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The Effect of a Summer Reading Program on Student Reading Achievement

Danielle Triplett
Gardner-Webb University

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The Effect of a Summer Reading Program on Student Reading
Achievement

By
Danielle Triplett

A Dissertation Submitted to the
Gardner-Webb University School of Education
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Education

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2009

Approval Page

This dissertation was submitted by Danielle Triplett under the direction of the persons listed below. It was submitted to the Gardner-Webb University School of Education and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Gardner-Webb University.

David Shellman EdD
Committee Chair

Date

Jane King EdD
Committee Member

Date

Wanda Hutchinson EdD
Committee Member

Date

Jackson P. Rainer, PhD
Dean of Graduate School

Date

Abstract

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This study examined the relationship between reading during the summer and reading achievement. The participants consisted of second through fifth grade students in a rural, western North Carolina elementary school. Continued focus on increasing reading abilities and closing the achievement gap prompted the interest for this research.

Data were gathered through the use of qualitative and quantitative measures such as state and county assessments, surveys, and program reports.

Analysis of the data indicated the role that reading during the summer had on reading achievement.

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Chapter 1: Introduction

Having the ability to read is one of the most essential skills to possess because it affects so many aspects of daily life. Consequently, those who choose to teach the reading process accept a serious responsibility. These thoughts are supported by a report from the International Reading Association (IRA) (2002) that stated "few instructional tasks [are] more important than teaching children to read" (p. 1). This IRA report affirms that reading ability is linked to much more than just academic success or failure. The International Reading Association cited previous studies by Snow, Burns, and Griffin (1998), and Wagner (2000), that provided empirical data that showed "low achievement in literacy correlates with high rates of school dropout, poverty, and underemployment" (p. 1).

In an effort to address the needs of students in a reading program and teachers who are teaching in the program, several approaches have been developed to enhance teaching and learning how to read. *Put Reading First: The Research Building Blocks for Teaching Children to Read* (Armbruster & Osborn, 2003), is a resource that was developed from the findings of the 2000 report from the National Reading Panel (NRP). NRP's research provided educators with an analysis and explanation of the five

essential components of reading instruction: phonemic awareness, phonics, fluency, vocabulary, and text comprehension (Armbruster & Osborn). These components of instruction are research based, of high quality, and effective when implemented appropriately (Armbruster & Osborn).

According to Armbruster and Osborn (2003) phonemic awareness is the understanding of the sounds of spoken words and being able to identify and manipulate those sounds. Having strong phonemic awareness skills can help students with reading words, reading comprehension, and learning to spell. Instruction in phonemic awareness is most effective when instructional lessons focus on one or two sound manipulations at a time and when students are instructed to manipulate sounds by using the individual letters of the alphabet.

As a natural progression from sounds to words, phonics are what help the student understand the relationship between letters and sounds. Phonics instruction helps learners to understand the systematic and predictable relationship between the two (Armbruster & Osborn, 2003; Bukowiecki, 2007). Understanding phonics enables students to use letter and sound relationships to spell words and create sentences. Phonics skills also provide learners with

the knowledge to decode new words which will greatly influence comprehension and fluency for beginning readers (Armbuster & Osborn).

The importance of fluency reaches far beyond the mere ability to read quickly and without mistakes. "Fluency is important because it provides a bridge between word recognition and comprehension" (Armbuster & Osborn, 2003, p. 22). Teachers can implement a vast array of instructional strategies that focus on developing fluency. More time can be focused on understanding the text when time spent struggling over unknown words or sentence structure is minimal (Armbuster & Osborn; Bukowiecki, 2007). As students become more proficient in resolving unknown words, teachers have a greater opportunity to enhance reading vocabulary.

Vocabulary is a component found to be essential in a comprehensive reading program. Students are exposed to vocabulary, both directly through deliberate instruction and indirectly through conversations, daily oral language experiences, and independent reading. Having a solid knowledge of vocabulary and using resources to assist in vocabulary development are critical for true comprehension of a given text (Armbuster & Osborn, 2003). As fluency and vocabulary knowledge increase, students can spend more time

on comprehension and understanding what is being read.

Text comprehension is essentially the reason for reading. Readers should have a purpose and actively think about what they are reading in order to reach a greater understanding. Comprehension monitoring is an important practice for readers to use when reading a given text. Just as students are monitoring their own practices, teachers must also monitor the progress of students as they develop their reading skills.

Monitoring, however, is not enough. The requirements of the education legislation require that teachers must use research proven best teaching strategies when delivering reading instruction. Marilyn Adams is quoted by Wren (n.d.) in *Ten Myths of Reading Instruction*, on the significance of effective instructional strategies stating, "it is not just that the teaching of reading is more important than ever before, but that it must be taught better and more broadly than ever before" (p. 5).

Problem Statement

Students experience a learning loss during the summer break from school. Reading levels regress when students are not actively engaged in reading experiences over long periods of time (Kranz, 2002). Continuous growth and reducing achievement gaps are top priorities for educators

and as Kranz stated "research shows that teachers spend up to a month of the school year reviewing knowledge the kids lost over the summer" (p. 1); therefore, alternatives must be put into place to address this growing problem.

Unstructured summer breaks, where students are not exposed to curricular activities or learning experiences, along with limited access to books and other reading materials, are obstacles that could be decreased for some students if given the opportunity to participate in summer reading programs (Alexandar, Entwisle, & Olson, 2007).

Purpose

The purpose of this study was to research the effects of a school-based summer reading program on student reading lexile levels. The study also examined lexile levels for the next 6 months to determine if any significant gains or losses were made. Additionally, attitudes toward reading were measured to determine the effect they had on participation in the summer reading program. Students need access to reading materials that are appropriate for their reading levels in order to practice the skills taught during the regular academic year. A school-based summer reading program is one way to provide appropriate reading materials to all students that satisfy their interests on an appropriate reading level.

Context of the Problem

The education legislation places demanding emphasis on achievement scores, especially in reading. According to the National Assessment of Educational Progress (2007) (NAEP), reading achievement scores across the nation are on the rise, and North Carolina's reading performance is close to the national average. National data revealed that North Carolina has made gains in reading scale scores since 2005 (NAEP).

In fact, the 2007 national average score of 220 and 261 in fourth and eighth grades, respectively, were only two scale score points ahead of North Carolina's average reading scores for the same grades (NAEP, 2007). These findings were supported by the close comparison of North Carolina's proficiency scores of below basic, basic, proficient and advanced to those of the Nation's (NAEP). North Carolina students in both the fourth and eighth grades received scale scores at or above the national average (NAEP). However, continued efforts to close the achievement gap between below basic and proficient, and to increase student growth are still the driving forces in classrooms across the country. Therefore, schools are looking for new ways to address these concerns.

For this study, reading lexile levels and attitudes

toward reading were analyzed for students in the second through fifth grades at a local elementary school in the northwest region of North Carolina. This small, rural elementary school had a student population of approximately 200 students. Students were distributed into 10 classrooms, in grades pre-kindergarten to grade 5, with class sizes that ranged from 15 to 25 students.

Teachers in this school were all highly qualified according to the education legislation. Of the 24 site-based instructional staff members, four teachers had a masters degree and two were seeking degrees beyond their masters. Workforce stability is the hallmark of this school with only three staff members leaving during the last 3 years. Due to this small turnover rate, the target school was rich in experience with the years of teaching experience ranging from 4 to 17 years. Special area teachers at this school provided music and art 1 day each week and physical fitness education 2 days each week. A full-time media specialist and a part-time guidance counselor were also included as staff members at this school.

Support staff included four full-time teacher assistants in grades pre-kindergarten through first grade and one shared assistant for the two second grades. In the

third through fifth grades, part-time tutors were employed from late fall through mid-spring to assist those teachers with flexible and small group instruction.

There was little diversity in student population; 99% of students were Caucasian and 1% were Hispanic. Students attending this school came from predominantly lower and middle socioeconomic levels. These socioeconomic levels were substantiated by data that revealed 64% of students received free or reduced lunch.

Of the 13 elementary schools in the district, only this school had a summer reading program for all students. Grade appropriate books were sent home with students in kindergarten through fifth grade. Students in kindergarten through second grade received two short story books, while students in third through fifth were given two longer selections, a short novel and a comic book.

Book selection was a critical component to this school's summer reading program. The selection committee looked at the reading level, genre and interest areas to determine the best match for the student's needs. The goal of the selection committee was to select books for the students that matched their reading levels and were appropriately matched to their areas of interest. These efforts were made because of the positive relationship

between personal interest and motivation to read (Edmunds & Bauserman, 2006).

In order to capitalize on student interest, suggestions for activities and projects were included in the summer reading packets that students received at the end of the school year. Each student participating in the summer reading program was responsible for creating a project on his/her book which was to be turned in during the first week of school. Based on the quality of the projects, teachers were then able to begin targeted reading instruction from day one as school began.

The summer reading program began in the summer of the 2005-2006 school year with a participation rate of 85%. In the summer of the 2006-2007 school year, participation was again high, reaching 80%. The summer reading program at the target school has been in existence for 2 years. Table 1 illustrates the number of students who participated by grade level.

Table 1

Students Who Participated in the Summer Reading Program

2005-2006

Grade	Total # of Students	#Participated	%Participated
PreK	15	13	87
K	33	28	85
1	39	33	85
2	24	21	88
3	33	27	82
4	24	21	88
Totals	168	143	85

2006-2007

Grade	Total # of Students	#Participated	%Participated
PreK	15	11	73
K	32	26	81
1	39	34	87
2	24	21	88
3	34	30	88
4	36	28	93
Totals	180	139	80

In addition to the summer reading program at the target school, Appalachian State University sponsored a summer reading program that was implemented in all 13 elementary schools in the summer of 2007. This program was used in conjunction with the target school's summer reading program. The target school received the highest ranking in the county for having 83% of students participate in the program.

Significance of the Study

The ability to read is of the utmost importance no matter what grade or age. Studies show that the more one

reads, the better he/she can write; most studies also show improvements in spelling (Krashen, 1993). The amount of reading completed outside of school is directly related to gains made in reading achievement (Pikulski & Cooper, 1997).

"Educators consider summer reading very important in developing life-long reading habits, in maintaining literacy skills and in promoting reading for pleasure" (Cornish, 2003, p. 1). It has also been found through the Heyns Study (1978) that there is a direct and positive relationship between the number of books read and academic growth. Book availability becomes a barrier for students in low socioeconomic households during the summer months. Growing concerns for students in these situations are adding to the need for school-based summer reading activities (McGill-Franzen & Allington, 2006).

Hypotheses

H₀:1 There is no difference in the mean reading lexile scores between participants and non-participants in a summer reading program as measured by Scholastic Reading Inventory test.

H₀:2 Six months after the beginning of school there is no difference in the mean reading lexile scores between participants and non-participants in the summer reading

program as measured by the Scholastic Reading Inventory test.

$H_0:3$ There is no difference in attitudes toward reading between participants and non-participants in the summer reading program as measured by the Early Reading Attitude Survey.

$H_0:4$ There is no difference in mean lexile scores between beginning scores in May and ending lexile scores in January.

Research Question

How does parental involvement during the summer reading program affect student reading scores?

Definitions

Lexile. A unit of measurement used when determining the difficulty of text and the reading level of readers.

Lexile Framework. The Lexile Framework for Reading is a system that can help determine the reading level of any written material from a book to a test item. The Lexile Framework can also be used to assess a reader's reading comprehension level. After test results are converted into lexile levels, readers can be matched to reading materials on their own level, and comprehension rates of readers can be forecasted to determine how well the reader will comprehend.

Scholastic Reading Inventory (SRI). A research-based, computer-adaptive reading assessment for Grades K-12 that measures a student's level of reading comprehension and reports it using the Lexile Framework for Reading. It can also be used to track a student's reading growth over periods of time and serve as a guide to tailor instruction according to student needs.

Summary

Research supports the thought that students experience the summer setback with reading if they take a vacation from books or other printed materials. Because of the summer loss, teachers will spend the beginning month of school reviewing and re-teaching what was lost over the summer (Kranz, 2002). Therefore, initial instructional time is not devoted to new material, which can leave those students who do read over the summer bored and unchallenged while class time is devoted to catching everyone up.

This study examined the effects of a school-initiated summer reading program on reading lexile levels and attitudes toward reading. A sample of student reading lexile levels and reading attitudes were taken from a rural elementary school that has a summer reading program. Those students were then be compared to a sample of non-participants at that same school to determine if gains are

made and/or if attitudes toward reading impacted results.

Reading lexile levels and attitudes were again measured at mid-year to determine if there were any lasting benefits of participating in the summer reading program.

Chapter 2: Literature Review

Introduction

The review of literature was organized around four major themes: importance of reading, factors that affect reading, reading loss, and measurements of reading achievement. Recent research was gathered and analyzed for aspects surrounding these themes related to reading.

Reading is a skill that develops through repeated practice over a period of time. Students begin learning basic reading skills at an early age and continue to develop practices throughout much of their lives. Continuous exposure to printed material provides students with the opportunities needed to not only maintain current reading levels, but to enhance their reading skills. Jalongo (2005) cited Frank Smith (2003) on the process of learning to read:

Helping a child to become a reader requires vastly important and precious qualities of patience, tolerance, empathy, and sensitivity. Children learn to read by reading, provided they are interested in what they read and not confused by it. Children learn to read when conditions are right. These conditions included their relationships with books and other material, and their relationships with people who will

help them to read. The conditions also included their own unique personalities, their self-image, mood, interest, expectations, and comprehension. (p. 17)

Importance of Reading

Reading is everywhere in the environment and comes in all forms, from billboards to television commercials, video game manuals, the Internet, and everything in between. The act of reading is not limited to just the classroom and textbooks as some would like to think. Students today are surrounded with opportunities to read both in and out of school. Having the ability to read is one of the most valued skills one can possess. Even with all the educational focus on the teaching of reading, over half of the students today are considered to be struggling readers (Stewart, Benner, Martella, & Marchand-Martella, 2007).

"Research has shown that if a child is not reading grade-appropriate materials by the time he or she is in the fourth grade, the odds of that child ever developing good reading skills are very slim" (Wren, n.d., p. 3).

Anderson, Wilson, and Fielding (1998) (as cited in Pikulski & Cooper, 1997), studied the relationship between independent reading and reading achievement and found "that the amount of time students spent in independent reading was the best predictor of reading achievement and also the

best predictor of the amount of gain in reading achievement made by students between second and fifth grade" (section 6, para. 2). Other studies suggested that teacher involvement and monitoring of book selection, along with increased access to books may in fact positively impact voluntary reading engagement and success (Kim, 2007). Therefore, it is increasingly important that educators implement research-based teaching practices to meet the needs of all students (Stewart et al., 2007).

Another factor that influences independent or voluntary reading is self-efficacy. Research has shown that "a history of less-successful reading experiences produces a lower sense of self-efficacy in readers than a history of successful reading experiences" and "the lower sense of self-efficacy then predicts lower levels of engagement in reading, especially voluntary reading" (Allington & McGill-Frazen, 2003, p. 3). This also falls under "The Matthew Effect" which was coined by Stanovich in 1986, as a way to explain the effects of learning disabilities in reading (Graham, Pegg, & Alder, 2007). According to this theory, as relating to reading abilities, the rich get richer and the poor get poorer.

Therefore, children must have multiple opportunities with a variety of books appropriate to their level. Higher

successes in reading experiences at school are key to developing voluntary reading at home (Allington & McGill-Frazen, 2003) and spending time reading outside of school has been linked to vocabulary, fluency and comprehension development (McKool, 2007).

Providing students with appropriate level, high interest books from various genres supports the research which stated "that building on student interest can stimulate an interest in reading, even among lower-achieving readers" (Allington & McGill-Frazen, p. 3).

According to research, student interest, book characteristics, and personal choice are the three most popular factors that excite students about reading. Learning new information and book referrals from teachers, librarians, and peers were also noted as motivational factors that influenced reading practices (Edmunds & Bauserman, 2006). Motivation to read can also be influenced by gender. Studies have shown that overall, male students have less success in school and have lower test scores on standardized reading assessments than females (Merisuo-Storm, 2006). Therefore, finding materials that are interesting and motivating for males to read are increasingly important. The notion of motivation is not a new one; however, the impact it has on reading is stirring

up many unanswered questions (Miller & Meece, 1997). In fact, data collected from teachers and reading specialists agree that more research concerning motivation to read is desperately needed in the areas of "creating an enduring interest in reading; promoting a desire to read; and understanding how teachers, peers, and parents can enhance such motivation" (Miller & Meece, p. 2).

In *Reading for Pleasure: A Research Overview* (Clark & Rumbold, 2006), a summary of the positive effects that reading can have on literacy related skills are as follows: "(a) reading attainment and writing ability for reading that is done both in school and out of school, (b) text comprehension and grammar, (c) breadth of vocabulary, (d) positive reading attitudes, (e) greater self-confidence as a reader, and (f) pleasure reading in later life" (p. 9). Wigfield and Guthrie (1997) found that "students' reading amount and breadth contribute substantially to several valued aspects of their achievement and performance, such as reading achievement, world knowledge and participation in society" (p. 2).

Factors that Affect Reading

Attitudes toward reading, socioeconomic status, and parental involvement were some of the factors reviewed in this study that were found to affect reading and reading

achievement. These three factors are closely related and influenced by that relationship. Research concluded that whether or not a child reads, especially independently, is dependent on his/her attitude toward reading (Roberts & Wilson, 2006). Socioeconomics play a large role in the reading culture at home and impact how reading is experienced and valued (Kim, 2004). This directly affects the attitude that a child develops toward reading because of the modeled practices seen at home (Garrett, 2002).

Attitudes toward Reading

Attitudes or feelings about reading can greatly impact one's reading practices. Research has found that a person's attitude toward reading is related to reading achievement scores and performance (Worrell, Roth, & Gabelko, 2007). Roberts and Wilson (2006) found one account that stated "evidence has linked reading attitude with ability and reported that poor readers generally have more negative attitudes than better readers" (p. 65). However, they also reviewed a later study that found "consistent attitudes toward reading regardless of ability" (p. 65).

The role of reading attitudes has also been analyzed for differences in gifted students, children with learning disabilities, and gender, and found surprising results. Results from gifted students showed a negative attitude

toward reading, children with learning disabilities displayed an attitude equal to or above their low and average non-disabled peers, and girls indicated a more positive attitude toward reading than boys (Roberts & Wilson, 2006). Findings further supported the need for educators to be cognizant of their students' needs and to develop lessons accordingly.

Teachers are recognizing the importance of modeling and promoting positive reading attitudes because of their "integral part [in] the development and use of lifelong reading skills" (Roberts & Wilson, 2006, p. 64). Without the success of affirmative reading experiences early on, students may not develop voluntary reading habits that will sustain continued reading activity (Garrett, 2002). In fact, research has found that the out-of-school reading practices developed by early middle school will remain the reading practices throughout one's lifetime (McKool, 2007). This becomes increasingly important because findings show that positive attitudes toward reading are high with students in early elementary school, but makes a steady decline as they continue through school, which in turn decreases the amount of time spent reading out of school (McKool).

Because of the documented decline in reading attitudes

among older students, educators must recognize the problem and plan activities that will promote positive experiences with literature (Garrett, 2002; Roberts & Wilson, 2006). Garrett compiled a list of various activities that principals and teachers should implement to enhance reading attitudes. Sample activities included: (1) develop an informal interest inventory to determine interests of children, (2) reward children with acts of praise for their accomplishments in reading, and (3) teachers should discuss with children the usefulness of the reading tasks they do (Garrett, p. 22). It is essential that students make and build connections with their reading experiences in order to promote continued reading practices; otherwise, the decline of reading will result in learning losses.

Effects of Socioeconomic Status

McGill-Frazen and Allington (2001) described a study by Cooper (2001) and colleagues that showed "summer vacations created, on average, an annual reading achievement gap of about 3 months between students from middle- and lower-income families, favoring the students from the more economically advantaged families" (p. 2). McGill-Frazen and Allington explained that "in the elementary grades, a summer loss of 3 months accumulates to become a gap of 18 months by the end of 6th grade" and the

gap continues to expand throughout middle school stating that "summer reading loss plus an initial achievement lag at the beginning of 1st grade produces a cumulative lag of two or more years in reading achievement, even when effective instruction during the school year is available" (p. 2).

Research found that family income is a key factor concerning the effects of the summer break on reading. Johnson (2000) stated,

on average, these kids have less access to material resources such as books and computers, fewer enriching experiences such as family trips and summer camps, as well as, fewer high-quality educational interactions with their parents, whose time and energy are often consumed by the challenges of struggling with poverty, raising a family as a single parent, and countless other obstacles. (p. 1)

Students coming from low-income families typically have fewer reading opportunities in and out of school (McGill-Frazen & Allington, 2001). Additional research by Michael Puma and colleagues (cited by Allington & McGill-Franzen, 2003) reported that "while family socioeconomic status and reading achievement are highly correlated, the report's findings suggest that poor children's limited access to

books is not the sole explanation of the consistent finding of substantial summer reading setback among poor children" (p. 3).

In the Baltimore Beginning School Study, students were tested in the fall and in the spring and it was found "that all children make gains at essentially the same rate during the school year, and that only during the summer months do disadvantaged kids' scores fall behind" (Johnson, 2000, p. 1). Additional findings by Johnson showed that "these summer losses, added up over the years, seem to be the major reason why the academic gap between low- and high-income children grows throughout the elementary years" (p. 1). Johnson further stated that "disadvantaged kids' summer losses are especially large during the breaks between the first three or four years of school, and so preventing these losses, particularly over the first few summers, could make the gap much smaller" (p. 1).

In the meta-analysis conducted by Cooper, Nye, Charlton, Lindsay, and Greathouse, evidence was found that economic resources affected reading performance (Cooper, 2001). Their research showed that while middle class students demonstrated gains in reading achievement over the summer break, students from lower income households lost ground (Cooper). Findings also revealed that members from

both income levels showed losses in reading comprehension; however, greater losses were displayed for those from the lower income group (Cooper). Boss and Railsback (2002) cite the U. S. Department of Education on their findings on the relationship of income and learning as this:

Children of the middle class appear to rely on school for only a portion of their academic learning. Their proficiency in basic and advanced academic subjects is boosted by parents' instruction, extracurricular activities (e.g., private lessons, voluntary associations such as scouting or sports), and family activities that reinforce education even when they are construed as entertainment. Children in poor families, on the other hand, rely primarily on school for academic learning. (pp. 11-12)

Structured school-like activities are needed in lower income households where all educational activities are dependent on school sponsorship (Alexandar et al., 2007).

Parent Involvement

"Parental beliefs are related not only to home literacy practices and children's reading achievement, but also to children's motivation for reading" (Baker, 2003, p. 91). Along with these benefits, students who come from supportive home environments also display a more positive

attitude toward reading (Baker).

Large scale international research studies investigating the factors that have influenced children's reading achievement reported significant correlations between the following five home factors: (1) regular engagement in early pre-school literacy activities, (2) speaking in the home, the language used in the tests to assess the child's reading, (3) having a greater number of books in the home, (4) the amount of time parents spent reading with their child and (5) the parents' and child's attitude toward reading. (Mullis, Martin, Gonzales, & Kennedy, 2003, as cited in Hay & Fielding-Barnsley, 2007, p. 191)

Children raised in homes that were predominantly oriented toward the view that literacy is a source of entertainment were more advanced in their development of reading-related competencies than children raised in homes where literacy was more typically viewed as a set of skills to be acquired. (Baker, 2003, p. 91)

Thus, parents are important role models for their children and can be powerful motivators for getting them excited about reading and involved in a summer reading program, whether it is school-initiated or from the public library (Johnson, 2000). Successful instructional programs focusing

on reading and writing involve parents and extend learning opportunities into their homes (Center for Improvement of Early Reading Achievement, 1998). This is especially important for families of reluctant readers or in homes where reading is not seen as valuable (Glazer, 2000).

"Research has also shown that when parents are actively involved in learning at home, their children become more successful in and out of school" (Cornish, 2003, p. 1). This is especially true for parents of struggling readers. In fact, research has found that when students experience reading problems, a poor self-concept develops and motivation declines, so "teachers [need] to include parents in improving the self-concept of children with reading difficulties because improvements in self-concept are not likely unless all significant parties are involved" (Baker, 2003, p. 89).

Parents who are actively involved, and set high expectations for participation can help make summer programs a positive learning experience (Boss & Railsback, 2002). According to an article on encouraging summer reading by *Northwest Baby & Child Online*, there are a number of strategies that parents can do to promote reading (Chiara, 2002). Some of the suggestions include: designating a secret reading place, motivating through

mini-rewards, subscribing to a high interest magazine, starting a reading club with friends and designating a daily family silent reading time (Chiara).

Summer break provides parents with many opportunities to extend their child's learning experiences through vacations and trips to parks and museums. These less structured activities help children to experience learning in a different way that helps in developing enjoyment that can be lost in the demands of formal schooling (Boulay & Fairchild, 2002). In fact, three of the most influential things that adults can do to keep children interested and motivated to read are buying or giving a book, reading a book to them and sharing a book with them (Edmunds & Bauserman, 2006). Parents, family members, friends and teachers can all make opportunities to model and share a multitude of reading experiences with children. "Summer learning activities nurture children's natural curiosity to learn new concepts, skills, and information" and by "working together, communities and schools can ensure that no child ever takes a vacation from learning" (Boulay & Fairchild, p. 5).

Reading Loss

For most children, summer vacation is a time of fun and relaxation with no thoughts of school, grades, or

homework. Reading a book, for most children, is probably the last thing you would think about doing over the break. Sadly, researchers are finding that the time off from reading is negatively affecting some students. In fact, the first documented study of the summer learning loss was in 1978 by Barbara Heyns (Alexandar et al., 2007).

Heyns (1978) found,

[R]eading to be the single summer activity most strongly and consistently related to summer learning, whether measured by the number of books read, the time spent reading, or the regularity of library use.

Reading during the summer increased children's vocabulary test scores and had a substantial effect on achievement largely independent of family background.

(Alexandar et al., p. 26)

"Many children, particularly those who struggle with reading and can least afford to backslide, arrive at school in the fall with reading abilities that have diminished, on average, by more than two months" (Cooper, Nye, Charlton, Lindsay, & Greathouse, 1996, as cited by Jalongo, 2005, p. 121).

Most all students will experience some "summer learning loss" because they do not use certain skills and knowledge acquired during the school year, which supports

the old adage, *if you don't use it, you will lose it*.

Boulay and Fairchild (2002) reported that "students who take a holiday from reading during the summer score lower on tests at the end of their vacation than they did on the same reading tests at the beginning of the summer" (p. 3). They further stated that "on average, students who suffer from summer learning loss every year do not achieve nearly as well on standardized tests as students who experience summer learning gains" (p. 3). This pattern of low performance can have long lasting effects in a student's educational experience impacting not only elementary and middle school, but also high school dropout rates and low college attendance (Alexandar et al., 2007).

Combining statistical information from 39 studies, Cooper et al. (1996) created a meta-analysis to determine the effects of summer vacation and student learning. They found that students lost at least one month of instruction and that achievement test scores were at least one month lower returning in the fall than before leaving for summer break (Cooper, 2001). Their analysis also found that summer break greatly affected various skills and subject areas. Other key points revealed from their research are: "summer loss is greater in math than reading, summer loss is greatest in math facts and spelling, and summer vacation

increases disparities between middle-class and disadvantaged students' reading scores" (p. 3).

In the Beginning School Study, certain patterns were found when analyzing data across low, middle and high socioeconomic status. Research supported that during the regular school year, students from each group gained about the same amount. However, during the spring to fall comparison or summer break, students from low and middle socioeconomic status suffered learning losses, while gains were made for students from a higher economic status, thus widening the achievement gap (Bracey, 2002).

Discrepancies in learning between economic classes over the break were linked to the different social experiences students were exposed to such as going to parks, fairs, museums, zoos, public libraries, and participating in organized sports. An additional finding that may support the reason behind the disparities between economic classes comes from a study by Richard Rothstein (1998) on the class differences in verbalizations. Rothstein's study found, as Bracey (2002) described, "parents with professional occupations spoke almost 2,200 words an hour to their children, while blue-collar parents offered only about 1,300 words per hour, [and] parents on welfare weighed in with a paltry 600" (p. 2). These

findings clearly foster very different learning environments.

Summer Reading Programs

"Educators consider summer reading very important in developing life-long reading habits, in maintaining literacy skills, and in promoting reading for pleasure" (Cornish, 2003, p. 1). Students who participate in summer reading activities are more likely to read on or above grade level and those consistently reading above grade level are less likely to lose skills learned in the previous year (Minkel, 2002). It is important for students to be involved in summer programs early on in their education and not wait until there is a learning problem to overcome (Boss & Railsback, 2002). Reading programs that occur outside of the school day have great potential to offer students the freedom to read books that interest them, or challenge them to explore new concepts, all while providing an environment that is flexible and tailored to the individual (Little & Hines, 2006).

Summer programs can help those students who need more time to reach a targeted learning goal (Boss & Railsback, 2002). Phillips, Harper, and Gamble (2007) found these programs and similar structured activities have positive achievement effects on students from lower income

households. Providing summer programs, whether through local public libraries or through public schools, can create many challenges, especially in rural communities. Three of the largest obstacles to overcome when designing a summer program are finding community resources and support, employing quality human capital to implement the program, and ensuring program accessibility to participants (Phillips et al.).

Public libraries have traditionally served as the provider of summer reading programs. Research has shown that these programs afford students with a range of educational successes, including development of wider reading skills, improved reading confidence and motivation, increased library skills, and improved author knowledge and book selection skills (Green, 2007). Adversely, another study found that no significant gains were made by participating in a summer reading program and also discovered that a program which offered incentive based rewards merely motivated readers to complete the easiest books available (Kim, 2004).

As for the public school system, summer reading programs are typically linked to summer school and generally instructional time is used for remediation. Grossman and Sipe (1992) found (as cited by Kim, 2004),

these types of remediation programs "produce short-term achievement gains that diminish over time" (p. 170).

Cooper (2001) confirmed those findings on summer school programs, but he also found instances where large positive gains were made including: greater success in programs that served a small number of students and for schools in small communities, programs that provided small group and individual instruction, programs that focused on students in primary grades and success was demonstrated when parent involvement was required. "Summer reading programs that motivate children to read independently at home represent a potentially cost-effective strategy for preventing reading loss" and could help lessen the learning gap between students (Kim, 2004, p. 184).

However, some still feel that more could be done to promote the importance of the summer programs offered by local public libraries and public school settings (Minkel, 2003). Promoting and advertising are essential to getting students, as well as parents, involved in reading programs, so Minkel has compiled a list of suggestions to assist in getting the word out about summer reading. Some suggestions are for local librarians to visit school libraries to discuss upcoming events and activities, to have compiled book lists for student access in both school libraries as

well as public libraries, to hold information sessions during school assemblies or PTO meetings and finally, to give children free books. Having strong home and school communication is important for success.

Measurement of Reading Achievement

Basically, there are two main ways to measure reading achievement, either by standardized or non-standardized testing, but because of the demands of local, state and federal legislation, the concentration of interest is on standardized measurements and the scores they produce. Standardized testing measures what and how much a student knows against a set of norms and can be broken down into two main types, achievement tests or diagnostic tests (Bagin & Rudner, 1994). Standardized achievement tests are designed to assess an individual's relative level of performance; whereas, a diagnostic test is designed to identify the strengths and weaknesses of the test taker.

Lexile Leveling

Lexile leveling is an increasingly popular, standardized form of reading assessment, which provides levels for not only a student's reading ability, but also for the materials being read. "The Lexile Framework for Reading was developed by MetaMetrics, an independent education company funded by the National Institutes of

Health" (Williamson, 2004, p. 12). This framework was designed to help match students with texts on the appropriate level for reading and comprehension success. A "lexile measure reflects the difficulty of a text" and "also indicates a student's reading ability" according to the designed lexile framework ("Lexiles at Home", n.d.).

This provides a common scale to match student reading ability to various texts based on difficulty (Williamson, 2004). "Lexile measures are based on two factors: word frequency and sentence length" and according to Lennon and Burdick (2004) these factors are "excellent predictors of how difficult a text is to comprehend" (p. 4).

Students across the country are receiving lexile measures, or levels from a variety of sources such as state end of grade tests and through Scholastic Reading Inventory (SRI) tests (Lennon & Burdick, 2004). In efforts to improve reading skills and address the achievement gap, teachers are utilizing lexile leveling to match readers with appropriate books and since students can take SRI tests at the teacher's discretion, progress can be monitored easily. Once a student receives a lexile level, he/she can take that level to find a corresponding book, leveled within an estimated range of 150 levels, 50 levels below and 100 levels above (Lennon & Burdick). This type of information

equips the teacher and student to find materials suitable for successful learning experiences.

The Lexile Framework predicts that a student will "comprehend approximately 75% of a book with the same lexile measure" (*What Does the Lexile Measure Mean?*, n.d., p. 2). Therefore, the closer a book level matches the student level, the higher the chances are that the student can read and comprehend the book successfully. Utilizing lexile leveling, one of the most widely used leveling systems, is one way teachers can make sure that students are reading books tailored to individual needs.

Lexile leveling is not perfect. Many skeptics fear that some noteworthy books may be ignored due to not being leveled (Reid, 1998). Another concern over the new approach to leveling is that since books are given a lexile level based on the results of a software evaluation from the Lexile Analyzer, it is feared that "internal qualities of [a] book" will be ignored (Reid). Even with its imperfections, most people do agree that this form of leveling serves as another resource to use in assisting students meet their individual reading needs.

Summary

"Children who read very little do not have the benefits that come with reading, and studies show that when

struggling readers are not motivated to read, their opportunities to learn decrease significantly" (Clark & Rumbold, 2006, p. 7). Reading is important for all students at all ability levels and summertime provides opportunities for fun, pleasure reading that may not occur during the regular school year. Losses in skill areas result from prolonged absences from reading experiences and the achievement gap widens for students who struggle. However, positive parental involvement and participation in summer reading programs can reduce the learning loss associated with summer break.

Chapter 3: Methodology

Introduction

In this study, the effects of summer reading on reading lexile levels and attitudes toward reading were analyzed to determine their relationship.

$H_0:1$ There is no difference in the mean reading lexile scores between participants and non-participants in a summer reading program as measured by the Scholastic Reading Inventory test.

$H_0:2$ Six months after the beginning of school, there is no difference in the mean reading lexile scores between participants and non-participants in the summer reading program as measured by the Scholastic Reading Inventory test.

$H_0:3$ There is no difference in attitudes toward reading between participants and non-participants in a summer reading program as measured by the Early Reading Attitude Survey.

$H_0:4$ There is no difference in mean lexile scores between beginning lexile scores in May and ending lexile scores in January.

The following research question was also addressed: How does parental involvement during the summer reading program affect student reading scores?

A variety of resources were used to collect, measure, and analyze the data gathered. Student achievement was tracked from May 2008 through January 2009.

Participants

At the end of the 2007-2008 school year, all students in the second through fifth grades received a reading packet and were included in the study. By natural selection, two groups formed: 1) those who took part in the summer reading program, and 2) those who did not. It was estimated that, of the 130 potential participants in the summer reading program, more than 50% would participate and would serve as the treatment group, leaving those students who did not participate to serve as the control group.

The school at which this study took place has limited population demographics with 99% of students being Caucasian and 1% Hispanic. All students belonged to the small, rural community in which the school is located, and most members fell into the lower to middle socioeconomic class where 64% of students received free or reduced lunch. Despite limited diversity and over half of the students coming from lower socioeconomic standings, this school has continuously shown growth and high student achievement, ranking as one of the top two elementary schools in the county for 6 consecutive years.

Instrumentation

This study utilized comparative research to look at the effects on those students who participated in the summer reading program compared to those who did not. One of the main data collection resources used in this study to gather student achievement information was the Scholastic Reading Inventory (SRI) test. SRI testing "was proven to [show] scores similar to those in other national and state high-stakes, standardized tests" according to a major norming study consisting of over 500,000 students (Scholastic Reading Inventory Enterprise Edition, 2006). SRI testing has also been subject to six validation studies (Scholastic Reading Inventory Research Summary, n.d.).

SRI tests are computer adaptive and can be administered in a whole group setting or individually, and can be given monthly, quarterly, or as frequently as instructional needs require.

SRI uses a Bayesian scoring algorithm, which provides a paradigm for combining prior information with current data, to come up with an estimate of current reading level. This methodology connects each test administration to every other administration and thus a highly precise measurement. (Knutson, 2006)

After completing an SRI test, students receive a

lexile score that reflects the most challenging text they can comprehend with at least 75% accuracy. Students are also given a list of books that are suitable for their reading lexile level range. SRI tests have been "proven to be an effective assessment to: (1) identify struggling readers, (2) plan for instruction, (3) gauge the effectiveness of a curriculum, (4) demonstrate accountability, (5) set growth goals, and (6) forecast state test outcome" and "are designed to measure a reading ability with texts of increasing difficulty" (Knutson, 2006, para. 1).

To measure attitudes toward reading the Early Reading Attitude Survey (ERAS) developed by McKenna and Kear (1990) was used for both the treatment and control groups (see Appendix). The ERAS is a 20-item survey comprised of two 10-item subsections, one focusing on recreational reading motivation and the other on academic reading motivation (Fifield & Shepperson, 2005). These scores were correlated to lexile levels to determine any impact. Students responded to the survey by circling the Garfield cartoon character that best described their answer to the question. The character is posed in one of four positions representing very happy, a little happy, a little unhappy, and very unhappy feelings toward each statement in the

survey (Fifield & Shepperson). Scores were then quantified according to the response beginning with four points for very happy, three points for a little happy, two points for a little unhappy and one point for very unhappy, then calculated for three scores with a maximum of 40 points for each subsection and an 80 point maximum total score (Fifield & Shepperson).

Based on a standardization sample of over 18,000 students in grades 1-6 from 95 school districts in 38 states, McKenna and Kear reported moderate to high internal consistency coefficients for ERAS scores as well as evidence of structural validity, and they published normative standards on the three scores from the six grades they studied. (Worrell et al., 2007, p. 119)

Other research discovered that the relationship between reading attitudes, as measured by the ERAS, and teacher ratings on the student's reading ability were correlated significantly (Worrell et al.). These evidences support the validity and reliability of the use and interpretation of the data gathered from the Early Reading Attitude Survey (ERAS).

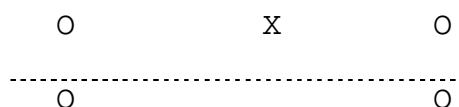
The parent survey questions used in this study were taken from the Evaluation and Training Institute's

Evaluation of the Public Library Summer Reading Program parent survey. This study was conducted by the Los Angeles County Public Library Foundation and published in December of 2001. Questions taken from this survey were selected to determine the parent's role with the child during the school-based summer reading program and to confirm student participation in the program.

Information was also collected from classroom teachers using checklists and survey questions. These data collection tools were created for this study and were piloted before use in the target school. The checklist was composed of various components that would confirm student participation in summer reading. Survey questions were for teacher input on the overall effectiveness of the summer reading program.

Research Design

The research design for this study is non-equivalent control group design.



All students took an SRI test at the end of the 2007-2008 school year and received a final lexile level for that year. Over the summer break, students chose whether or not to participate in the summer reading program. Upon

returning to school in the Fall of 2008, all students took an SRI test again to determine their current lexile level. When the pre and posttests were completed, lexile levels were compared to analyze if summer reading affected their levels.

All data were recorded, coded, and analyzed to determine the effect of the summer reading program and reading lexile growth. Attitudes toward reading were also analyzed for potential implications of reading growth. Data from students who participated in the summer reading program were compared to data from those who did not participate in the program. Additionally, lexile data were taken over a 6 month period from those who read over the summer and were analyzed to determine any long-term effects the program may have had on reading lexile growth. Information gathered from student surveys was also analyzed to determine if and how attitudes toward reading were affected by participating in the summer reading program.

Procedures

Prior to the end of the 2007-2008 school year students took a final SRI test which determined their baseline reading lexile level. The summer reading program was then reviewed for students and parents at the end of the year awards program. Summer reading books and handouts,

including reading logs and suggested activities, were then sent home with the students.

When students returned in the fall, these books, logs, and other materials were collected, which determined those who participated in the program and those who did not. Those students who did participate in the program received special recognition, including a t-shirt, which highlights the school's motto of being "hooked on success" through summer reading and were featured with the principal on the morning announcements.

All students took the SRI test again during the first week of school to determine his/her lexile level for the beginning of the 2008-2009 school year. The ERAS was also given during that first week to measure reading attitudes. Data collected from these fall administrations were then compared to the baseline data from last May.

Parents of those students who participated in the summer reading program were asked to complete a short survey about the summer reading experience. The survey included questions to be ranked according to the Likert rating scale, as well as, additional open-ended questions. Initially, parent surveys were sent home with students in a sealed envelope, which included the survey, directions, and a return envelope. Follow-ups were conducted for those

parents who do not complete and return the survey; phone calls were made and information was sent again, either by students or mail, making every effort to obtain the survey data.

Teachers were also given a summer reading checklist and survey to document student performances and express overall effectiveness of the summer reading program. This documentation helped to further verify the self-reported student data collected on the summer reading program. Teachers received the directions, checklist, and survey during the first faculty meeting and had a 2-week timeline to complete the form. All forms were collected by the principal to ensure full participation.

Continued data on lexile levels were collected on all students in the second through fifth grade through January. SRI tests were given by each classroom teacher during the first full week of January to determine the students' lexile levels and provide additional data to assess lexile growth.

Data Analysis

Data collected were both quantitative and qualitative data and required several statistical procedures to compare means.

In order to answer $H_0:1$, a t-test for independent means

was utilized to determine if there was a difference in the mean lexile level between the participant and the non-participant groups. The independent variable was the group variable, and the dependent variable was the lexile score taken in September.

$H_0:1$ There is no difference in the mean reading lexile scores between participants and non-participants in a summer reading program as measured by the Scholastic Reading Inventory test.

To answer $H_0:2$, an independent t-test was utilized to determine if there were differences in the mean lexile scores at the end of the study. The independent variable was the group variable and the dependent variable was the lexile score taken in January.

$H_0:2$ Six months after the beginning of school, there is no difference in the mean reading lexile scores between participants and non-participants in the summer reading program as measured by the Scholastic Reading Inventory test.

Null Hypothesis three ($H_0:3$) addressed the differences in attitudes between the participants and non-participants in the summer reading program. The independent variable was the group variable and the dependent variable was scores on the student attitude survey.

$H_0:3$ There is no difference in attitudes toward reading between participants and non-participants in a summer reading program as measured by the Early Reading Attitude Survey.

Null Hypothesis Four ($H_0:4$) addressed the growth in mean lexile scores from the baseline data gathered in May to the end of the study data collected in January. The statistical procedure used to examine these data was a Repeated Measures Analysis of Variance.

The research question which addressed the parental involvement with the student's reading during the summer reading program was answered using qualitative data gathered by a survey and interviews. The purpose of the analysis was two-fold: (1) to validate the participation of the student in the reading program, and (2) to determine how involved the parent was with the student as it relates to the reading that took place in the program. The responses provided information that led to the establishment of themes which emerged from the data.

Summary

Data collection for this study utilized quantitative and qualitative research. Reading lexile levels, as indicated by SRI testing, and data collected through the Elementary Reading Attitude Survey were analyzed in a

number of ways that reflected quantitative measures. Information gathered from parent surveys and teacher checklists and surveys were incorporated to determine the validity of the purposed hypotheses and research question.

Chapter 4: Data Analysis

Introduction

This study focused on the effects of a summer reading program on reading lexile levels and attitudes toward reading. The data collected were analyzed to determine what effect the summer reading program had on reading scores. This chapter will be organized to present the data for the four hypotheses and the research question.

Hypothesis 1

$H_0:1$ There is no difference in the mean reading lexile scores between participants and non-participants in a summer reading program as measured by Scholastic Reading Inventory test.

In May, SRI tests were given to all students in Grades 2-5. These test scores serve as the baseline for the analyses used to test $H_0:1$. Table 2 gives the means and standard deviations of the participants and non-participants by grade level. Participation in the reading program served as the independent variable for this hypothesis test. Participation was self-selecting and was not determined until school began in the fall. The experimental group was formed by students who participated in the summer reading program and the control group consisted of students who did not participate.

Table 2

May Mean Lexile Scores and Standard Deviations on May SRI for Participants and Non-Participants

Grade	Participants			Non-Participants		
	N	M	SD	N	M	SD
2	2	370.50	146.37	6	302.67	124.55
3	19	611.00	212.72	12	457.25	162.99
4	16	688.31	196.80	8	520.25	211.17
5	23	778.83	268.23	4	764.25	195.65

Grade 2 had an abnormally small number of participants (N=2) due to children who were developmentally unready to take the test at the end of Grade 2. Table 2 shows that the mean lexile scores for each grade level were higher for participants than non-participants. The standard deviation indicates high levels of variability in the scores in all grade levels.

A t-test for independent means was conducted on the May scores to establish equality in reading lexile scores between participants and non-participants in Grades 2-5 which set the baseline data for the study.

The hypothesis was tested at a significance level of $\alpha=.05$. Results of the t-test for independent means for each grade level are shown in Table 3.

Table 3

T-test for Independent Mean Lexile Scores between Participants and Non-Participants for May SRI by Grade Level

Grade	t-value	DF	P
2	-0.647	6	0.542
3	-2.134	29	0.041*
4	-1.926	22	0.067
5	-0.103	25	0.919

*Significant at $\alpha=.05$

The homogeneity of variance assumption was confirmed for each of the grade levels. Results of the t-test for Grades 2, 4, and 5 demonstrated there was no difference in mean lexile scores for the May administration of the SRI. These data serve as the baseline data for future analyses. Grade 3 scores did show a difference at $\alpha=.05$ in the mean lexile scores between participants and non-participants ($t=-2.134$, $df=29$, $p=0.041$). To test the $H_0:1$ in Grades 2, 4, and 5, a t-test of independent means was used to analyze the September SRI mean lexile scores for each grade level. For Grade 3, an analysis of covariance (ANCOVA) was used to analyze the data with the May SRI scores used as the covariate. Table 4 presents the data for the September SRI test administration.

Table 4

September Mean Lexile Scores and Standard Deviations on September SRI for Participants and Non-Participants

Grade	Participants			Non-Participants		
	N	M	SD	N	M	SD
2	5	420.20	184.13	9	292.11	150.07
3	17	611.65	207.37	11	523.91	239.20
4	16	688.88	231.79	7	551.00	195.24
5	24	797.88	262.96	3	846.67	139.66

Table 4 shows that participants had higher mean lexile scores than non-participants in all grade levels except fifth grade. As in the May SRI scores variability was at a high level. Table 5 displays the results of the t-test for independent means for Grades 2, 4, and 5.

Table 5

T-Test Results for Independent Means between Participants and Non-Participants for September in Grades 2, 4, and 5

Grade	t-value	DF	P
2	-1.416	12	0.182
4	-1.371	21	0.185
5	0.321	25	0.758

No significant difference between mean lexile scores were found in any grade level except third grade. Table 6

gives the results of the analysis for Grade 3.

Table 6

Analysis of Covariance (ANCOVA) for September Mean SRI Scores for Grade 3

Source	DF	SS	MS	F	P
SRI1	1	637706.42	637706.42	25.61	0.000
Participate	1	15455.77	15455.77	0.62	0.438
Error	25	622480.37	24899.22		
Total	27	1311598.11			

The ANCOVA was used to remove the differences in mean lexile scores between the participants' and non-participants' mean SRI lexile scores in May. The results at $\alpha=.05$ show that there is no difference in the mean lexile scores for Grade 3 ($F_{(1,27)}=0.62$, $p=0.438$).

The results show for each of the grade levels one would retain $H_0:1$ indicating no significant differences between participants and non-participants on the September SRI scores.

The purpose of this study was to determine if the summer reading program kept students from regressing in their reading levels over the summer break. To further illustrate the before and after reading levels, graphs were constructed with the mean scores in May and September.

In all grade-levels the non-participants either maintained or increased their mean reading lexile score from the May SRI test to the September SRI test. All participants in Grades 2, 4, and 5 also either maintained or increased their mean reading lexile scores from the May to September tests. Only in third grade did participants show a slight decrease in their mean scores. Figure 1 displays the overall mean lexile scores for both groups for each SRI administration. Table 7 presents the data for the matched-paired means by grade level.

Table 7

Matched-Paired Means and Standard Deviations by Grade Level for Non-Participants

		Participant			Non-Participant		
Grade	Month	N	M	SD	N	M	SD
2	May	2	370.50	146.37	6	302.67	124.55
	Sep	2	524.50	116.67	6	364.00	131.75
3	May	17	622.35	189.83	11	458.27	170.90
	Sep	17	611.65	207.37	11	523.91	239.20
4	May	16	688.31	196.80	7	558.86	195.22
	Sep	16	688.88	231.79	7	551.00	195.24
5	May	23	778.83	268.23	3	842.33	144.34
	Sep	23	801.09	268.38	3	846.67	139.66

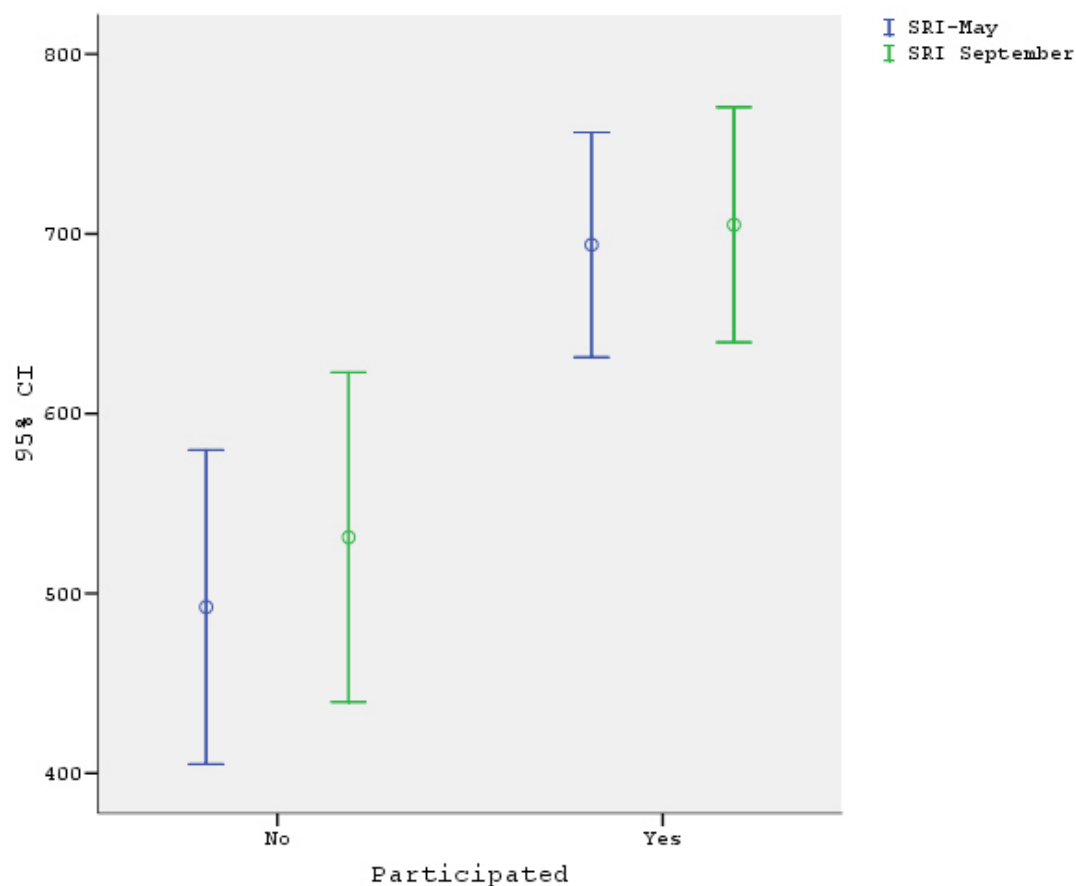


Figure 1. Mean Lexile Scores for Participants and Non-Participants on the May and September SRI Tests with 95% CI.

A paired sample t-test was used to compare the mean scores on the May and September administration of the SRI test and results were analyzed, by grade level, for both participants and non-participants. Tables 8 and 9 reveal the results gathered from this analysis.

Table 8

Paired-Sample t-test for May and September SRI Mean Scores by Grade Level for Non-Participants

Grade	t-value	DF	P
2	-1.213	5	0.279
3	-0.940	10	0.369
4	0.524	6	0.619
5	-0.145	3	0.898

Table 9

Paired-Sample t-test for May and September SRI Mean Scores by Grade Level for Participants

Grade	t-value	DF	P
2	-7.333	1	0.086
3	0.547	16	0.592
4	-0.028	15	0.978
5	-1.266	22	0.219

In second grade there was a significant difference found; however, the data in the second grade due to the skewness of the data with 25 of 31 students receiving no score on the May test is not reliable. Both participants and non-participants made gains in their lexile scores as measured by the SRI test. In third, fourth and fifth grades no significant differences were found between participants and

non-participants. In Grades 3, 4, and 5, scores were maintained or showed only a slight increase.

Grade Level Growth Analysis

Second Grade. Figure 2 shows the mean scores on the May and September tests for the second grade class by participation. The error bars set at a 95% confidence interval show that the September mean lexile scores for both participants and non-participants fall within the 95% confidence interval of the May SRI mean lexile scores.

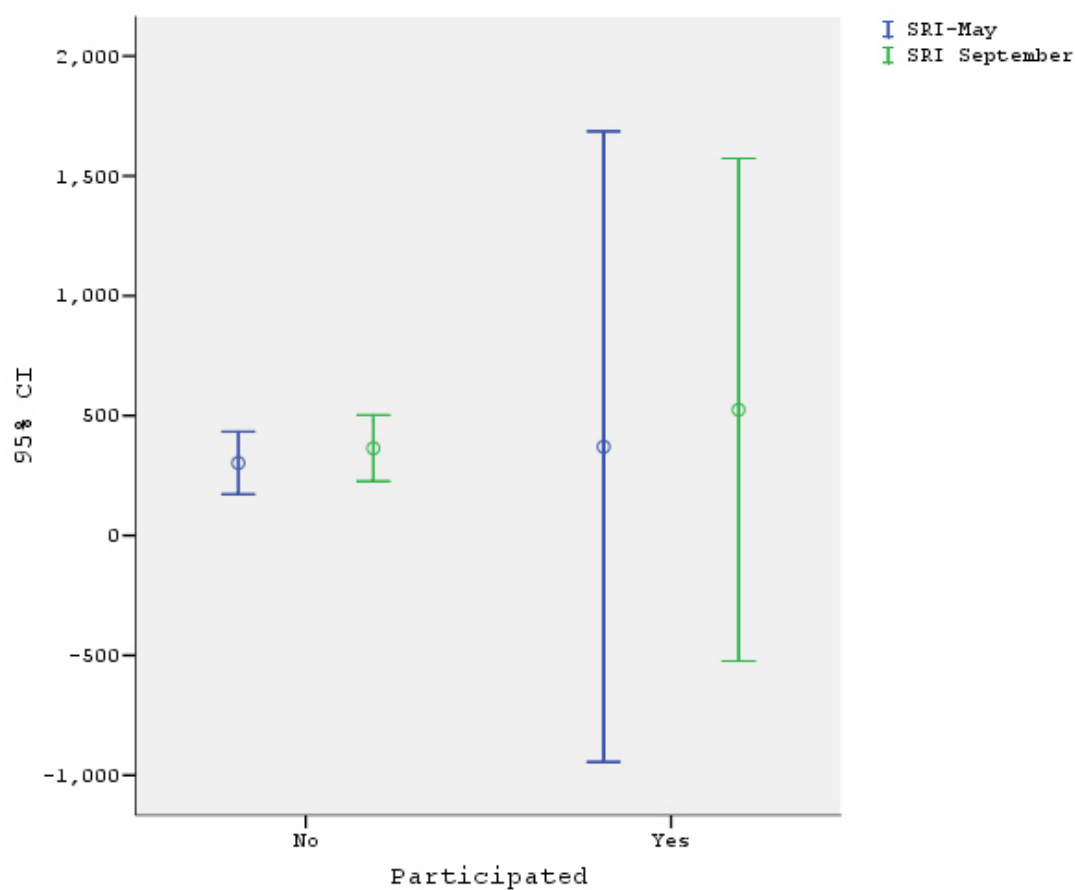


Figure 2. Mean SRI Scores for Second Grade.

During the first weeks of school, teachers were asked to rate their students' overall readiness for class. Second grade teachers reported that 23 of the 31 total second graders were ready for that grade and 8 did not display characteristics typical of students ready for second grade reading instruction. After completing the September SRI test only 13 students increased their lexile scores, leaving 10 others that teachers predicted would grow but did not. Table 10 reports the data collected from teachers and their predictions on student readiness.

Table 10

Teacher Predictions on Student Readiness and Student Results for Second Grade

Student	Teacher Predictions		Total
	Yes	No	
Increase	13	0	13
Decrease	10	8	18
Total	23	8	31

Third Grade. Figure 3 displays the third grade mean lexile scores for both May and September administrations. The chart clearly shows that the September mean lexile scores are within the 95% confidence interval of the May mean lexile scores.

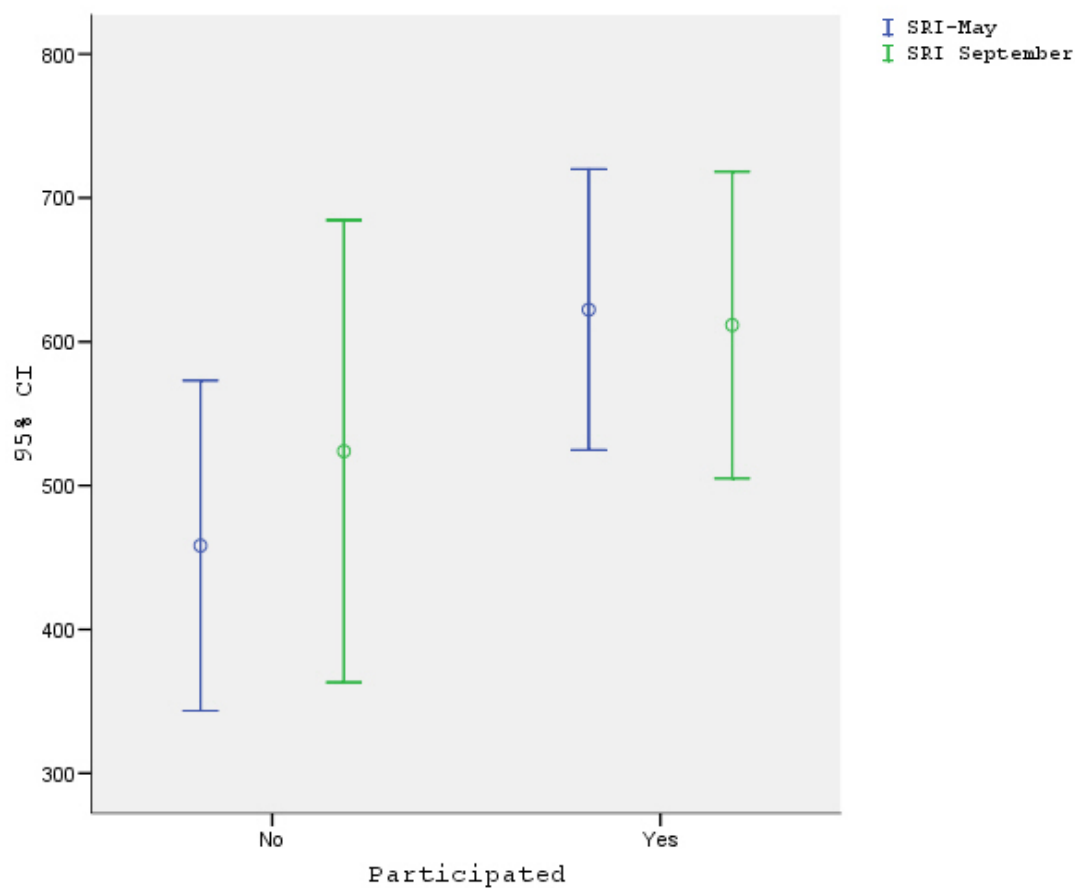


Figure 3. Mean SRI Scores for Third Grade.

Third grade teachers predicted that 24 out of 30 students were overall ready to begin third grade. After taking the September SRI test, results showed that only 13 students increased their lexile level and that 1 student was predicted as not being ready actually made growth. Table 11 shows the results of teacher predictions and actual growth reported.

Table 11

Teacher Predictions on Student Readiness and Student Results for Third Grade

Student	Teacher Predictions		Total
	Yes	No	
Increase	13	1	14
Decrease	11	5	16
Total	24	6	30

Fourth Grade. Figure 4 shows that non-participants scored on average slightly lower in September than in May on the SRI test. Participants scored higher than non-participants but had virtually the same mean lexile score for both the May and September tests. Figure 4 also shows that the September mean lexile scores for both participants and non-participants fell well within the 95% confidence interval for the May SRI means.

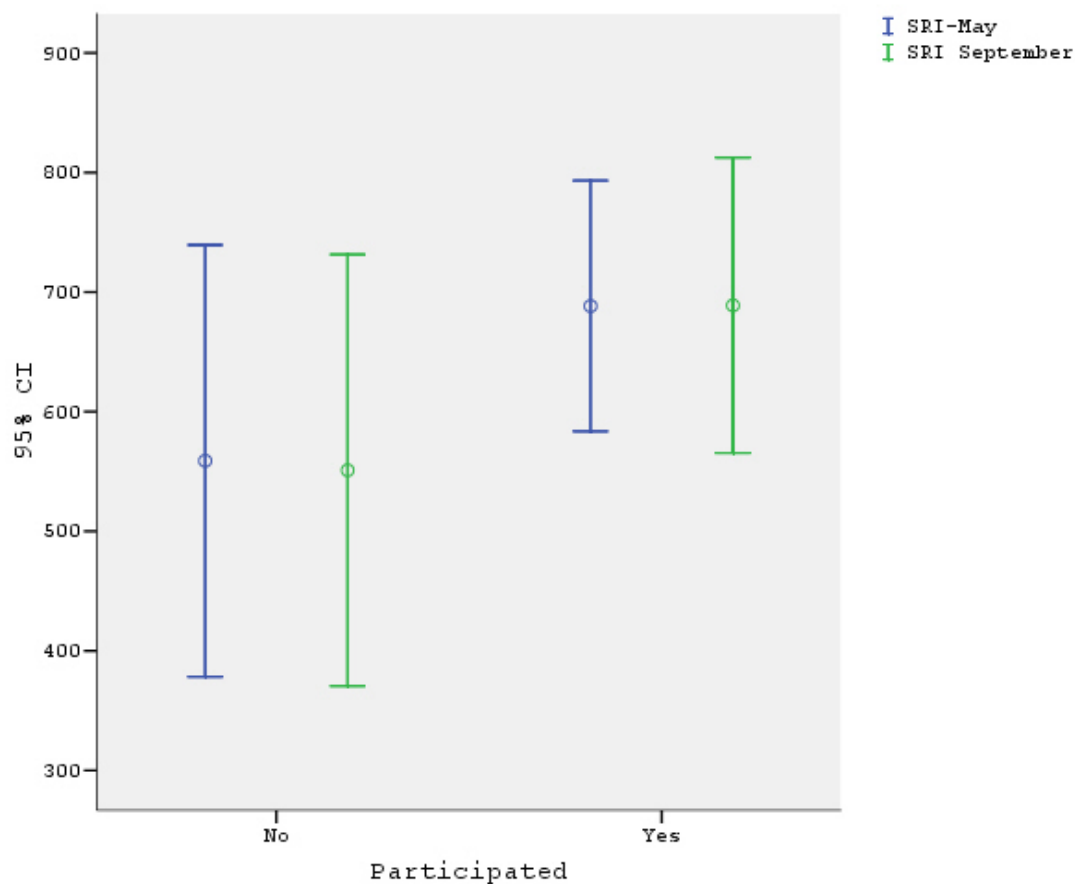


Figure 4. Mean SRI Scores for Fourth Grade.

Fourth grade teachers reported 22 students as being overall ready for their grade. After completing the September SRI test, only 9 students displayed growth in lexile levels, leaving the 13 others that were thought to be ready actually not showing growth. Table 12 shows the results of teacher predictions and actual student growth.

Table 12

Teacher Predictions on Student Readiness and Student Results for Fourth Grade

	Teacher Predictions		Total
	Yes	No	
Student			
Increase	9	0	9
Decrease	13	1	14
Total	22	1	23

Fifth Grade. Figure 5 displays the May and September mean lexile scores for both participants and non-participants in the fifth grade.

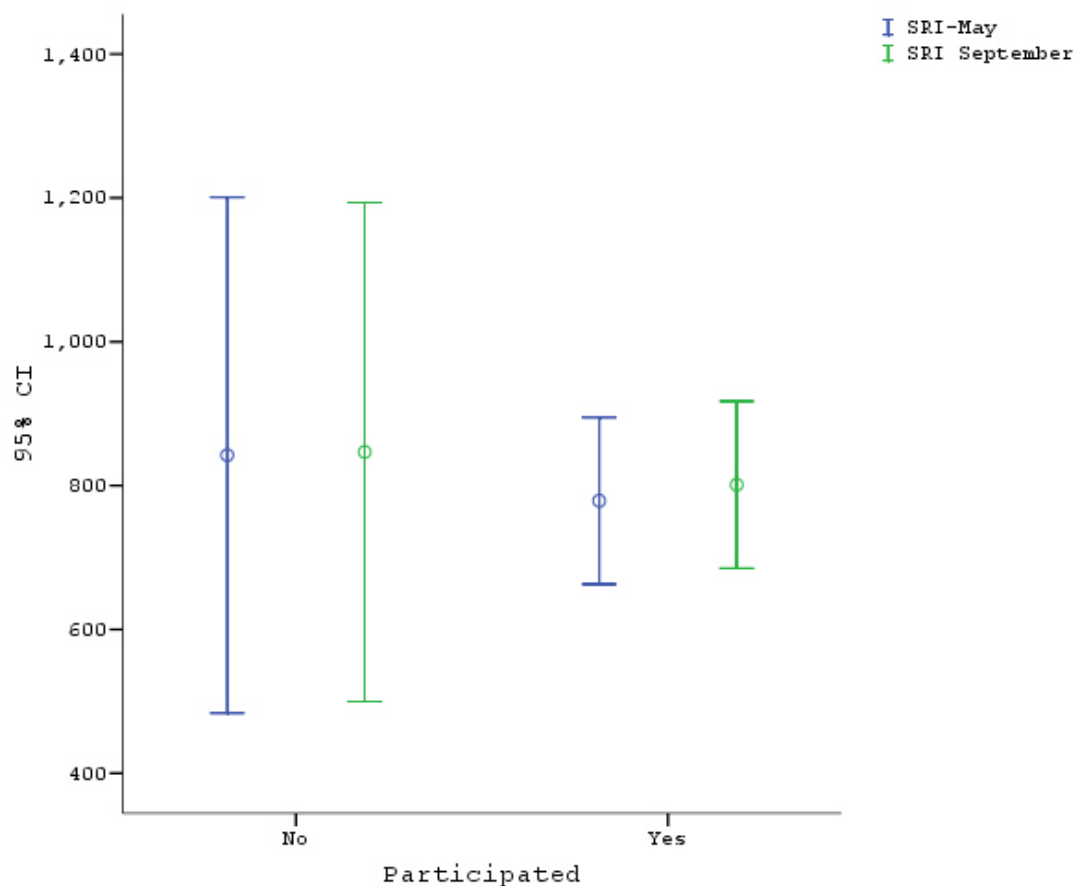


Figure 5. Mean SRI Scores for Fifth Grade.

The fifth grade class as a whole increased their mean scores by 41 points on the September SRI test. Despite having three students with scores under 500 and more than 1200 points separating the lowest and highest individual scores, overall growth was made in this class. The fifth grade class is the only class where the non-participants consistently outsourced the participants of the Summer Reading Program.

Teachers in fifth grade predicted that 26 students were overall ready for fifth grade. After taking the

September SRI test just over half of them showed growth in their reading lexile scores and one student who was predicted as not being ready did in fact show an increase in between the May and September tests. Table 13 reports the results of student growth against teacher predictions.

Table 13

Teacher Predictions on Student Readiness and Student Results for Fifth Grade

Student	Teacher Predictions		Total
	Yes	No	
Increase	9	0	9
Decrease	13	1	14
Total	22	1	23

Hypothesis 2

$H_0:2$ Six months after the beginning of school there is no difference in the mean reading lexile scores between participants and non-participants in the summer reading program as measured by the Scholastic Reading Inventory test.

In January, all students in second through fifth grade took the SRI test for the final collection of data. Scores were then analyzed to determine any differences in mean lexile scores between participants and non-participants. Table 14 gives the means and standard deviations of the

participants and non-participants by grade level.

Table 14

January Mean Lexile Scores and Standard Deviations on January SRI for Participants and Non-Participants

Participants				Non-Participants		
Grade	N	M	SD	N	M	SD
2	6	498.00	224.70	13	297.46	148.89
3	19	700.37	190.05	10	589.70	216.76
4	16	744.56	160.27	7	625.00	179.25
5	23	850.65	259.44	2	801.00	128.69

Table 14 shows that for each grade level the mean lexile scores are higher for the participants than for the non-participants. The standard deviation indicates high levels of variability in the scores in all grades.

Hypothesis $H_0:2$ was tested at a significance level of $\alpha=.05$ to determine if significant differences in the mean lexile scores existed between participants and non-participants. Results of the t-test for independent means for each grade level are shown in Table 15.

Table 15

T-test for Independent Mean Lexile Scores Between Participants and Non-Participants for January SRI by Grade Level

Grade	t-value	DF	P
2	-2.32	17	0.033*
3	-1.42	27	0.167
4	-1.59	21	0.127
5	-0.26	23	0.794

*Significant at $\alpha=.05$

Only second grade showed a significant difference in mean lexile scores on the January administration of the SRI test. For participants, second grade showed a small number of students in participant groups (N=6) which is consistent with group size in other analyses. For non-participants, small N sizes were observed in both fourth and fifth grades which can be accounted for by the large proportion of students in these grade levels that participated in the Summer Reading Program. Based on these data, one would reject $H_0:2$ in favor of the alternate hypothesis $H_A:2 \mu_P \neq \mu_{NP}$. One should take the results of Grade 2 findings with caution. A power test to determine the plausibility of a Type II error is 0.518 which falls below an acceptable standard of 0.80. For Grades 3-5 one would retain $H_0:2$ because in each case $p>.05$.

Hypothesis 3

$H_0:3$ There is no difference in attitudes toward reading between participants and non-participants in the summer reading program as measured by the Early Reading Attitude Survey.

In May students in second through fifth grades took the Early Reading Attitude Survey (ERAS) to establish a baseline for attitudes toward reading prior to the summer reading program. Students were given the same reading attitude survey again in September after the summer reading program took place. The data collected from these two administrations were then organized by those who participated in the reading program and those who did not. Participation was voluntary and thus, the groups were naturally selected by student choice.

The ERAS was analyzed as a whole and by each section, recreational and academic, to gain insights into any changes in scores. The mean scores and standard deviation for each of the 20 questions were also compared. Table 16 reports the results of this comparison.

Table 16

ERAS Mean and Standard Deviation Scores for May and September

Mean and Std. Deviation Scores						
Question	May		September		Net	Change
	Mean	SD	Mean	SD		
1	2.85	0.98	2.73	1.09		-
2	3.08	1.01	2.90	1.11		-
3	2.90	1.07	2.51	1.11		-
4	3.18	1.01	3.00	1.16		-
5	2.84	1.08	2.64	1.13		-
6	3.38	0.86	3.30	0.96		-
7	2.05	1.17	2.12	1.20		+
8	1.75	0.97	1.82	1.05		+
9	3.21	0.93	3.16	1.02		-
10	3.43	0.84	3.06	0.97		-
11	2.67	1.02	2.68	1.15		+
12	2.24	1.17	2.11	1.18		-
13	3.24	0.84	3.04	1.07		-
14	3.11	0.93	2.94	1.08		-
15	3.42	0.82	3.22	0.95		-
16	2.78	1.03	2.70	1.15		-
17	3.11	0.96	2.83	1.06		-
18	2.55	1.19	2.48	1.19		-
19	2.83	1.16	2.65	1.26		-
20	2.96	1.23	2.88	1.29		-

ERAS September data reveal a decrease in the mean scores for almost all of the survey questions. Eight out of ten recreational attitude survey questions showed negative growth and nine out of ten academic survey questions also declined. ERAS data were further analyzed by individual question responses. Tables 17 and 18 display the results of this analysis by recreational responses and academic responses.

Table 17

Early Reading Attitude Survey - May Recreational Attitude Data

Question	N	Very Upset	Little Upset	Little Happy	Very Happy
How do you feel when you read a book on a rainy Saturday?	119	17	16	54	32
How do you feel when you read a book in school during free time?	120	14	14	40	52
How do you feel about reading for fun at home?	120	19	18	39	44
How do you feel about getting a book for a present?	120	14	10	37	59
How do you feel about spending free time reading?	120	18	26	33	43
How do you feel about starting a new book?	121	7	9	35	69
How do you feel about reading during summer vacation?	120	57	21	21	21
How do you feel about reading instead of playing?	120	68	21	24	7
How do you feel about going to a bookstore?	120	7	20	34	59
How do you feel about reading different kinds of books?	120	6	9	33	72

The results of the disaggregation of recreational reading attitude data show that in May, eight out of the ten questions received a response of very happy to little happy. Responses to the remaining two questions received an overwhelming very upset to little upset. These questions addressed reading over the summer and the preference of reading over playing. Questions receiving the highest positive responses dealt with starting a new book and reading different kinds of books.

Table 18

Early Reading Attitude Survey – May Academic Attitude Data

Question	N	Very Upset	Little Upset	Little Happy	Very Happy
How do you feel when the teacher asks you questions about what you read?	119	19	30	41	29
How do you feel about doing reading workbook pages and worksheets?	119	43	31	18	27
How do you feel about reading in school?	119	7	10	50	52
How do you feel about reading your school books?	120	9	19	42	50
How do you feel about learning from a book?	120	5	10	35	70
How do you feel when it is time for reading class?	118	18	24	42	34
How do you feel about the stories you read in reading class?	120	11	16	42	51
How do you feel when you read out loud in class?	120	32	27	24	37
How do you feel about using a dictionary?	120	25	17	31	47
How do you feel about taking a reading test?	120	27	11	22	60

Results of the May academic survey responses, as shown in Table 18, reveal that nine out of the ten questions received a response of very happy to little happy, and one question received a majority response of very upset to little upset. This question asked about feelings toward completing reading workbook and worksheets. Reading in school and learning from a book received the highest positive responses of 84.3% and 86.8%.

Tables 19 and 20 highlight the ERAS data from the September administration. Overall, increases in negative responses were found resulting in a decrease in positive responses. This new distribution of responses did not change the end results when compared to the scores from the May survey. Also, the number of participants was down slightly from the May administration.

Table 19

*Early Reading Attitude Survey – September Recreational
Attitude Data*

Question	N	Very Upset	Little Upset	Little Happy	Very Happy
How do you feel when you read a book on a rainy Saturday?	114	25	13	44	32
How do you feel when you read a book in school during free time?	114	22	9	41	42
How do you feel about reading for fun at home?	114	29	24	25	26
How do you feel about getting a book for a present?	115	22	10	29	54
How do you feel about spending free time reading?	114	26	22	33	33
How do you feel about starting a new book?	111	9	12	27	63
How do you feel about reading during summer vacation?	113	52	19	19	23
How do you feel about reading instead of playing?	113	60	26	14	13
How do you feel about going to a bookstore?	114	13	12	33	56
How do you feel about reading different kinds of books?	114	12	14	43	45

Overall, the September data shown in Table 19 reveal that the same eight out of ten questions have a positive

response when compared to the May data, leaving the remaining questions about summer reading and preference of reading over playing with the majority of responses being little to very upset. While there was a slight decrease from 65% in May to 62.8% in September concerning feelings toward reading over the summer, there was a slight increase in upset responses, 74.2% to 76.1%, for the question on preference to reading over playing.

Table 20

Early Reading Attitude Survey - September Academic Attitude Data

Question	N	Very Upset	Little Upset	Little Happy	Very Happy
How do you feel when the teacher asks you questions about what you read?	114	28	14	38	34
How do you feel about doing reading workbook pages and worksheets?	113	50	23	18	22
How do you feel about reading in school?	114	17	11	36	50
How do you feel about reading your school books?	114	18	16	35	45
How do you feel about learning from a book?	113	8	17	30	58
How do you feel when it is time for reading class?	113	25	21	30	37
How do you feel about the stories you read in reading class?	114	17	24	34	39
How do you feel when you read out loud in class?	114	35	20	28	31
How do you feel about using a dictionary?	112	31	14	30	37
How do you feel about taking a reading test?	114	29	15	11	59

When the data collected from the September ERAS were compared to the May ERAS data very similar results were

found. There was still one question that received a majority of upset responses. Even though the overall percent of responses was down slightly from 62.2% to 60.3%, this question remained the only one from the academic section with an overall negative response. The other nine questions showed positive majority responses. The distribution of responses within each question fluctuated from the May data, but overall the outcomes were the same.

Grade Level Comparison Data

Second Grade. In second grade there was very little difference between mean attitude scores of participants and non-participants. In fact, non-participants showed a slight increase in May attitude scores and in all but one category on the September scores. Table 21 displays the mean and standard deviation scores for both the May and September ERAS administrations.

Table 21

*May and September Mean and Standard Deviation ERAS
Scores for Second Grade Participants and
Non-Participants*

Participation		Yes			No		
		N	Mean	SD	N	Mean	SD
May	Recreational	7	28.57	6.73	24	30.67	4.40
	Academic	7	28.71	5.35	25	30.58	6.58
September	Recreational	7	27.00	9.24	24	27.83	7.24
	Academic	7	29.00	7.02	24	28.17	7.11

Participant and non-participant data were analyzed further to compare mean scores between the May and September administrations. The data were broken down into recreational and academic subgroups in this analysis for both the participants and non-participants. Table 22 shows the differences in second grade mean academic and recreational attitude scores for paired samples.

Table 22

Mean Changes in Academic and Recreational Attitude Scores for Grade 2 by Participants and Non-Participants

	Participants		Non-Participants	
	N	Mean	N	Mean
Academic Attitude Change May - Sept.	7	0.29	24	-2.41
Recreational Attitude Change May - Sept.	7	-1.57	24	-2.84

Third Grade. Mean attitude scores for participants in May were higher than those for non-participants. More than nine points separated the total attitude scores on the May survey between those who participated and those who did not. In September, the margin was much closer leaving less than half a point separating the scores for the participants and non-participants. Only on the recreational attitude section did the non-participants score higher. Table 23 shows the means and standard deviation scores for both May and September participants and non-participants by recreational and academic scores.

Table 23

May and September Mean and Standard Deviation ERAS Scores for Third Grade Participants and Non-Participants

Participation		Yes			No		
		N	Mean	SD	N	Mean	SD
May	Recreational	19	29.79	7.31	13	25.62	7.66
	Academic	19	32.05	6.10	13	25.77	6.50
September	Recreational	19	26.16	8.15	13	26.62	6.62
	Academic	19	27.11	8.86	13	26.92	6.21

Further analysis of participant and non-participant data was conducted for the survey subgroups. Mean and standard deviation scores were taken from paired samples correlations to highlight changes from May to September. Table 24 shows the results of this breakdown.

Table 24

Mean Changes in Academic and Recreational Attitude Scores for Grade 3 by Participants and Non-Participants

	Participants		Non-Participants	
	N	Mean	N	Mean
Academic Attitude Change May - Sept.	19	-4.94	13	1.15
Recreational Attitude Change May - Sept.	7	-3.83	13	1.00

Mean scores for participants in third grade decreased in both the academic and recreational subgroups while non-

participant mean scores for both academic and recreational attitudes rose slightly.

Fourth Grade. Attitude scores for participants were higher than non-participants in all categories in both the May and September surveys. September scores for non-participants decreased while scores were maintained or increased slightly for participants. Table 25 shows the ERAS scores for participants and non-participants on the May and September administrations.

Table 25

May and September Means and Standard Deviations for Grade 4 Recreational and Academic Attitude Scores by Participants and Non-Participants

Participation		Yes			No		
		N	Mean	SD	N	Mean	SD
May	Recreational	16	29.06	6.60	7	27.14	5.87
	Academic	16	29.38	6.54	7	29.00	4.36
September	Recreational	16	29.38	6.85	7	23.14	3.76
	Academic	16	29.38	6.29	7	26.14	5.05

Paired samples statistics were used to further compare the data collected for participants and non-participants. This data compared the mean scores for participants and non-participants on each survey subgroup. Table 26 displays the results found.

Table 26

Mean Changes in Academic and Recreational Attitude Scores for Grade 4 by Participants and Non-Participants

	Participants		Non-Participants	
	N	Mean	N	Mean
Academic Attitude Change May - Sept.	16	0.00	7	-2.86
Recreational Attitude Change May - Sept.	16	0.32	7	-4.00

No change was found between mean scores for participants on the academic attitude subgroup, while changes were found in all other areas. Non-participant recreational score fell 4.00 points from May to September.

Fifth Grade. May attitude scores for non-participants were higher than scores for participants. In September, however, participant attitude scores increased in all but one area and were higher than non-participant scores. Table 27 highlights the results of the comparison between participants and non-participants for both ERAS administrations.

Table 27

May and September Means and Standard Deviations for Grade 5 Recreational and Academic Attitude Scores by Participants and Non-Participants

Participation		Yes			No		
		N	Mean	SD	N	Mean	SD
May	Recreational	24	27.63	5.11	4	27.50	3.11
	Academic	24	25.75	5.76	4	27.25	4.19
September	Recreational	24	27.08	6.16	4	25.50	3.11
	Academic	24	26.71	7.21	4	24.50	6.35

Paired samples statistics were used to further compare the data collected for participants and non-participants. These data compared the mean scores for participants and non-participants on each survey subgroup, academic and recreational. Table 28 displays the results found.

Table 28

Mean Changes in Academic and Recreational Attitude Scores for Grade 5 by Participants and Non-Participants

	Participants		Non-Participants	
	N	Mean	N	Mean
Academic Attitude Change May - Sept.	24	0.96	4	-2.75
Recreational Attitude Change May - Sept.	24	-3.83	4	-2.00

The data showed that there was less than a one point gain for participants on the academic attitude scale while

participants declined on the recreational attitude scale. Non-participants declined on both the academic and recreational scales. None of these changes are large enough to be considered a shift in attitude.

Hypothesis 4

$H_0:4$ There is no difference in mean lexile scores between beginning scores in May and ending lexile scores in January.

In answering $H_0:4$ data were collected three separate times; May, September, and January. All students in second through fifth grades took the SRI test to obtain a lexile score. An analysis of variance with repeated measures was used to analyze the data for differences between the administrations.

Second grade data was not included in this analysis due to the limited number of students with actual lexile scores in May. Globally looking at the data for Grades 3, 4, and 5 showed a sharp increase in means from the May to the January test. The same can be said for both participants and non-participants in the summer reading program. Figure 6 highlights the results of this global analysis.

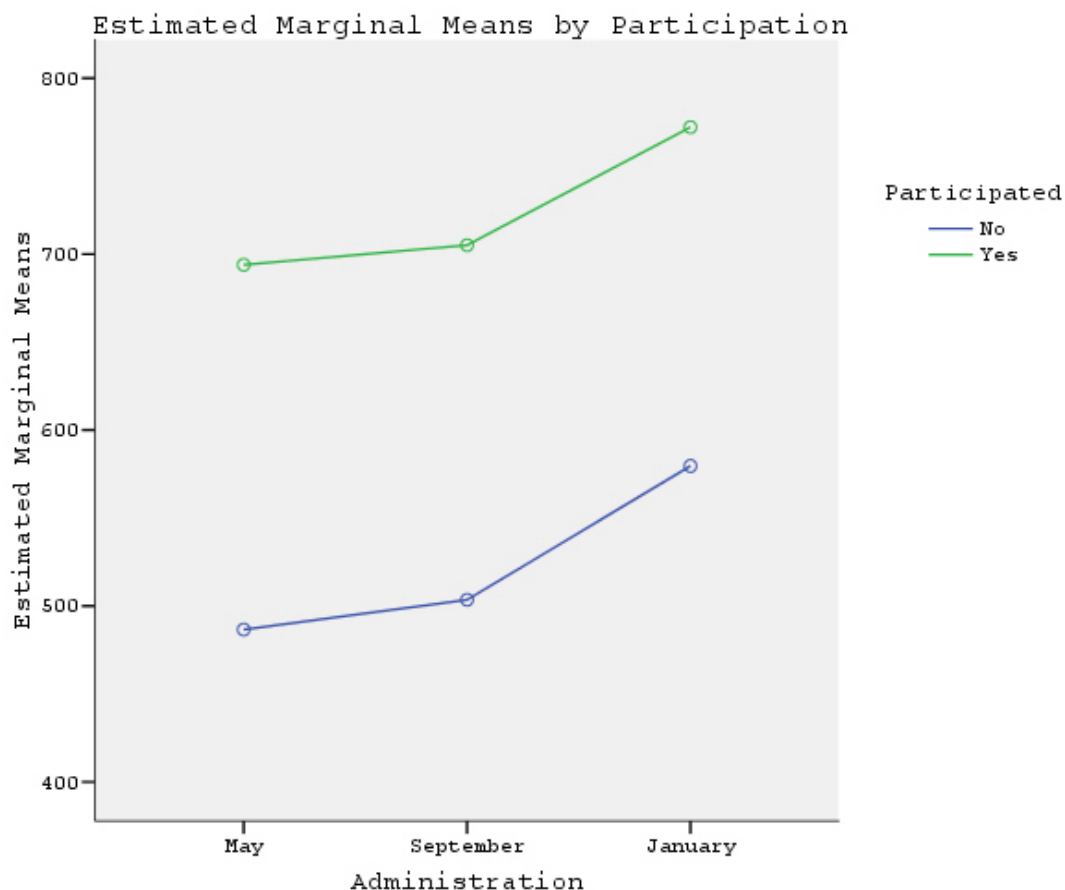


Figure 6. Global Estimated Marginal Means for Participants and Non-Participants.

A definite increase was seen for both groups of students involved. Participants began with higher means than non- participants, grew slightly more at the beginning of the school year and then continued to increase. However, non- participants displayed the sharpest increase between the final two administrations.

Third Grade. Third graders showed a large increase between the May and January SRI administrations. Mean scores for participants decreased slightly from May to

September, but then sharply increased between September and January. For non-participants the mean SRI score increase slightly between May and September and increased sharply between September and January. Results are shown in Figure 7.

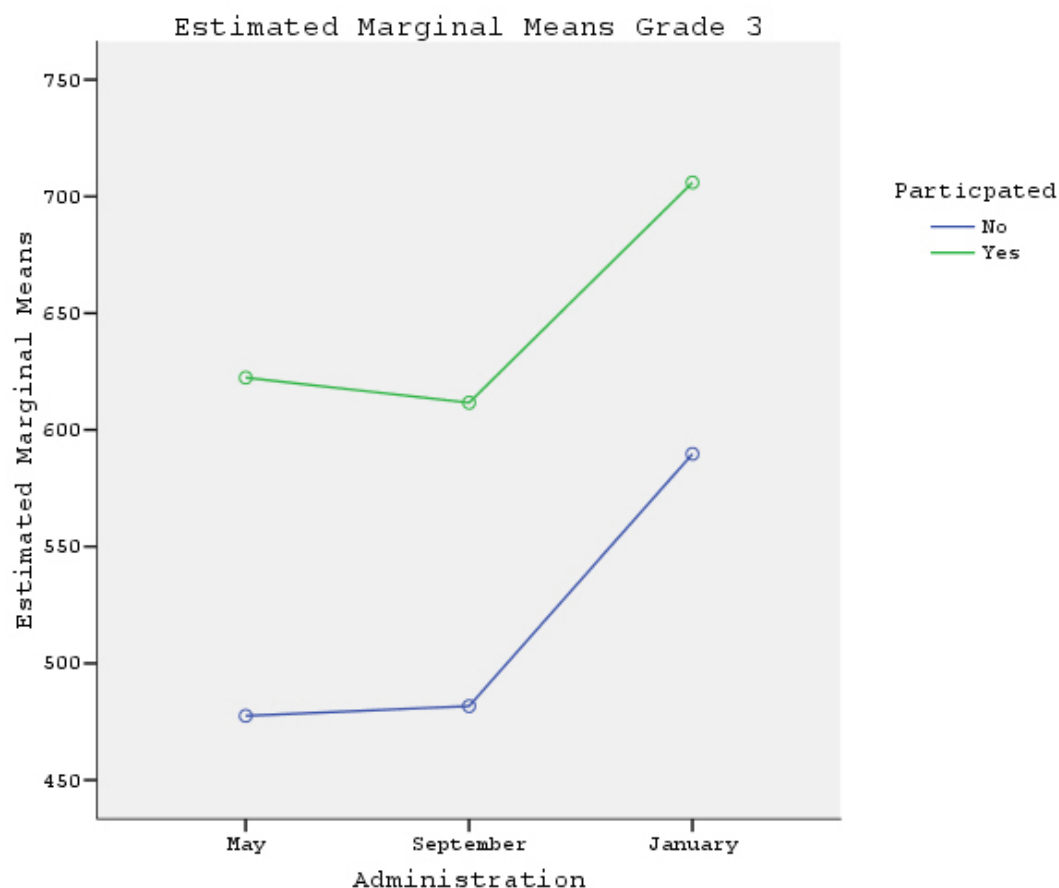


Figure 7. Estimated Marginal Means of Third Grade.

The significance test $H_0:4$ for Grade 3 was conducted by using an Analysis of Variance with Repeated Measures. Table 29 displays the pertinent information related to this test.

Table 29

Repeated Measures for SRI Mean Lexile Scores for Grade 3

Source	SS	DF	MS	F	P	η^2
Administration	166428.67	1.5	109656.82	8.068	0.003	0.24
Error	515729.46	37.9	13592.21			

The difference in mean scores between May and January was significant at $\alpha=.05$ with $F=8.068$, $p=.003$. The test also determined a small effect size ($\eta^2=0.24$).

Fourth Grade. Data for fourth grade also showed overall increases in means from May to January. Non-participants recorded a minimal decrease in September, then showed a sharp increase between the September and January mean SRI scores. Participants did not show a decline between May and September mean SRI test scores but did show a sharp increase in mean scores between September and January. A plot of fourth grade mean SRI Scores for participants and non-participants is displayed in Figure 8.

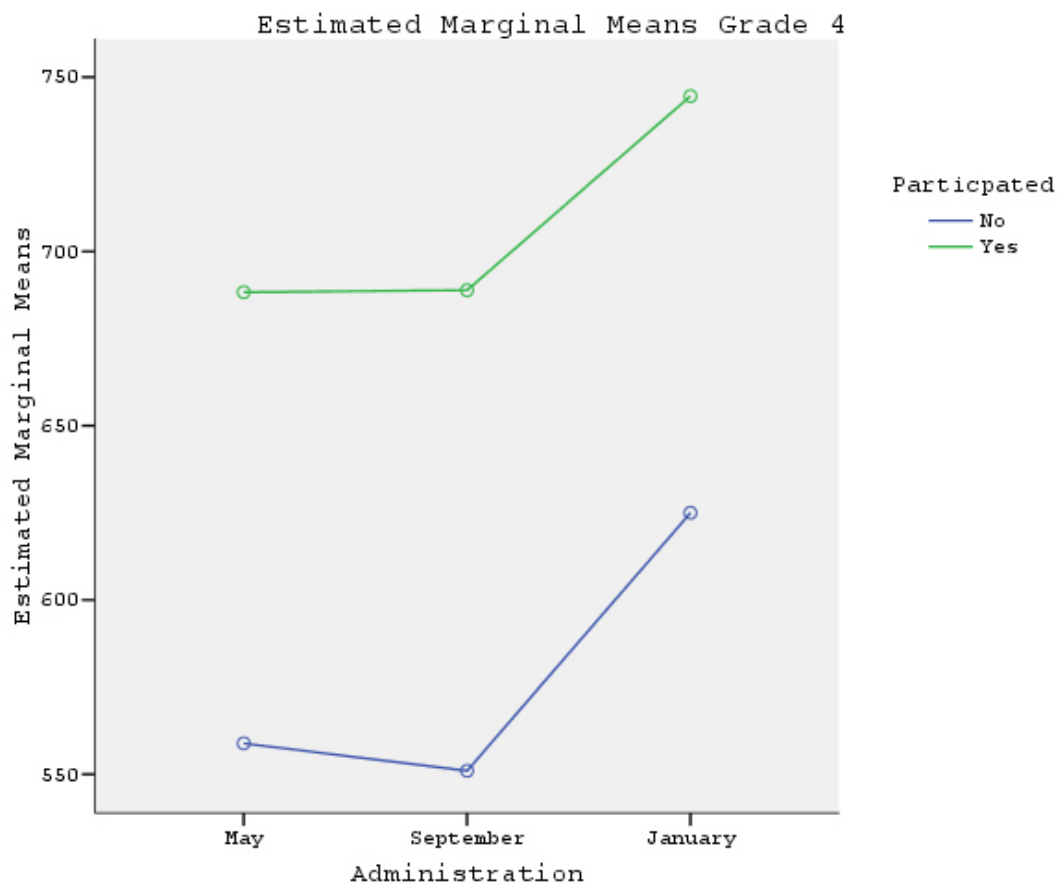


Figure 8. Estimated Marginal Means of Fourth Grade.

An Analysis of Variance with Repeated Measures was used to test $H_0:4$ for the fourth grade. Results are displayed in Table 30.

Table 30

Analysis of Variance with Repeated Measures Grade 4

Source	SS	DF	MS	F	P	η^2
Administration	51701.91	1.2	44240.51	2.98	0.092	0.124
Error	364746.03	24.5	14862.26			

The data showed that one would retain $H_0:4$ for grade 3. The η^2 value of 0.124 would indicate a low effect size for these measurements.

Fifth Grade. Non-participants showed an increase between May and September mean SRI scores and then showed a sharp decrease between September and January. Participants, however, displayed a continuum of growth from May through January. Results of the fifth grade data are shown in Figure 9.

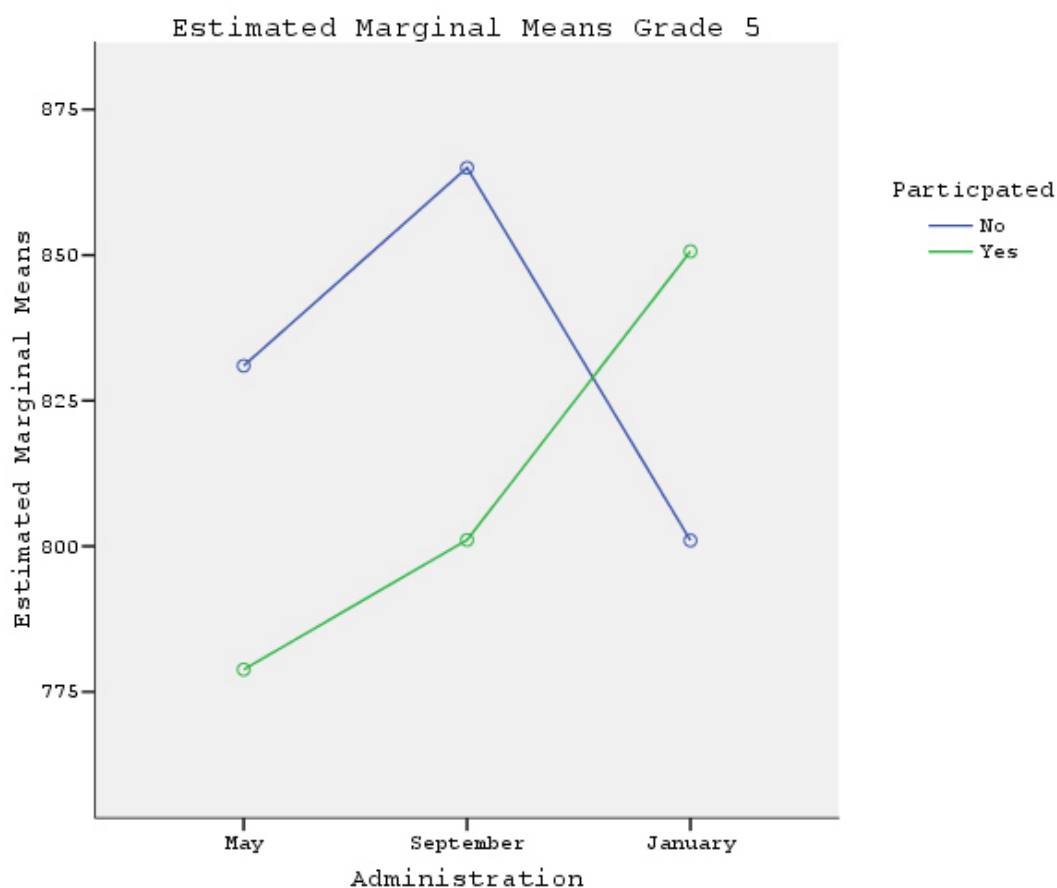


Figure 9. Estimated Marginal Means of Fifth Grade.

Table 31

Analysis of Variance with Repeated Measures Grade 5

Source	SS	DF	MS	F	P	η^2
Administration	3142.15	1.3	2338.48	0.145	0.779	.006
Error	497759.13	30.9	16016.41			

Table 31 displays the results from the Analysis of Variance with Repeated Measures. The data showed that one would retain $H_0:4$ at $\alpha=.05$. There is no difference between the May and January mean scores. There is no detectable effect size with $\eta^2=0.006$.

The sphericity assumption for each of the repeated measures calculations above was violated so the Greenhouse-Geisser adjustment was reported. Greenhouse-Geisser is a more conservative determination of the degrees of freedom and therefore a more conservative estimate of the F-statistic.

Research Question

How does parental involvement during the summer reading program affect student reading scores?

Parents of both the participants and non-participants were given a short survey about the summer reading program and the summer reading habits practiced in the home.

Responses given were either rated based on a time span or a

range of agreement. The final question asked for the total number of books read by the student over the summer. Table 32 highlights the mean and the standard deviation scores for the parent survey responses.

Table 32

Parent Survey on Summer Reading

Question	Mean	SD
How often did your Child read this summer?	2.50	1.12
How many hours did you read with your child this summer?	1.90	1.13
I will continue to make time to read with my child in the future.	3.47	0.74
My child enjoys the school Based summer reading program.	2.50	1.28
My child read ____ books this summer.	14.65	20.03

Parent survey data reveal a wide range of responses, with the greatest difference found on the number of books read over the summer. Answers ranged from reading no books to 120 books over the break. All but one respondent agreed or strongly agreed to make time in the future to read with their child(ren). When asked the question about how many hours they read with their child(ren) the majority of responses, 31, fell into the 0-4 hours category, while only five responded that 15 or more hours were spent reading

with their child(ren).

Third through fifth grade parent survey data were further analyzed to compare responses between parent involvement, as measured by time spent reading with their child(ren) and making time to read in the future, to lexile growth as measured on the SRI test from May to September. Results are organized by grade level and are shown in Table 33.

Table 33

Means and Standard Deviations on September SRI by Parental Involvement

Involved				Not Involved		
Grade	N	M	SD	N	M	SD
3	9	515.00	229.63	20	597.00	214.09
4	4	651.25	132.54	19	646.00	244.31
5	7	564.71	301.94	20	886.80	170.26

Only in fourth grade were mean scores slightly higher for students with involved parents than students with parents who were uninvolved. In fact, in third grade there was an 82 point difference and in fifth grade 322.09 points separate those not involved, as measured by the survey data, over those involved.

Chapter 5: Results

Having the ability to read is one of the most essential skills to possess because of its role in so many aspects of daily living. Participation in society immerses you in print; beginning as a child you are exposed to multiple forms of reading experiences before entering school. A continuous emphasis is placed on reading throughout school and high expectations are in place. Therefore, children are expected to read both at school and at home.

This study looked at students in the second through fifth grades at a rural elementary school in western North Carolina and their participation in a Summer Reading Program. Students were naturally selected into two groups based on participation in the school-based summer reading program. Reading lexile levels and attitudes toward reading were the major focuses for data collection. The collected data were then analyzed to determine any significant differences between the two groups. Results were also reviewed globally and by individual grade levels.

The information in this chapter is organized by the four hypotheses and the research question.

Hypothesis 1

H₀:1 There is no difference in the mean reading lexile

scores between participants and non-participants in a summer reading program as measured by Scholastic Reading Inventory test.

When baseline data were collected in May students in Grades 2, 4, and 5 demonstrated no difference, while students in Grade 3 showed a significant difference in mean lexile scores on the initial administration of the SRI. When the September SRI data were analyzed to test $H_0:1$, a t-test for independent means was used in the second, fourth and fifth grades, while an analysis of covariance (ANCOVA) was used to examine third grade data, with the May SRI scores used as the covariate. Results of these analyses support the retention of the null hypothesis.

Participation in the school-based summer reading program was higher in Grades 3, 4, and 5 than in Grade 2. In fact, second grade had an abnormally small number of participants ($n=7$) due in part to a lack of effective teacher and parent communication and explanation of the summer reading program. Second grade students rely heavily on parent initiative and when there is a breakdown in communication or a misunderstanding, students suffer the consequences. These reasons may support the small number of participants found in second grade.

In all other grade levels, participants outnumbered

non-participants and participants had higher mean lexile scores on the September SRI administration. In fact, the average difference between the two groups was over 140 lexile levels. However, when mean scores for participants and non-participants were analyzed in third, fourth and fifth grades, no significant differences were found because scores were either maintained or showed only a slight increase.

In second grade there was a significant difference, however, the skewness of the data, 25 of 31 students receiving no score on the May SRI, is not reliable. This large number of students with missing data could be explained by the varying reading levels of the then first-grade students.

In first and second grades students are just beginning to develop as readers and display a wide range of reading abilities, all of which are considered on grade level. Any student that was reading at a level unacceptable to the standards of second grade was not promoted and thus their data were not a part of this study. The SRI program is designed to assist these developing readers and their teachers find appropriate books that can be successfully read with a high degree of accuracy.

Paired sample t-test statistics were also used at each

grade level to determine growth for participants and non-participants. In Grades 2 and 5 both groups displayed a slight increase in mean scores from May to September. In third grade participants showed a slight decrease while non-participants increased, and in fourth grade participant scores were maintained and non-participant scores fell slightly.

Teachers in each grade level were asked during the first weeks of school to rate their students' overall readiness for class based on general observations. At all grades, teachers overestimated their students' readiness based on the September SRI scores. The data collected found that teachers were only correct about half of the time in predicting student readiness as measured by an increased SRI mean lexile score on the September test. The reliability of these data was found to be inconsistent and not usable for accurately predicting student readiness.

The null hypothesis, therefore, is retained because the results of the independent t-test found no significant difference at any grade level between the participants and non-participants.

Hypothesis 2

H_0 :2 Six months after the beginning of school there is no difference in the mean reading lexile scores between

participants and non-participants in the summer reading program as measured by the Scholastic Reading Inventory test.

In January, all students in second through fifth grade took the SRI test again for the final collection of data. Scores were analyzed to determine any differences between participants and non-participants. A t-test for independent means was used to examine the data. For all grade levels, participant mean scores were higher than those of non-participants. The standard deviation indicates high levels of variability in the scores for each grade as well.

Several reasons could support these findings. Participants in the summer reading program all began with higher lexile scores which demonstrated that they were naturally better readers. Also, in a given grade there will be a range of reading ability levels which will produce a variety of SRI scores. Most students, no matter what their level, will demonstrate some increases in ability after being in school 6 months. Therefore, it is not surprising that both participants and non-participants displayed some overall growth.

The null hypothesis is retained. This is supported by the data that showed there was no difference in mean scores between participants and non-participants.

Hypothesis 3

H₀:3 There is no difference in attitudes toward reading between participants and non-participants in the summer reading program as measured by the Early Reading Attitude Survey.

All students in second through fifth grades took the Early Reading Attitude Survey in May to establish baseline data, and in September to use for comparison and analysis. Data from the administrations were then separated for participants and non-participants. Scores for the ERAS were then analyzed by each section, recreational and academic, as well as for a total score for both participants and non-participants. Mean and standard deviation scores were examined to highlight any differences.

As a whole, mean attitude scores decreased on all but two recreational attitude questions and all but one academic attitude questions from the May to September administrations of the survey. In the recreational attitude section the two questions that did not decline in responses were those that dealt with reading over the summer and reading instead of playing. Both of the questions continued to receive high marks of dislike. The question in the academic attitude section that did not decrease dealt with feelings about being asked questions about what you have

read. The responses to this question gained in overall positive feelings.

Grade level comparisons revealed very little differences between mean attitude scores of participants and non-participants. Paired sample statistics were used to further analyze the May to September attitude survey data for participants and non-participants. Even though there was some fluctuation between the mean scores for participants and non-participants between the two survey administrations, the overall outcome remained the same. No significant differences were found in attitudes toward reading between participants and non-participants as measured by the ERAS. Therefore, the null hypothesis was retained and no difference was reported.

Hypothesis 4

$H_0:4$ There is no difference in mean lexile scores between beginning scores in May and ending mean lexile scores in January.

An analysis of variance with repeated measures was used to analyze the data for differences between the three administrations of the SRI test. Second grade data were not included in this analysis due to the limited number of students with an actual lexile score. Therefore, data taken from third through fifth grades were used to test this

hypothesis.

Overall, definite increases were found for both participants and non-participants as would be expected from 1 year to the next and from the beginning of the school year to mid-year. Mean scores for non-participants displayed the sharpest increase between the final two administrations of the SRI. Again, it is to be expected that the non-participants, or those less motivated to read, would see improvements once they were back in school. In Grades 4 and 5 there was a limited number of non-participants so it can be assumed that most were motivated to read and were fairly successful readers.

When the data were examined by grade level, similar results were found. Most students, participants and non-participants showed an overall increase in scores from the May to January SRI. There were some that decreased slightly from May to September, but then a sharp increase was seen from September to January. This was not true in fifth grade however. Overall, negative growth was found between the May and January SRI tests. When the data were broken down into participants and non-participants a difference was observed. Non-participants displayed some growth between the May and September test, but then declined sharply once back in school. Participants, however, followed a continual

growth pattern from May through January.

Because no significant difference between participants' and non-participants' means scores was observed, the null hypothesis was retained and it was concluded that there was no difference in mean lexile scores from May to January. At best it can be said that overall mean lexile scores were maintained. Even though some growth was displayed, there was not enough evidence to support a significant increase in mean scores between administrations.

Research Question

How does parental involvement during the summer reading program affect student reading scores?

All parents were asked to complete a short survey about the summer reading program and their reading habits at home. A wide range of responses were found when the survey data were collected. Responses were rated based on a time span or range of agreement from strongly agree to strongly disagree. All but one respondent agreed or strongly agreed to make time in the future to read with their child(ren). When asked about how much time they had read with their child(ren) the majority of responses fell in the 0-4 hours category.

Second grade data were not used because of the

difference in the assumed parental need for help with reading for second graders as opposed to that of third, fourth and fifth graders. Third through fifth grades data were used for further analysis. For these grades parental involvement was measured by time spent reading with their child(ren) and making time to read in the future. This was then analyzed with lexile growth as shown on the SRI test from May to September.

In third and fifth grades there were measurable differences between mean lexile scores on the September SRI for those students whose parents were considered not involved over those considered involved as outlined by the survey data. Only in fourth grade were mean lexile scores higher for those students with parents defined as involved over those not involved.

When interpreting these data the reading levels of the students should be taken into consideration. Most students in third through fifth grade are independently reading chapter books and would not require parental support in order to be successful. More research would be needed to accurately describe the role of parental involvement on student reading scores.

Summary

The school-based summer reading program was found to

have a limited impact on reading lexile scores. At best the program helps students maintain their current reading level; however, this cannot be generalized to all students. No significant differences or growth was experienced by either of the groups.

Attitudes toward reading for participants and non-participants also were not affected by the school-based summer reading program. Students basically answered questions the same way from May to September. The same questions received an overall majority of either positive or negative responses on both administrations. There were no significant differences found with reading attitudes.

The data collected on parental involvement were limited and provided minimal insight for measuring the effectiveness of parental involvement during the summer reading program. Additional research would need to be conducted to accurately describe the role of parental involvement in a summer reading program.

Recommendations

At present, the summer reading program receives limited funds and publicity. In order to become a more effective program, additional funds and support from all stakeholders are needed. The number of books available for students needs to be increased along with providing a wider

selection of genres, topics and levels. An additional recommendation to help improve this program would be to allow students to come in over the summer to exchange books and display projects. Reading practice over the summer has the potential to not only maintain reading levels, but to increase scores and to help decrease the achievement gap between ability levels.

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Appendix

Early Reading Attitude Survey (ERAS)

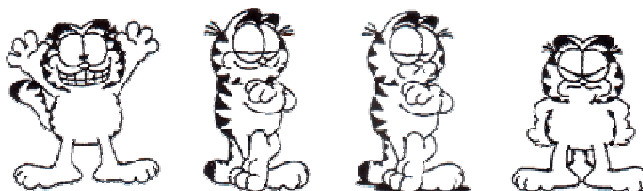
Elementary Reading Attitude Survey

Date _____ Grade _____ Name _____

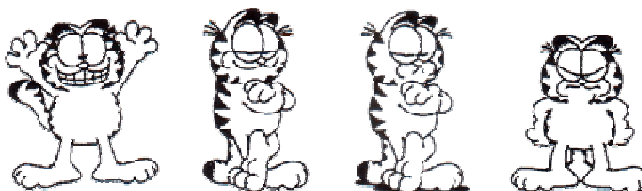
1. How do you feel when you read a book on a rainy Saturday?



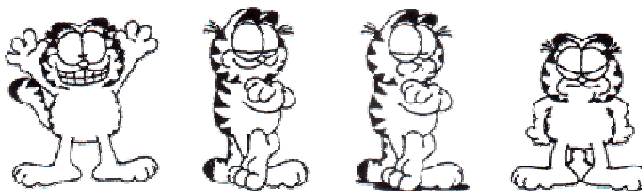
2. How do you feel when you read a book in school during free time?



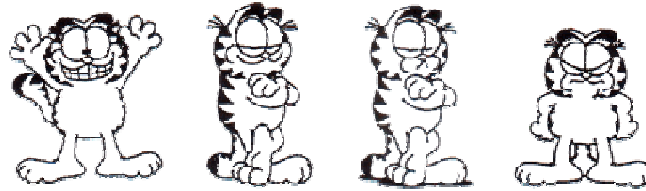
3. How do you feel about reading for fun at home?



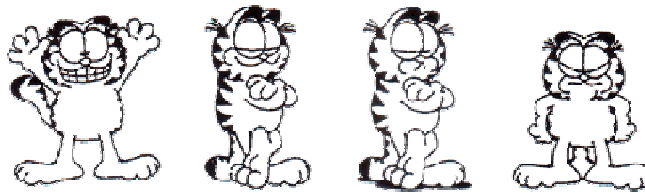
4. How do you feel about getting a book for a present?



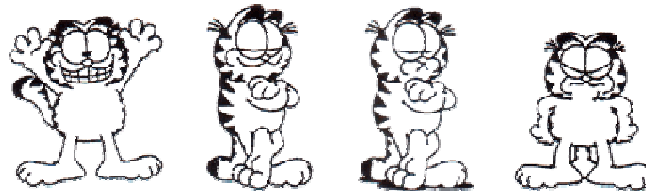
5. How do you feel about spending free time reading?



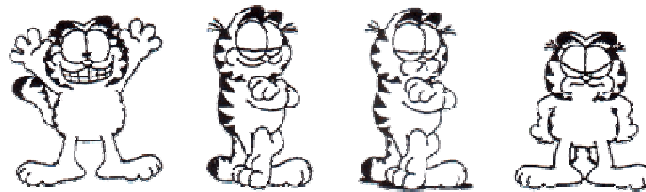
6. How do you feel about starting a new book?



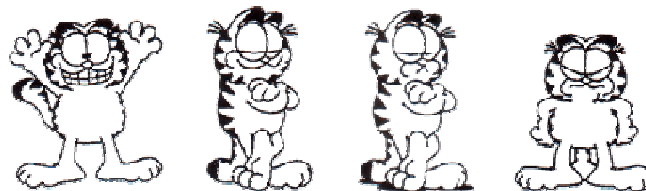
7. How do you feel about reading during summer vacation?



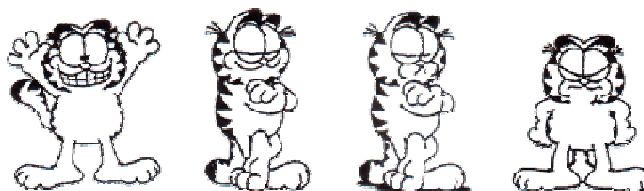
8. How do you feel about reading instead of playing?



9. How do you feel about going to a bookstore?



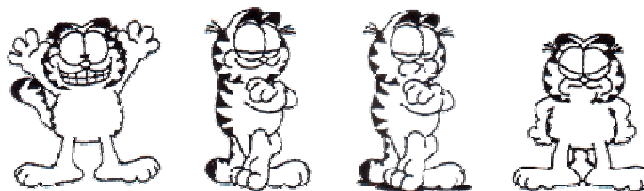
10. How do you feel about reading different kinds of books?



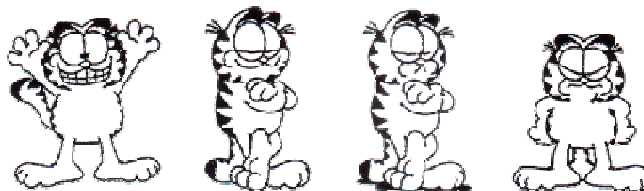
11. How do you feel when the teacher asks you questions about what you read?



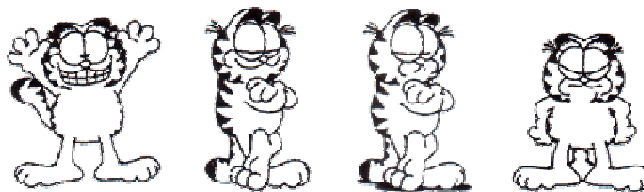
12. How do you feel about doing reading workbook pages and worksheets?



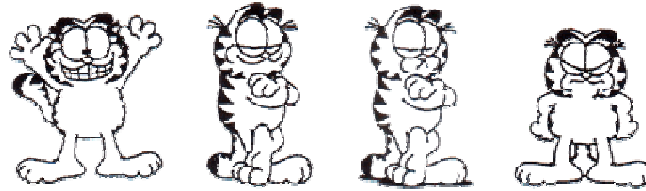
13. How do you feel about reading in school?



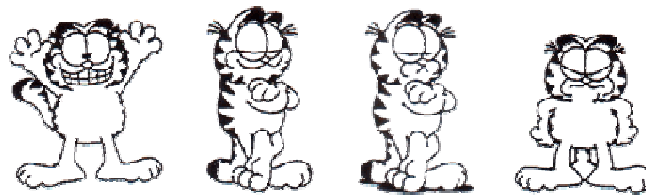
14. How do you feel about reading your school books?



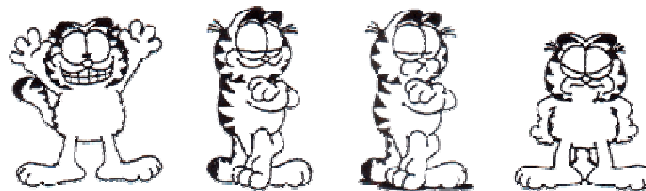
15. How do you feel about learning from a book?



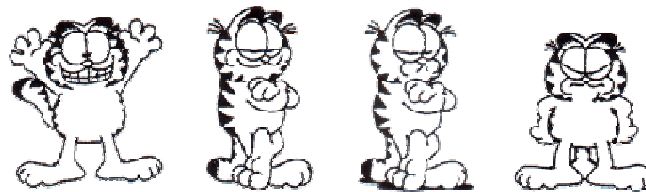
16. How do you feel when it time for reading class?



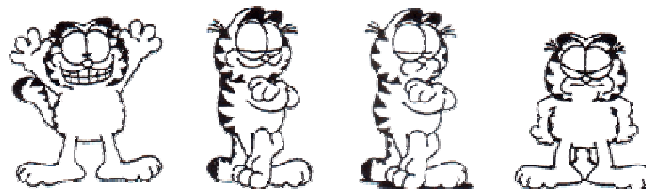
17. How do you feel about the stories you read in reading class?



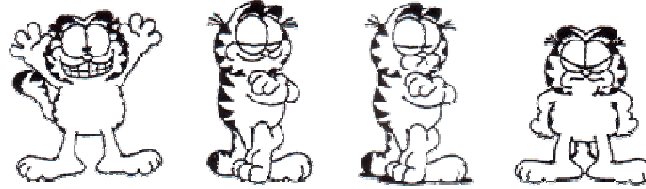
18. How do you feel when you read out loud in class?



19. How do you feel about using a dictionary?



20. How do you feel about taking a reading test?



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Kear, D.J. & McKenna, M. C. (1999). Measuring attitude toward reading: A new tool for teachers. In S. J. Barrentine (Ed.). *Reading assessment: principles and practices for elementary teachers. A collection of articles from "The Reading Teacher."* p. 199-214. Newark, DE: International Reading Association.

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