140
Sum	-1035
Count	15

Note. n = 15.

Table B7.

Growth of Third Grade Non-Attendees of Summer School

	Growth
Mean	25.66667
Standard Error	27.21548
Median	15
Mode	-15
Standard Deviation	105.4051
Sample Variance	11110.24
Range	475
Minimum	-160
Maximum	315
Sum	385
Count	15

Note. n = 15.

Table B8.

Growth of Fourth Grade Non-Attendees of Summer School

	Growth
Mean	-49.333
Standard Error	21.218
Median	-70
Mode	-70
Standard Deviation	82.177
Sample Variance	6753.095
Range	300
Minimum	-220
Maximum	80
Sum	-740
Count	15

Note. n = 15.

Appendix C

Lexile Level Raw Data

Summer School Attendees and Non-Attendees

Table C1.

First Grade – Summer School Attendees Raw Data

Students	Grade Level	Spring Lexile	Fall Lexile	Increase, Decrease, or Remain the Same	Difference
Student 1	1st	BR	15L	Increase	+15
Student 2	1st	BR	55L	Increase	+55
Student 3	1st	BR	60L	Increase	+60
Student 4	1st	25L	105L	Increase	+80
Student 5	1st	5L	120L	Increase	+115
Student 6	1st	115L	120L	Increase	+5
Student 7	1st	50L	120L	Increase	+70
Student 8	1st	65L	140L	Increase	+75
Student 9	1st	BR	140L	Increase	+140
Student 10	1st	70L	195L	Increase	+125
Student 11	1st	50L	205L	Increase	+155
Student 12	1st	130L	220L	Increase	+90
Student 13	1st	85L	225L	Increase	+140
Student 14	1st	335L	380L	Increase	+45
Student 15	1st	405L	625L	Increase	+220

Table C2.

First Grade – Non-Summer School Raw Data

Students	Grade Level	Spring Lexile	Fall Lexile	Increase, Decrease, or Remain the Same	Difference
Student 1	1st	BR	BR	Remain the Same	0
Student 2	1st	BR	BR	Remain the Same	0
Student 3	1st	BR	25L	Increase	25
Student 4	1st	BR	40L	Increase	40
Student 5	1st	BR	45L	Increase	45
Student 6	1st	50L	60L	Increase	10
Student 7	1st	20L	90L	Increase	70
Student 8	1st	BR	95L	Increase	95
Student 9	1st	110L	110L	Remain the Same	0
Student 10	1st	BR	115L	Increase	115
Student 11	1st	130L	145L	Increase	15
Student 12	1st	165L	170L	Increase	5
Student 13	1st	130L	220L	Increase	90
Student 14	1st	260L	265L	Increase	5
Student 15	1st	270L	360L	Increase	90

Table C3.

Second Grade – Summer School Attendees Raw Data

Students	Grade Level	Spring Lexile	Fall Lexile	Increase, Decrease, or Remain the Same	Difference
Student 1	2nd	205L	140L	Decrease	-65
Student 2	2nd	340L	170L	Decrease	-170
Student 3	2nd	200L	170L	Decrease	-30
Student 4	2nd	210L	170L	Decrease	-40
Student 5	2nd	275L	180L	Decrease	-95
Student 6	2nd	265L	200L	Decrease	-65
Student 7	2nd	335L	240L	Decrease	-95
Student 8	2nd	380L	240L	Decrease	-140
Student 9	2nd	350L	280L	Decrease	-70
Student 10	2nd	275L	285L	Increase	10
Student 11	2nd	270L	290L	Increase	20
Student 12	2nd	400L	305L	Decrease	-95
Student 13	2nd	510L	370L	Decrease	-140
Student 14	2nd	420L	425L	Increase	5
Student 15	2nd	605L	440L	Decrease	-65

Table C4.

Second Grade – Non-Summer School Raw Data

Students	Grade Level	Spring Lexile	Fall Lexile	Increase, Decrease, or Remain the Same	Difference
Student 1	2nd	65L	10L	Decrease	-55
Student 2	2nd	310L	120L	Decrease	-190
Student 3	2nd	200L	130L	Increase	-70
Student 4	2nd	185L	150L	Decrease	-35
Student 5	2nd	430L	180L	Decrease	-250
Student 6	2nd	270L	200L	Decrease	-70
Student 7	2nd	360L	210L	Decrease	-150
Student 8	2nd	345L	240L	Decrease	-105
Student 9	2nd	275L	265L	Decrease	-10
Student 10	2nd	280L	305L	Increase	25
Student 11	2nd	355L	340L	Decrease	-15
Student 12	2nd	495L	365L	Decrease	-130
Student 13	2nd	465L	390L	Decrease	-75
Student 14	2nd	470L	425L	Decrease	-45
Student 15	2nd	350L	490L	Increase	140

Table C5.

Third Grade - Summer School Attendees Raw Data

Students	Grade Level	Spring Lexile	Fall Lexile	Increase, Decrease, or Remain the Same	Difference
Student 1	3rd	60L	150L	Increase	-165
Student 2	3rd	190L	215L	Increase	90
Student 3	3rd	260L	280L	Increase	25
Student 4	3rd	435L	305L	Decrease	20
Student 5	3rd	510L	360L	Decrease	-130
Student 6	3rd	410L	390L	Decrease	-150
Student 7	3rd	545L	470L	Decrease	-20
Student 8	3rd	550L	475L	Decrease	-75
Student 9	3rd	600L	480L	Decrease	-75
Student 10	3rd	560L	495L	Decrease	-120
Student 11	3rd	650L	505L	Decrease	-65
Student 12	3rd	585L	530L	Decrease	-145
Student 13	3rd	515L	540L	Increase	-55
Student 14	3rd	615L	615L	Remain the Same	25
Student 15	3rd	90L	125L	Increase	0

Table C6.

Third Grade- Non-Summer School Raw Data

Students	Grade Level	Spring Lexile	Fall Lexile	Increase, Decrease, or Remain the Same	Difference
Student 1	3rd	130L	195L	Increase	65
Student 2	3rd	465L	305L	Decrease	-160
Student 3	3rd	265L	315L	Increase	50
Student 4	3rd	335L	350L	Increase	15
Student 5	3rd	375L	410L	Increase	35
Student 6	3rd	495L	435L	Decrease	-60
Student 7	3rd	500L	485L	Decrease	-15
Student 8	3rd	575L	500L	Decrease	-75
Student 9	3rd	595L	580L	Decrease	-15
Student 10	3rd	670L	665L	Decrease	-5
Student 11	3rd	705L	755L	Increase	50
Student 12	3rd	680L	780L	Increase	100
Student 13	3rd	685L	785L	Increase	100
Student 14	3rd	855L	840L	Decrease	-15
Student 15	3rd	570L	885L	Increase	315

Note. Critical value = 1.761

Table C7.

Fourth Grade - Summer School Attendees Raw Data

Students	Grade Level	Spring Lexile	Fall Lexile	Increase, Decrease, or Remain the Same	Difference
Student 1	4th	115L	165L	Increase	50
Student 2	4th	320L	270L	Decrease	-50
Student 3	4th	270L	300L	Increase	30
Student 4	4th	510L	405L	Decrease	-105
Student 5	4th	305L	420L	Increase	115
Student 6	4th	455L	430L	Decrease	-25
Student 7	4th	530L	495L	Decrease	-35
Student 8	4th	565L	520L	Decrease	-45
Student 9	4th	595L	525L	Decrease	-70
Student 10	4th	515L	530L	Increase	15
Student 11	4th	560L	585L	Increase	25
Student 12	4th	555L	590L	Increase	35
Student 13	4th	670L	635L	Decrease	-35
Student 14	4th	635L	645L	Increase	10
Student 15	4th	615L	715L	Increase	100

Table C8.

Fourth Grade – Non-Summer School Raw Data

Students	Grade Level	Spring Lexile	Fall Lexile	Increase, Decrease, or Remain the Same	Difference
Student 1	4th	BR	80L	Increase	80
Student 2	4th	65L	105L	Increase	40
Student 3	4th	300L	295L	Decrease	-5
Student 4	4th	405L	335L	Decrease	-70
Student 5	4th	335L	360L	Increase	25
Student 6	4th	515L	410L	Decrease	-105
Student 7	4th	465L	425L	Decrease	-40
Student 8	4th	525L	450L	Decrease	-75
Student 9	4th	520L	450L	Decrease	-70
Student 10	4th	605L	460L	Decrease	-145
Student 11	4th	595L	490L	Decrease	-105
Student 12	4th	720L	500L	Decrease	-220
Student 13	4th	605L	515L	Decrease	-90
Student 14	4th	570L	540L	Decrease	-30
Student 15	4th	750L	820L	Increase	70

Table C9.

Summary of Pre- and Post - Test Data: All Grades Attendance Types

Student	Attended summer school? (2=yes; 1=no)	Grade level	Pre-test	Post-test	Growth
1	2	1	0	15	15
2	2	1	0	55	55
3	2	1	0	60	60
4	2	1	25	105	80
5	2	1	5	120	115
6	2	1	115	120	5
7	2	1	50	120	70
8	2	1	65	140	75
9	2	1	0	140	140
10	2	1	70	195	125
11	2	1	50	205	155
12	2	1	130	220	90
13	2	1	85	225	140
14	2	1	335	380	45
15	2	1	405	625	220
16	2	2	205	140	-65
17	2	2	340	170	-170
18	2	2	200	170	-30
19	2	2	210	170	-40
20	2	2	275	180	-95
21	2	2	265	200	-65
22	2	2	335	240	-95
23	2	2	380	240	-140
24	2	2	350	280	-70
25	2	2	275	285	10
26	2	2	270	290	20
27	2	2	400	305	-95
28	2	2	510	370	-140
29	2	2	420	425	5
30	2	2	605	440	-165
31	2	3	60	150	90
32	2	3	190	215	25
33	2	3	260	280	20
34	2	3	435	305	-130
35	2	3	510	360	-150
36	2	3	410	390	-20
37	2	3	545	470	-75
38	2	3	550	475	-75
39	2	3	600	480	-120
40	2	3	560	495	-65
41	2	3	650	505	-145
42	2	3	585	530	-55
43	2	3	515	540	25
44	2	3	615	615	0

Continued

Table C9. Continued

Student	Attended summer school? (2=yes; 1=no)	Grade level	Pre-test	Post-test	Growth
45	2	3	90	125	35
46	2	4	115	165	50
47	2	4	320	270	-50
48	2	4	270	300	30
49	2	4	510	405	-105
50	2	4	305	420	115
51	2	4	455	430	-25
52	2	4	530	495	-35
53	2	4	565	520	-45
54	2	4	595	525	-70
55	2	4	515	530	15
56	2	4	560	585	25
57	2	4	555	590	35
58	2	4	670	635	-35
59	2	4	635	645	10
60	2	4	615	715	100
61	1	1	0	0	0
62	1	1	0	0	0
63	1	1	0	25	25
64	1	1	0	40	40
65	1	1	0	45	45
66	1	1	50	60	10
67	1	1	20	90	70
68	1	1	0	95	95
69	1	1	110	110	0
70	1	1	0	115	115
71	1	1	130	145	15
72	1	1	165	170	5
73	1	1	130	220	90
74	1	1	260	265	5
75	1	1	270	360	90
76	1	2	65	10	-55
77	1	2	310	120	-190
78	1	2	200	130	-70
79	1	2	185	150	-35
80	1	2	430	180	-250
81	1	2	270	200	-70
82	1	2	360	210	-150
83	1	2	345	240	-105
84	1	2	275	265	-10
85	1	2	280	305	25
86	1	2	355	340	-15
87	1	2	495	365	-130
88	1	2	465	390	-75
89	1	2	470	425	-45
90	1	2	350	490	140

Continued

Table C9. Continued

Student	Attended summer school? (2=yes; 1=no)	Grade level	Pre-test	Post-test	Growth
91	1	3	130	195	65
92	1	3	465	305	-160
93	1	3	265	315	50
94	1	3	335	350	15
95	1	3	375	410	35
96	1	3	495	435	-60
97	1	3	500	485	-15
98	1	3	575	500	-75
99	1	3	595	580	-15
100	1	3	670	665	-5
101	1	3	705	755	50
102	1	3	680	780	100
103	1	3	685	785	100
104	1	3	855	840	-15
105	1	3	570	885	315
106	1	4	0	80	80
107	1	4	65	105	40
108	1	4	300	295	-5
109	1	4	405	335	-70
110	1	4	335	360	25
111	1	4	515	410	-105
112	1	4	465	425	-40
113	1	4	525	450	-75
114	1	4	520	450	-70
115	1	4	605	460	-145
116	1	4	595	490	-105
117	1	4	720	500	-220
118	1	4	605	515	-90
119	1	4	570	540	-30
120	1	4	750	820	70

Note. Population N = 343

Vitae

Channie Sherree Bell was born in West Point, MS. After completing her schoolwork at West Point High School in MS in 2001, Channie entered Jackson State University in Jackson, MS. During the summers of 2001 and 2002, she also attended the University of Southern MS. She received a Bachelor of Science with a major in Elementary Education from Jackson State University in May 2005. In June 2005, she entered the Graduate School at Jackson State University. During the following year, she was employed as a first grade teacher at McNeal Elementary in Canton, MS. In August 2006, she graduated from Jackson State University with a Master of Science degree in Reading Education, after which she began to work for the University of MS-Barksdale Reading Institute as a Reading Interventionist. In 2007, she relocated to St. Louis, MO to accept a Reading Specialist Position with the Hazelwood School District. While employed in this position, in August 2009, she obtained an Educational Specialist in Educational Administration at Lindenwood University in St. Charles, MO. In the spring of 2010, she began her studies toward a doctoral degree in Educational Administration at the same institution, with anticipated graduation in 2014.