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A Program Evaluation of a Summer Program Designed to Reduce Summer Learning Loss

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A PROGRAM EVALUATION OF A SUMMER PROGRAM DESIGNED TO REDUCE SUMMER LEARNING LOSS

By

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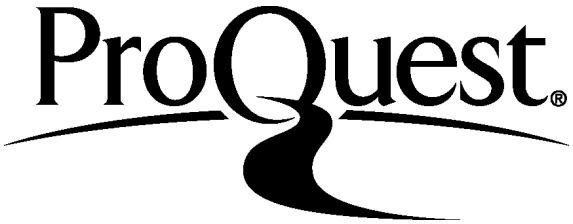

Abstract

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University of Nebraska, 2015

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Public School Districts across the nation are facing the challenge of increasing student achievement. Learning that is lost over the summer has been found to be a key factor of why some students fall further and further behind their peers. Higher socio-economic students actually can make gains in reading over the summer, while students in poverty may lose one to two months of achievement. In mathematics, all students may experience a summer learning loss, while students in poverty may lose up to three months. Although students in poverty learn at similar rates as their peers during the school year, the losses incurred over the summers accumulate and have been found to be part of the reason for the achievement gap.

School leaders know that quality summer learning programs may help keep student learning more continuous. The cuts in educational funding since the financial crisis of 2008 make it crucial for districts to know if money spent on summer programming is producing the desired results.

The purpose of the program evaluation study was to evaluate the impact of one district's summer learning program on achievement for invited students who attended the three-week program. The goal of the summer program was to combat summer learning loss in reading and math, as well as to help reduce the achievement gap in this district. Therefore, this program evaluation analyzed grade level mean scores in reading and math

from pre-test to post-test for participating students. To evaluate summer learning loss, the study compared changes in achievement from spring to fall for participating students and similar students who were invited but chose not to attend. To determine any impact on the achievement gap in the host district, the study examined the third grade Nebraska State Accountability Assessments for reading and math for students who participated for two or more summers. This data was compared with similar students who were invited and chose not to attend. Further analysis was conducted using data for students in poverty who participated for two or more summers, as compared to all students and similar students in poverty who were invited and chose not to attend. Finally, parents are key stakeholders and this study looked at parent feedback regarding satisfaction with the program and the value of program offerings.

The study found that participating students did make significant gains in reading from pre-test to posttest. In addition, no summer loss was found in reading achievement from spring to fall. In the area of mathematics, students in kindergarten grew significantly, yet the other grade levels experienced no significant change. From spring to fall, the study found that participating and non-participating students experienced significant loss. It was found that students who participated in the summer learning program for two or more years did not perform significantly different on the Nebraska State Accountability Assessments than non-participating students and all other students. Finally, parent feedback indicates that the majority of parents are satisfied with the program and they find the Family Day activities and resources to be helpful.

This program evaluation indicates that the summer program has had a positive impact on reading achievement, but summer learning loss occurred in mathematics. The

study suggests that district and program administrators may want to evaluate the instructional strategies and materials used for teaching math and revisions may be needed. Parent satisfaction was strongly agreed upon, but other areas on the parent survey suggest additional analysis. Further research may be warranted with regards to the impact on other participating students such as English Language Learners and racial sub-groups.

Acknowledgements

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The second group that I would like to recognize is comprised of my friends, colleagues, and mentors in the Millard Public School District. A special thank you goes to Dr. Mark Feldhausen and Mr. Andy DeFreece who have supported the Elementary Learning Center from the very beginning. I am thankful for their belief in the program's mission to help combat summer learning loss for the most at-risk students, and their trust in me to oversee the program implementation each year. I would also like to thank my colleagues, Dr. Jennifer Reid and Mrs. Barb Waller who always supported me and "just listened" whenever needed.

Finally, the most important group I would like to thank is my family. The support of my husband, Dan, and my children Max and Karen has been unwavering. My parents, Dalene and Arden Schlitter, and sisters Gjoa King and Heidi Menard have be a source of encouragement every step of the way. I could not have completed this enormous undertaking without their understanding, love, and support.

Learner is one of my top five strengths. I never dreamed that I would "learn" my way through two undergraduate degrees, a master's degree, and a doctorate. I am

thankful to God for these opportunities and the many learning opportunities that are still to come.

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CHAPTER 1

Introduction

Across the country, more and more school districts are increasingly facing financial difficulties. Demands for higher student achievement are increasing, while many schools are experiencing a reduction in funding. At least thirty-five states are still funding K-12 education programs at lower rates per-student than in 2008, according to the Center for Budget and Policy Priorities, a team in Washington that analyzes the impact of government policies (Leachman & Mai, 2014). Educational programs are being eliminated, areas of study, such as World Language, are being postponed to later grade levels, class sizes are growing and services that directly impact student learning are being cut. If programs are being cut, how can higher levels of student achievement be obtained?

Summer learning programs have been one way for schools to foster continuous learning and to reduce what has traditionally been known as the "summer slide", or summer learning loss. On average, most students will lose a two month grade level equivalency in mathematical computation over the summer (Cooper, Nye, Charlton, Lindsay, & Greathouse, 1996). Even worse, students in poverty may lose up to three months achievement in reading.

A study conducted by John Hopkins University found that 92% of the 100 school districts surveyed included remedial programs in the summer (Borman, 2000). This high percentage might indicate that summer learning programs are successful. However, if schools are making significant cuts in programming and staffing during the school year, how can they justify spending money on a summer program? Many school districts are

eliminating summer learning programs, and the Los Angeles Unified School District is a prime example. According to a recent study by the Association for School Administrators, in 2012 nearly 35% of districts surveyed were contemplating eliminating their summer school programs (Ellerson, 2012).

Can a summer learning program make a significant impact on student achievement? If summer programs do positively impact learning, given the level of accountability for achievement that schools are facing, can they afford not to offer a summer learning program? School districts must be able to answer this question when the budgeting process rolls around and it will be crucial to have data to support their position.

Statement of the Problem

Students learn when they are in school, and it has been found that they lose skills over the summer months when they are on vacation (Cooper, et al., 1996). In addition, this summer learning loss has been found to accumulate over the years, especially for students in poverty (Entwisle, Alexander, & Olson, 2001) and contributes to the achievement gap that many school districts are facing. The program being evaluated was designed to provide extended learning time for students in poverty in order to increase achievement and reduce the district's achievement gap.

Purpose of the Evaluation

The purpose of this study was to determine the impact of one district's summer learning program on achievement for invited students who attended the three-week program compared to other invited students who chose not to attend. The study analyzed achievement data for students in preschool, kindergarten, first, and second grade who

were invited based on below proficient assessment scores in reading, writing, and math, limited English proficiency and eligibility for free or reduced price lunches. Data collected from those students who attend was compared to other qualifying students who were also invited but chose not to attend the program.

This comparison will provide data that can answer many questions. Does student achievement increase by extending learning opportunities into the summer months? Can school districts reduce the accumulative effect of the "summer slide?" Are the costs of a summer learning program worth the investment?

Literature Related to the Evaluation Purpose

The typical nine-month U.S school calendar is based on a largely agrarian society that dates back over a century. Today, less than 1% of Americans claim farming as an occupation and the need for children to be out of school during the summer in order to work on the farm is almost nonexistent (U.S. Environmental Protection Agency, 2009). As cities grew and child labor laws prevented children from working, families and communities searched for ways to keep children off the streets and out of trouble. Opportunities for summer activities that were recreational and educational began to blossom.

Summer school is often thought of in a negative light, fostering images of punishment for poor performance, trying to avoid the possibility of retention and a less than fun way to spend the summer for both students and teachers. It is easy to see why, when budgets are cut, school districts think of cutting summer school. However, if summer programs are evaluated and restructured, could the summer months be a prime

time to extend learning and address school reform? Students may be more engaged, have additional learning opportunities and ultimately experience higher achievement.

With the demands of adequate yearly progress (AYP) called for in the No Child Left Behind Act (2001), higher student achievement, and reducing achievement gaps between various groups of students is crucial. One contributing factor of learning gaps is the well-documented "summer slide." In 1996 Cooper et al. conducted a meta-analysis of 39 studies on the impact of summer vacation. At best, students demonstrate no academic growth over the summer months. At worst, they found that students may lose one month of grade level skills. Math computation and spelling showed the largest losses (Cooper et al., 1996). This is understandable since these are both skills that benefit greatly from repeated practice.

For children in general, summer vacation creates greater losses in math than in reading. However, research has found that the summer slide has a particularly negative impact on the reading achievement of children in poverty (Cooper et al., 1996). Reading achievement for middle-class children basically remains the same over the summer, while poor children show a marked decline. The researchers found that these children fell about 2 months behind in reading skills as compared to middle-class children. This is equal to a third of the typical amount learned during the school year (Cooper et al., 1996). The families of children in poverty tend to have fewer educational resources at home or in their communities that provide opportunities to practice reading and literacy skills, as compared to middle-class families (Entwisle, 1997).

Even more alarming, Entwisle (1997) found that the Beginning School Study (BSS) of Baltimore children showed that summer learning losses of poor children

accumulated over their elementary years. The achievement scores of poor children fell further and further behind the scores of more advantaged children. The researchers concluded that these accumulated summer losses almost exclusively created the learning gap between middle-class students and those in poverty (Entwisle1997).

In a more recent meta-analysis of 93 studies, Cooper, Charlton, Valentine, and Borman (2000) found that the average achievement advantage for summer remedial programs was approximately one fifth of a standard deviation (SD), for those who attended summer school as compared to those who did not. However, this study also concluded that middle-class students who attended summer school benefited more than disadvantaged students who attended. It appears that summer school offered to all students can actually widen the achievement gap.

The increased benefit to middle-class students who attended summer school may be explained by data that suggests that without summer school their reading scores basically remain the same (Cooper et al., 1996). Therefore with instruction, it is logical that scores would increase.

In another study, researchers looked at spring-to-fall reading achievement data for a sample of over 300 elementary students from high-poverty schools (Borman, Benson, & Overman, 2005). Achievement data from a community based, academically intensive program was combined with data from a parent telephone survey with regards to the characteristics of the family and the nature of summer activities for the children. The findings from this study support earlier research that children from high-poverty families experience summer achievement losses if they do not attend a summer learning program. However, it was not found that different levels of socio-economic status (SES) within a

neighborhood made a difference on student achievement as expected. The study asserts that perhaps SES differences are less important than the neighborhood poverty context in explaining summer learning (Borman et al., 2005).

The summer achievement slide can be positively affected by a high-quality, voluntary summer learning program. However, Borman et al., (2005) suggest that just being assigned to summer school is not enough. The summer slide can actually be prevented if parents make it a priority to get their children to attend summer school. In their study, each additional week of attendance at the Teach Baltimore summer program resulted in nearly a 0.05 SD increase in the fall achievement test. The students who attended the program "returned to school in the fall with achievement scores more than one quarter of a standard deviation higher than those of peers who did not attend the program" (Borman et al., 2005, p. 147).

Research has shown that middle-class or children from families with higher SES have greater benefits from summer programs (Cooper et al., 1996). Consistent attendance at summer programs also results in better achievement. Are higher SES and attendance related? Borman et al. (2005) speculate that at least part of the reason for the higher achievement of middle class children is that higher-SES families are more able to ensure that their children attend regularly. They found that every two days of additional attendance was associated with approximately one SD in SES. A few factors may be the availability of better transportation, more flexible work schedules, and stronger connections with the markedly middle-class summer school program staff. In general, however, children from higher-SES families did not have greater achievement benefits than children from lower-SES families.

Borman and Dowling (2006) went on to do a longitudinal study that also used data from the Teach Baltimore summer program. The results of this study found that voluntary summer school programs can help improve longitudinal achievement for children from high-poverty schools. However, regular attendance is still a key factor. The research found that students who attended at least two of the four summers at an average attendance rate had achievement scores approximately one half of one standard deviation higher when they returned to school after the fourth year of the program. This is equal to 50% of one grade level in vocabulary and 40% of one grade level in comprehension.

Importance of the Evaluation

It is widely known, and research supports, that students experience a loss of learning over the summer months. Although all students can lose up to two months achievement in math, students from lower-SES families can also lose two months in reading (Cooper et al. 1996). What's more, the summer learning losses for children in poverty accumulate over time and can be the root of 2/3 of the learning gap in reading encountered by the middle grades (Alexander, Entwisle, and Olson, 2007a). Other research has found that participation in a quality summer program can provide learning benefits (Borman et al. 2005). Attending a quality summer program for multiple years can have an even greater impact (Borman & Dowling, 2006). This study focuses on academic achievement of children below proficient in reading and math from high poverty schools who attended a summer learning program for one year or multiple years.

Volunteering to attend or just being assigned does not generate the desired results. Parent involvement and support of regular attendance has been found to be a major factor

in learning benefits (Borman et al., 2005). This study also examined the parent participation in organized family and community activities.

As the neighborhoods and communities within this suburban school district change and evolve, demographics are changing as well. The socio-economic status of families is changing and the numbers of students eligible for free and reduced lunch continue to rise. As the achievement gap between middle and lower socio-economic students increases, it is important to provide summer learning opportunities for students in order to combat lower achievement and the "summer slide". However, with budgets being slashed and programs being cut, it is even more important to ensure that programs are high-quality and are providing positive benefits to student achievement. This study provides important information to the district on program effectiveness, student achievement, and parent satisfaction.

Introduction of the Program

The purpose of this research was to evaluate the Elementary Learning Center (ELC) Summer Program offered by a public school district in Nebraska. The program was implemented to address learning deficiencies and to combat the effects of summer learning loss for elementary students. Students entering kindergarten through third grade from six elementary schools were invited to participate based on an assessed need in reading or mathematics. The six schools are located in the same quadrant of the school district and have very similar demographics. Two of the six schools are cluster sites for English Language Learners (ELL) and all have a Free and Reduced Priced Meal eligibility rate ranging from 40%-62%. In addition, ELL students from two other English Language Learner cluster schools were also invited.

The ELC program began in the summer of 2011 and has been offered for four years. Participating students attended the program for three hours per day for 15 days. The average class size was less than 10 students and certified teachers were hired, with preference given to those from the six participating schools. There was no cost to attend and free transportation was provided. Breakfast and lunch were served each day at no cost.

During the three hour instructional block lessons were focused on reading, writing, and mathematics. The ELC used the Great Source Summer Success® Reading and Houghton Mifflin guided readers for reading and writing instruction. In mathematics, the curriculum consisted of Great Source Summer Success® Math and lessons from the district math curriculum, Scott Foresman-Addison Wesley Mathematics. Whole group and small group instructional strategies were used and specific skills were targeted based on data collected at the end of the school year as well as on the first day of the program.

Stakeholders

The Elementary Learning Center (ELC) Summer Program has multiple groups of stakeholders; students, parents, teachers, district administrators, the Board of Education and the Learning Community of Douglas and Sarpy Counties. First, participating students and their families are primary stakeholders. These students were invited to attend the ELC because they were demonstrating a deficiency in reading or math skills. The students and families have a vested interest in increasing achievement and reducing the amount of learning that is lost over the summer. This program evaluation will answer

important questions. Does summer school make a difference? Is summer learning loss reduced? Are the children catching up with their peers?

The second group of stakeholders includes the ELC teachers and on-site administrators. Feedback from the program evaluation provides valuable information. Are students making gains in reading and/or math? Are instructional strategies and curriculum materials effective? Do families value the activities and services provided on Family Days? What should be changed?

The Learning Community of Douglas and Sarpy Counties is another stakeholder and they have an interest in the results of the ELC program evaluation. The Learning Community is a legally required collaboration of the 11 school districts in Douglas and Sarpy Counties and it is governed by a Coordinating Council. The coordinating council is comprised of six appointed school board members and two elected representatives from each of the six sub-council areas. The Learning Community assesses a common levy which is used for various programs to fight the effects of poverty on student learning. The Elementary Learning Center (ELC) Summer Program is partially funded by a grant from the Learning Community. Therefore, the Learning Community is very interested in the effectiveness of a program receiving grant funding. As a stakeholder, they make decisions with regards to funding and they set the grant requirements. The results of this program evaluation could affect their decisions.

District administrators and the Board of Education are the final group of stakeholders and they are particularly important because they have the ability to make and implement decisions with regards to the ELC. The information gleaned from the program evaluation can be used to decide if the program is meeting its goals. Are these

students from high-poverty schools making gains over the summer? Are the changes different or similar for math and reading? Are changes in student achievement reducing the achievement gap? Ultimately, school district administrators and the Board of Education have the authority to decide if the ELC should continue to be offered, with or without funding from the Learning Community.

Research Questions

The research questions were used to analyze learning achievement in math and reading for qualifying students who were invited and participated in the summer learning from pre-test to post-test. Additional questions were used to analyze learning achievement in math and reading for participating students and non-participating students in order to determine what changes occurred in achievement from the spring of the previous school year to the fall of the upcoming school year. The next question compared achievement on the Nebraska State Accountability assessments for participating and non-participating students. The final question addresses parent satisfaction with the program and with the Family Day activities and resources. Ten evaluation questions were determined, and each contains a set of sub-questions.

Overarching Question #1. Are pre-kindergarten students who participate in the Elementary Learning Center (ELC) Summer Program staying the same or making gains in reading and math achievement during the program?

Sub-Question 1a. Are pre-kindergarten students staying the same or making gains in reading from pre-test to post-test as measured on Achievement Improvement Monitoring System (AIMSweb®) assessment for early literacy for Letter Sound Fluency (LSF)?

Sub-Question 1b. Are pre-kindergarten students staying the same or making gains in math from pre-test to post-test as measured on the Math Screener for Number Identification (NI) assessment?

Overarching Question #2. Are kindergarten students who participate in the Elementary Learning Center (ELC) Summer Program staying the same or making gains in reading and math achievement during the program?

Sub-Question 2a. Are kindergarten students staying the same or making gains in reading from pre-test to post-test as measured on Achievement Improvement Monitoring System (AIMSweb®) assessment for early literacy for Phoneme Segmentation Fluency (PSF)?

Sub-Question 2b. Are kindergarten students staying the same or making gains in math from pre-test to post-test as measured on the Math Screener for Quantity Discrimination (QD) assessment?

Overarching Question #3. Are first grade students who participate in the Elementary Learning Center (ELC) Summer Program staying the same or making gains in reading and math achievement during the program?

Sub-Question 3a. Are first grade students staying the same or making gains in reading from pre-test to post-test as measured on Achievement Improvement Monitoring System (AIMSweb®) assessment for words read correctly or Reading Curriculum-Based Measure (R-CBM)?

Sub-Question 3b. Are first grade students staying the same or making gains in math from pre-test to post-test as measured on the Scholastic Math Inventory (SMI)?

Overarching Question #4. Are second grade students who participate in the Elementary Learning Center (ELC) Summer Program staying the same or making gains in reading and math achievement during the program?

Sub-Question 4a. Are second grade students staying the same or making gains in reading from pre-test to post-test as measured on Achievement Improvement Monitoring System (AIMSweb®) assessment for words read correctly or Reading Curriculum-Based Measure (R-CBM)?

Sub-Question 4b. Are second grade students staying the same or making gains in math from pre-test to post-test as measured on the Scholastic Math Inventory (SMI)?

Overarching Question #5. Do pre-kindergarten students who participate in the ELC start kindergarten at the same or different levels of achievement in math or reading as compared to pre-kindergarten students who were invited but chose not to attend?

Sub-Question 5a. Do participating students who are entering kindergarten start the school year at the same or different levels of reading achievement as compared to non-participating students, as measured on the AIMSweb® benchmark assessment for Letter Sound Fluency (LSF)?

Sub-Question 5b. Do participating students who are entering kindergarten start the school year at the same or different levels in mathematics as compared to non-participating students, as measured on the Math Screener for Number Identification (NI)?

Overarching Question #6. Do kindergarten students who participate in the ELC maintain, lose, or improve in math or reading from spring to fall as compared to kindergarten students who were invited but chose not to attend?

Sub-question 6a. Do kindergarten students who participate in the ELC maintain, lose, or improve in reading from spring to fall as compared to non-participating kindergarten students, as measured using the AIMSweb® assessment for early literacy for Phoneme Segmentation Fluency (PSF),?

Sub-question 6b. Do kindergarten students who participate in the ELC maintain, lose, or improve in mathematics from spring to fall as compared to non-participating kindergarten students, as measured on the Math Screener for Quantity Discrimination (QD)?

Overarching Question #7. Do first grade students who participate in the ELC maintain, lose, or improve in math or reading from spring to fall as compared to kindergarten students who were invited but chose not to attend?

Sub-question 7a. Do first grade students who participate in the ELC maintain, lose, or improve in reading from spring to fall as compared to non-participating first grade students, as measured on the Reading Curriculum-Based Measure (R-CBM)?

Sub-question 7b. Do first grade students who participate in the ELC start second grade at the same or different level of math achievement as compared to non-participating first grade students as measured on the Math Screener for Missing Number and the Scholastic Math Inventory® (SMI)?

Overarching Question #8. Do second grade students who participate in the ELC maintain, lose, or improve in math or reading from spring to fall as compared to second grade students who were invited but chose not to attend?

Sub-question 8a. Do second grade students who participate in the ELC maintain, lose, or improve in reading from spring to fall as compared to non-participating second grade students, as measured on the Reading Curriculum-Based Measure (R-CBM)?

Sub-question 8b. Do second grade students who participate in the ELC maintain, lose, or improve in mathematics from spring to fall as compared to non-participating second grade students, as measured on the Scholastic Math Inventory® (SMI)?

Overarching Question #9. Do students who participated in the ELC for at least two of the four summers show congruent or different achievement on the third grade Nebraska State Accountability assessments as compared to students who were invited but did not attend the summer program?

Sub-question 9a. Do students who participated in the ELC for at least two of the four summers show congruent or different achievement on the third grade Nebraska State Accountability-Reading (NeSA-R) assessment as compared to non-participating students?

Sub-question 9b. Do students who participated in the ELC for at least two of the four summers show congruent or different achievement on the third grade Nebraska State Accountability-Math (NeSA-M) assessment as compared to non-participating students?

Sub-question 9c. Do low socio-economic (SES) students who participated in the ELC for at least two of the four summers show congruent or different achievement on the third grade NeSA-R as compared to non-participating low SES students?

Sub-Question 9d. Do low socio-economic (SES) students who participated in the ELC for at least two of the four summers show congruent or different achievement on the third grade NeSA-M as compared to non-participating low SES students?

Overarching Question #10. Are families satisfied with the program and do families participate in and benefit from the Family Day activities and services?

Sub-Question 10a. Based on data from the parent survey, were parents satisfied with the summer program and do they believe their child will be more successful in the following school year as a result of the program?

Sub-Question 10a. Based on data from the parent survey, did families attend one or more of the three Family Days and do they feel that the events and activities were helpful to their family?

Definition of Terms

21st Century Learning Skills. 21st Century Skills are those skills needed by students to be successful in college, in a career, and in a global workforce. Academic skills in reading, math, science, and social studies should be infused with the 4 Cs, critical thinking, communication, collaboration, and creativity (Partnership for 21st Century Skills, http://www.p21.org/storage/documents/P21_Framework_Definitions.pdf).

Achievement Gap. An achievement gap is the learning differences that occur on assessment scores between children in poverty and more advantaged children (Alexander, Entwisle, & Olson, 2007b).

Adequate Yearly Progress. Adequate yearly progress (AYP) is the measure by which schools, districts, and states are held accountable for student performance under Title I of the No Child Left Behind Act of 2001 (NCLB).

AIMSweb®. AIMSweb® is the Achievement Improvement Monitoring System developed by Pearson, Inc. It is an assessment, data management, and reporting system

for students in kindergarten through grade 12. AIMSweb® provides short, nationally normed assessments for universal screening and progress monitoring in reading and math.

AIMSweb® Letter Sound Fluency. Letter Sound Fluency (LSF) is an assessment that measures a student's ability to associate a letter sound to written letters in a set amount of time.

AIMSweb® Phoneme Segmentation Fluency. This assessment measures a student's ability to say the phonemes in spoken words given a set amount of time.

AIMSweb® Reading-Curriculum Based Measurement-Reading. Reading-Curriculum Based Measurement (R-CBM) is an individually administered, standardized test of oral reading. It measures the number of words read correctly in a set amount of time.

Effect Size. An effect size provides a collective expression of the magnitude of research outcomes for many types of outcome variables. It is calculated subtracting the Mean of the control from the Mean of the treatment and then dividing by the standard deviation (Hattie, 2009).

Elementary Learning Center (ELC) Summer Program. Elementary Learning Center (ELC) Summer Program is the name given to a specific summer school program that is offered by a public school district in Nebraska. The ELC was developed for students entering kindergarten through third grade who attend six high-poverty schools in the district. This name was developed in order to differentiate this program from the regular elementary summer school program which is offered to all students in the district.

Learning Community of Douglas and Sarpy Counties. "The Learning Community is a Nebraska political subdivision dedicated to supporting and sharing locally proven programs and practices to improve student achievement" (Learning Community of Douglas and Sarpy Counties, 2015). The 11 school districts in Douglas and Sarpy counties are required to be part of the Learning Community. The Learning Community is overseen by a Coordinating Council and is divided into six Achievement Councils. The Coordinating Council is comprised of an appointed school board member from within each of the six Achievement Council areas and 12 elected representatives. The Learning Community assesses a common levy from all residents in the two counties. With these funds, the Learning Community supports various programs to combat the effects of poverty on student achievement.

Limited English Proficiency. Limited English Proficiency (LEP) refers to individuals whose primary language is not English and who may have a limited ability to read, speak, write, or understand English.

Math Screeners. The district hosting the Elementary Learning Center Summer Program has developed a set of universal math assessments to use as universal screeners or for progress monitoring with students in kindergarten and first grade.

Math Screener-Missing Number. This assessment measures a student's ability to provide missing numbers in a sequence of numbers.

Math Screener-Number Identification. This assessment measures a student's ability to name printed numerals in a set amount of time.

Math Screener-Quantity Discrimination. This assessment measures a student's ability to identify the greater of two numbers in a set amount of time.

Nebraska State Accountability. The Nebraska State Accountability (NeSA) assessments were designed and developed to provide academic feedback to parents, students, teachers and administrators. The tests measure a student's progress towards mastery of the state standards in reading, mathematics, and science (2013 NeSA-Reading, Mathematics, Science, 2013, p. 5)

Scholastic Math Inventory®. This is a web-based math assessment for grades 2-8 that provides data for universal screening, progress monitoring, and instructional decision-making.

Summer Learning Program. A Summer Learning Program intentionally builds skills, knowledge, attitudes, and behavior that promote academic achievement (Cooper et al., 1996)

Summer Slide. Summer slide refers to learning losses that students experience over the summer break (Borman & Dowling, 2006, p. 25)

Title I. In this study Title I refers to schools that meet the criteria of the Elementary and Secondary Education Act of 1965 for additional resources due to high levels of poverty and academic need.

Assumptions

In this study several assumptions exist. First, there is an assumption that the AIMSweb®assessments, Scholastic Math Inventory® (SMI), Nebraska State Accountability (NeSA) assessments, and other benchmark assessments are valid and reliable assessments. It is further assumed that these assessments provide the data necessary to answer the evaluation questions. Second, it is assumed that the students were engaged in the assessments and participated to the best of their ability. Third, it is

assumed that the teachers and school employees giving the assessments were following the administration parameters provided in their training. Finally, this study also assumes that the teachers were diligent in their use of available data, high-leverage instructional strategies and available materials to provide targeted instruction for students participating in the program.

Limitations

Limitations of the evaluation are varied. First, because the program is relatively new and students have only had the opportunity to participate for a few years, it may not be possible to predict long-term effects. Second, the structure and components of the program may impact results. For example, research shows that 5-8 week summer programs are optimal in combating summer learning loss and the Elementary Learning Center (ELC) is only offered for three weeks. Another limitation is that some students may attend other summer programs which would also impact results. In addition, student invitations are given based on data collected at the winter benchmark. A lot of growth can occur between December and May and it may be possible that some invited students do not have an academic need. An additional limitation is that finding a comparison group is difficult. Although some of the students who are invited choose not to attend, they may not be the best comparison group. Some of these students may have attended other high-quality programs, or parents may have decided not to have their students attend because the level of need was not as severe and they did not feel summer school was warranted. The last limitation is that the researcher is the administrator for the program being evaluated.

Delimitations

In order to accurately evaluate the effectiveness of the Elementary Learning Center Summer Program, the nature and scope of the evaluation fall within the parameters and boundaries established by the school district.

The delimitations of this evaluation study include the following: a) exclusive focus on students entering kindergarten to third grade who attend six Title 1 elementary schools and English Language Learners from two additional elementary schools, b) established timing of the summer program, c) predetermined timing of spring and fall assessments, and d) the implementation of a non-scripted summer program coordinated at the district level.

Significance of the Study

Although this study is specific to a summer program being implemented by one Midwestern district, there are several reasons the findings may have impact. First, this study will allow the sponsoring district to make decisions regarding the continuation of or improvements to the program. Second, the results of the study will contribute to the existing body of literature on the effects of summer programing and student achievement for students with academic needs from low socio-economic schools. In addition, other school districts will be able to access the findings of this study in order to inform and guide decisions as they implement their own summer learning programs. Finally, the longitudinal data collected in this study will allow school districts and policy makers to evaluate the impact on student achievement on state assessments for those students who participated for at least two summers.

Outline of the Study

Chapter 1 presented a brief introduction to summer learning loss and the impact of summer learning programs. Descriptive information pertaining to the study was also provided, along with evaluation questions and data collection methods. Also included in this chapter was the purpose of the study, significance, limitations and definitions of pertinent terms.

The second chapter provided a review of literature related to the topics of school calendar, summer learning loss, the effect of summer programs on achievement, and the characteristics of effective programs. In addition, this chapter explored the cumulative effect of summer learning loss and the impact on the achievement gap between middle to upper class students and those students in poverty. State education budgets cuts and the funding implications for summer programs were also explored.

Chapter 3 outlines the methods that were used to evaluate the impact of the Elementary Learning Center Summer Program. This chapter provided a description of the summer program, identified eligible students, reiterated the evaluation questions, defined the evaluation tools, and defined how the collected data was analyzed.

The fourth chapter provides an analysis and interpretation of the data collected. The findings are described in relation to the evaluation questions and are presented in tables.

In chapter 5 a clear and concise summary is presented. Implications of the study are discussed and recommendations for further study are explored.

CHAPTER 2

Review of Literature

Student learning is the main component in the mission of every school in the country. The gaps in achievement that have come to light since the enactment of the No Child Left Behind Act (No Child Left Behind Act of 2001) have forced educators to research causes for the differences in learning and to explore solutions. "Summer slide" or learning losses over the summer months has been found to be a contributing factor in the achievement gap between students in poverty and students from higher socio-economic families (Alexander, Entwisle, & Olson, 2001; Cooper, et al., 1996). Students in poverty were found to fall approximately two months behind in reading as compared to middle-class students.

What's more, summer learning losses have been found to accumulate over the elementary years (Entwisle, 1997). The achievement of students in poverty fell further and further behind the achievement of students from higher socio-economic families. This led the researchers to conclude that summer vacation is the primary cause of the learning gap between middle-class students and those in poverty (Entwisle, 1997).

Possible solutions to learning losses over summer vacation include a year-round calendar, additional hours or days to the existing calendar, and summer learning programs (Cooper, 2003). Extending the school year or adding additional hours to the day have not become popular options. Some districts are offering alternative or year-round calendars, but summer learning programs appear to have grown the most over the last 45 years. In 1978 only 25% of schools surveyed offered a summer program (Heyns,

1978). By 1999, 100% of the schools researched offered some type of summer program (Cooper et al., 2000).

Currently, with school funding at lower levels, every spending decision and the effect on student achievement need to be scrutinized. How are summer programs impacting student achievement? Common sense tells us that just offering summer programs will not increase student achievement and reduce the achievement gap. However, research has found that summer programs that are voluntary and are developed specifically to offset the summer achievement slide can have a positive impact on student learning (Borman et al., 2005). Other components that lead to a successful program include experienced, well-trained staff, engagement of students and families, small class sizes, and evaluating the program for effectiveness (Fairchild & Boulay, 2002; McCombs et al., 2012; Terzian, Moore, & Hamilton, 2009).

Although the number of school districts offering summer learning programs has grown, financing quality programs is a struggle. In fiscal year 2013-2014 at least thirty-five states provided less per-pupil funding than before the 2007 recession (Leachman & Mai, 2014). Fourteen of those states have cut per-student funding by more than 10%. The impact of this reduction in funding is widespread. Schools have reduced or eliminated hiring increases, class sizes are growing and programs such as summer school are being cut. Los Angeles and Philadelphia school districts have both reduced funding for summer programs by significant amounts (Gabriel, 2013; Kim, 2013).

As recommended (Fairchild & Boulay, 2002), the purpose of this study is to evaluate the effectiveness of a summer learning program on reducing summer learning loss and increasing student achievement. A review of the literature identifies and

describes the premises upon which this study is formulated. This review of literature is organized in six distinct sections: (a) History of the School Calendar and Summer Vacation, (b) Summer Learning Loss, (c) Cumulative Effect of Summer Learning Loss, (d) Summer School and Student Achievement, (e) Characteristics of Effective Summer Programs, and, (f) Cost and Funding for Summer Learning.

History of the School Calendar and Summer Vacation

The popularity of holding public school during the summer months has increased and decreased a couple of times since around 1800 (Gold, 2002). Gold found that school during the summer months was a regular part of the public school calendar in the early to mid-nineteenth century. Toward the middle to end of that century, summer school disappeared from public school as calendars were regularized and based on agrarian needs. During the first part of the twentieth century, summer months returned to the school calendar as vacation schools were developed, designed for kids in poverty who were running the streets in urban areas.

The Depression and early stages of World War II caused a decline in public school summer offerings. However, the war prompted the federal government to recommend summer school as a way to address national interests. Recreational programs were created for children whose mothers were working in factories, while other programs offered courses in business, trade, and clerical skills for girls and young boys who would be replacing men in the work force (Gold, 2002).

By the 1950s the federal government's role in summer education grew as questions of equity and educational quality emerged. Throughout the next four decades the War on Poverty prompted federal initiatives which included Head Start, Title I, and

summer dropout prevention programs, which all contained a summer component. By the end of the twentieth century, school held during the summer months had evolved to remedial programs to prevent social promotion and those that provided enrichment (Gold, 2002).

At the beginning of the twenty-first century, what does summer education look like? No Child Left Behind has brought to light the achievement gap between socio-economic and racial groups that has raised many alarms. Learning that is lost over summer vacation has been found to contribute to achievement gaps (Alexander et al., 2007a; Borman, et al., 2005; Cooper et al., 1996). Three approaches to reducing the achievement gap due to learning lost over the summer include extending the school year, summer school and alternative school calendars (Cooper et al., 2003).

Alternative school calendars or year-round school grew in popularity during the late 1980s, but the rate of growth has declined. In Nebraska and other Mid-West states, year-round school has not gained much traction. In 2006-07, Nebraska had only three districts and four schools that were offering year-round education. This only impacted 650 students (National Association for Year-Round Education).

Extending the school year as a strategy to address student achievement has been considered by many states and school districts. In 1983 *A Nation at Risk* made the point that inadequate time spent on learning was a major cause of lower student achievement in the United States. The recommendation was to increase the school year to 200 or 220 days. However, the average number of school days per year has not changed very much since 1950 (Snyder & Dillow, 2012). In 1949-50 the average number of school days per year in the United States was 177.9. In 2011-12, the average number of school days was

179. An increase of one day in sixty years is probably not making a big impact on student achievement. In addition, the average number of hours per day attending school in the United States has only increased slightly (Snyder & Dillow, 2012). In 2007-2008 the average number of hours per day in school was 6.6 and in 2011-2012 it was 6.7.

The objections to extending the school year in order to increase student achievement have been the cost and effectiveness (Gold, 2002). Every day added to the school calendar increases the teacher contract time and therefore the district personnel budget. The effectiveness of adding more time and doing the same types of things is an even bigger concern. In 1994 the National Education Commission on Time and Learning published *Prisoners of Time*, which also called for more time in school. However, the report also called for schools to make better use of that time.

The remaining option to reduce the achievement gap due to summer vacation is summer school or other summer learning opportunities. These learning opportunities may be provided by school districts, individual schools, community organizations, afterschool and summer learning organizations or families (Dechenes & Malone, 2011). The program being evaluated in this program evaluation research is a summer learning program offered by a school district.

Summer Learning Loss

Most American teachers will attest to the fact that students regress over the summer vacation. It is not uncommon for teachers to feel like they need to spend two to six weeks reviewing skills and concepts that were taught the previous school year. Although a few early researchers found no evidence of summer learning loss (Carter, 1984; Klibanoff & Haggart, 1981), other researchers have concluded that students do

"slide" backwards over the summer vacation (Cooper et al., 1996; Heyns, 1978). In the best case scenario, students remain at the same level of achievement after summer vacation. In the worst case, students will experience approximately one month of learning loss. For students in general, the content areas most affected by the long summer break appear to be math computation and spelling (Cooper et al., 1996).

For some groups of students, summer vacation is even more detrimental. Students living in poverty (Cooper et al., 1996; Entwisle & Alexander, 1992; Heyns, 1978), and those with disabilities (Allinder, 1994) regress the most with prolonged time away from school. Students in poverty do not just regress in mathematical computation and spelling, but they lose ground in reading as well (Cooper et al., 1996).

A pervasive assumption is that attending school, at any time, has a positive impact on student achievement. Landmark research conducted in the mid-1970s found that "the effects of school on the achievement process are substantial (Heyns, 1978). This study of nearly 3,000 sixth and seventh grade students in Atlanta, Georgia also found that in school or out of school, students from more advantaged families learned at a faster rate than those from disadvantaged families. Summer vacation widens the achievement gap between students in poverty and that of more advantaged students. In addition, when school is in session, students from disadvantaged families experienced greater relative rates of achievement than they do during the summer months (Heyns, 1978).

At the same time that Heyns was concluding her research, a massive research project called the Sustaining Effects Study (SES) was underway in the United States (Carter, 1984). This study was directed at compensatory education (CE) that had been funded under Title I of the Elementary and Secondary Education Act. The SES collected

data on nearly 120,000 students in over 300 elementary schools across the country. The data was collected over three years, 1976-1979.

One portion of the SES looked at student achievement over the summer. The report provided to the Department of Education reflected the following findings on summer learning: (a) students had large gains in reading, and both gains and losses in mathematics, (b) Compensatory Education experienced slight gains in reading as compared to regular students, but not in math, and, (c) high achieving students tend to lose over the summer and lower achieving students tend to gain over the summer. Several other researchers used data from the SES for their studies and their findings were mixed. Ginsburg, Baker, and Sweet (1981) used the data in order to try and replicate the findings of Heyns. Their findings corresponded with Heyns in that students did have greater achievement gains during the school year than in the summer. However, they did not find that a student's family income had more impact on learning over the summer than learning during the school year (Ginsburg et al., 1981; Carter, 1984).

Subsequent research using the SES data also found that achievement losses over the summer were not related to the students' initial achievement level (Klibanoff & Haggart, 1981). Summer learning loss was greater for higher achieving students. In addition, these researchers found that low-income students and black students tended to have smaller gains in reading over the summer than other students. However, low-income and black students tended to have larger gains in math. For both subjects the differences were not designated as large.

Another longitudinal study conducted with 790 first grade Baltimore students was called the Beginning School Study (BSS). This study examined summer loss in

mathematics across race, poverty, and school composition for the first two years of school (Entwisle & Alexander, 1992). The major result of the study supports other research findings that students in poverty have greater losses in learning over the summer (Cooper et al., 1996; Downey, von Hippel, & Broh, 2004; Ginsburg et al., 1981; Heyns, 1978). Entwisle and Alexander found that every year students in poverty had a loss, yet those students not in poverty had gains. Race and family composition appeared to have no impact on summer gains or losses, when poverty was controlled.

Despite the conflicting research results, the knowledge that students learn at similar rates when school is in session leads educators to examine other factors, outside of school, that may contribute to the achievement gap. Many researchers agree that non-school factors, including the summer months, are key (Downey et al., 2004; Entwisle & Alexander, 1992). Cooper et al., conducted a meta-analysis of existing research, examining the effects of summer vacation on learning (1996). Their findings provide pivotal information that has been the foundation for many school district decisions, as well as a prompt for further research.

The authors looked at 39 studies to examine the overall effects of summer vacation on learning. They reviewed the impact on different subjects such as reading and mathematics, as well as the impact on students with different personal and family characteristics (Cooper et al., 1996). In evaluating the studies published prior to 1975, the authors found that summer vacation had a detrimental effect on math computation and spelling skills. In addition, gender and level of intelligence had no impact on achievement. The early research did include one test based on students' socio-economic status. That study revealed that students with higher socio-economic status make gains in

reading over the summer whereas students in poverty experienced losses in reading achievement (Cooper et al., 1996).

The second part of the meta-analysis looked at 14 research reports after 1975 that included data from 13 studies on the impact of summer vacation. Overall, the meta-analysis revealed that the average student's fall score was one tenth of a standard deviation below where it had been in the spring (Cooper et al., 1996). This corresponds to a loss of about one month of learning.

In looking at the effect of summer vacation on the different subject areas, the authors found varied results. When they included the Sustained Effects Study (SES), an extremely large study with controversial analysis of results, the authors found greater summer gain in the subject areas related to reading and language. With the Sustained Effects Study excluded, students showed a significant loss in Total Math and Total Reading (Cooper et al., 1996). Summer vacation had a significant negative effect on students' achievement in math computation, Total Math with the Sustained Effects Study excluded, reading comprehension, Total Reading with the Sustained Effects Study included, and spelling (Cooper et al., 1996). Summer vacation had a significant positive effect on math application, vocabulary, and total reading with the Sustained Effects Study included.

The authors then looked at other factors that may influence the effect of summer vacation on learning. When looking at the impact of socio-economic status, the authors found that the studies using absolute measures of change reported that middle-income students showed greater gains in reading achievement over the summer than low- income students (Cooper et al., 1996). However, when using relative measures, reading

achievement for students from lower socio-economic families declined over the summer and their peers from middle class families showed a gain. The loss experienced by the students in poverty was significant, while the gain found for middle-income students was just short of significant.

When examining reading achievement more closely, Cooper and colleagues found that middle-income and low-income students both experienced losses in reading comprehension. The difference in grade-level equivalent scores reveals that low-income students lost approximately 0.7 months more learning than middle-income students (Cooper et al., 1996). For reading recognition, low-income students experienced a significant loss over the summer while middle-income students experienced a significant gain. The differences in grade-level equivalencies reveals that middle income students gained 2.3 months in reading recognition over the summer while students in poverty lost approximately 1.5 months (Cooper et al., 1996).

The meta-analysis showed no significant difference in the effect of summer vacation on mathematical achievement for middle-and lower-socio-economic students. Both groups demonstrated losses in math skills over the summer (Cooper et al., 1996). These meta-analysis findings for mathematics differ from those of Entwisle and Alexander (1992) who found that although students in poverty had losses over the summer, those middle-class students had gains.

The authors also looked at the impact of summer vacation on relative reading achievement for different grade levels. Their findings indicate that the impact moves from positive to negative and becomes more unfavorable as the grade level goes up (Cooper et al., 1996). For example, the authors found that the effect of summer vacation

on reading achievement for first grade students was positive, with a grade level gain of approximately 0.6 months. The summer effect on reading achievement for fourth grade students was found to be negative, with a grade level loss of 3.4 months (Cooper et al., 1996).

The meta-analysis indicates that the impact of summer vacation on all students is at best, no growth. At worst, students may lose one to three months of grade-level equivalent skills (Cooper et al., 1996). The study also found that the impact of summer vacation is greater on mathematics skills than on reading and language skills. Cooper and the co-authors postulate that perhaps the homes and communities of students provide more opportunities to practice reading than mathematics. Family income level was the factor with the greatest effect on student learning over the summer vacation (Cooper et al., 1996). Although all students lost math skills, middle-income students demonstrated gains in reading and language achievement over the summer and low-income students had a significant loss (Cooper et al., 1996; Cooper, 2003). In this meta-analysis, summer vacation was found to create a three month gap in reading skills between middle- and low-income students (Cooper et al., 1996).

Cooper and his colleagues found that the impact of summer vacation is greater for students from lower socio-economic families and this supports the findings of other major research (Entwisle & Alexander, 1992; Heyns, 1978). However, Entwisle and Alexander found summer loss to be more significant in math, while Cooper et al. found the impact differential to be more significant in reading (Cooper, 2003). It is plausible to hypothesize that neither low socio-economic nor higher socio-economic families have access to math materials while more affluent families may have more reading materials.

A 2000 study of student achievement over the summer found some similarities and differences with the results of Cooper and his colleagues (Reece, Myers, Nofsinger, & Brown, 2000). The study looked at summer achievement for 749 students in southern Kentucky. The researchers found that students do experience academic loss over the summer, but unlike Cooper et al., they found that students made gains in reading and had more significant loss in mathematics. In addition, unlike Cooper, the study found that greater losses were incurred in the lower grades instead of the middle and upper elementary grades.

Equality in educational opportunity has become an important topic in education. If we know that students in poverty experience academic losses over the summer, while students from middle class families stay the same or make gains, do schools help or create more inequality? Downey et al., (2004) asked this question in their research. In general, they found that disadvantaged students and middle-class students learn at more similar rates when they are in school than when they are out for the summer. They conclude that to combat inequality, it is important to improve the out-of-school time for disadvantaged students (Downey et al., 2004). Summer school or other summer learning programs are just a couple of possible solutions.

The research suggests that summer vacation does impact student achievement (Cooper et al., 1996; Entwisle & Alexander, 1992; Ginsburg et al., 1981; Heyns , 1978; Reece et al., 2000). In general, most students will experience a loss is math skills over the summer, while students in poverty may also experience a loss of up to three months in reading (Cooper et al., 1996). As the faucet theory suggests, when the faucet of school resources is turned on, all students learn at equal rates (Entwisle et al., 2001). However,

when the faucet is turned off, as it often is over the summer months, families in poverty cannot make up for the missing resources and so student learning stops or even declines. Middle-class families are more likely to compensate for the halted stream of school resources and student learning will continue, if even at slower pace (Entwisle et al., 2001).

Cumulative Effect of Summer Learning Loss

In 2007, data from the Beginning School Study (BSS) was once again analyzed, but the purpose of this study was to look at the lasting effects of summer learning differences by family socio-economic status (Alexander et al., 2007a). The BSS began in the fall of 1982 with 790 students preparing to enter first grade. These students were monitored personally and academically each year, with data for this study collected through 1998, when the students were twenty-two. The students took the California Achievement Test (CAT) in the fall (October) and in the spring (May) each year. During this time there was no mandatory summer school in Baltimore and it was very rare for students to attend summer school voluntarily.

When looking specifically at Reading Comprehension from the CAT, the researchers found that during the school years of grades 1-5 there was only a very small difference in the gains made by disadvantaged students as compared to students from high socio-economic families (Alexander et al., 2007). The cumulative school-year gain for disadvantaged students was 191.3 points and the gain for the high socio-economic families was 186.1 points. In contrast, over the summer months the cumulative gains in Reading Comprehension points was -1.9 for disadvantaged students and 46.58 point for high socio-economic students (Alexander et al., 2007a).

In the fall of 1982 when these students entered first grade, the difference in Reading Comprehension points on the CAT for disadvantaged students and high socio-economic students was 26.48. By the end of ninth grade the gap in Reading Comprehension points was 73.16. This is significant at $p \geq .05$. Approximately two thirds of this achievement difference, 46.5 points, can be accounted for in the gains made over the summer by the students from high socio-economic families (Alexander et al., 2007). Not only do students in poverty lose ground over the summer, but the losses accumulate as the students get older. Over time, the achievement gap widens.

An additional finding in this study is notable. The first two summers revealed the largest differences in achievement gains between disadvantaged students and students from high socio-economic families. The researchers conclude that the first two summers may then be the most vital in terms of retaining basic reading skills. Corrective interventions and summer programming would be most effective during these years (Alexander et al., 2007a).

Outside of the Beginning School Study, research on the cumulative effects of summer learning loss is not readily available. This may be due to the length and magnitude needed for a study to analyze the impact over five or more years of school and summer vacation. However, numerous studies have found that learning is lost over the summer vacation (Cooper et al., 1996; Ginsburg et al., 1981; Heyns, 1978) and that students in poverty experience greater losses in both reading and math that do students from higher socio-economic families (Alexander et al., 2007; Cooper et al., 1996; Entwisle & Alexander, 1992; Ginsburg et al., 1981; Heyns , 1978). In addition, several studies have found that during the school year students in poverty learn at nearly equal or

equal rates as higher socio-economic students (Alexander et al., 2007a; Downey et al., 2004). It could then be reasoned that if students in poverty lose ground every summer, yet learn at equal rates during the school year, summer losses would accumulate each year and thus be a contributing factor in the achievement gap.

Summer School and Student Achievement

Early studies that evaluated the effectiveness of summer school generally found them to have little impact on increasing student achievement (Heyns, 1986; Heyns, 1987). As the examination of the history of summer learning revealed, after 1950 the federal government was supporting programs designed to address equity and educational opportunities through programs such as Head Start and Title I (Gold, 2002). The Sustained Effects Study (SES), a large study funded by the Department of Education, was one such evaluation. In addition to finding that students do lose ground over the summer, they also reported that for those students who attended summer school, no gains were found over those students who did not attend (Carter, 1984). In his summary of the report, Carter went so far as to conclude that there is "relatively little instruction in reading or math during summer school" (1984, p. 8) and that special summer programs are not justified.

However, at that time, experimental research on the effects of summer programs on learning was scarce (Ascher, 1988; Heyns, 1986; Heyns, 1987). In 2000 a meta-analysis and narrative review of the effects of summer school was published (Cooper et al., 2000*)*. Overall, the study looked at 93 research reports which included the evaluation of 89 separate summer school programs. Due to the lack of experimental studies, Cooper et al. included dissertations and school district reports or evaluations in the study. Thirty-

nine of the reports included information on the positive or negative effects of the summer program for at least one academic outcome area. These studies were included in a narrative and vote-count synthesis comparison as not enough information was available to calculate effect size. The remaining 54 reports had enough information to calculate effect sizes and were included in the meta-analytic and narrative portion of the study.

Of the thirty-nine studies with limited data, 30 reported on remedial programs (Cooper et al., 2000). These 30 studies had 121 independent samples and 95 of the samples produced results that demonstrated the positive effects of summer school on all comparisons. Eight more samples had results that were mostly positive and six samples demonstrated neither predominately positive nor predominately negative results.

Using a vote-count estimate of effect size, the researchers were able to calculate the magnitude of the effect of summer school. Using the mean sample size of the comparisons that had all positive or predominately positive results, the effect size was d =.10. Because there were three studies that had really large sample sizes, the effect size was also calculated using the median sample size. When the median sample size was used, the effect size was found to be d = 0.44. When calculating the effect size for the studies that had all positive results, the effect size using the mean sample size was d = 0.12. The effect size was d = 0.49 when calculated using the median sample size. Therefore, using this method to calculate the estimated effect of remedial summer programs, it could be said that the participants scored between one tenth and one half of a standard deviation higher on the post-outcome measure than they did on the pre-test measures (Cooper, et al., 2000).

The second portion of this meta-analysis looked at the 54 reports that provided sufficient data to calculate *d*-indexes. Forty-one studies focused on remedial summer programs, creating 99 independent samples. Eighty-six of these samples were found to have positive *d*-values. Sixty-two percent of the sample effect sizes fell between *d*=0.1 and *d* = 0.7. Ten percent of the samples were between *d* = 0.8 and *d* = 2.7 (Cooper, et al. 2000).

Although this landmark analysis of the effects of summer programs on student achievement has provided a lot of meaningful data and information on summer school effects, program characteristics and methodology, the foremost conclusion is that remedial summer school programs "have a positive impact on the knowledge and skills of participants" (Cooper et al., 2000, p.v). Students who participate in a summer program that is focused on removing deficiencies in learning can be expected to score approximately one fifth of standard deviation higher on the outcome measure than the control group. The researchers support this conclusion based on several factors. First, the effect sizes for the vote count estimates were between *d* = 0.10 and *d* = 0.49. In addition, the overall effect size based on median sample size was *d* = 0.19. Finally, looking across all samples, the weighted average *d*-value was *d* = 0.26.

Based on the work of John Hattie (2009), the hinge-point for seeing real change in education is an effect size of 0.40. Any effect size above 0.40 is in the zone of desired effects and the educational component or activity with those effects is worth having (Hattie, 2009). Although the overall weighted average effect size in the study above was 0.26, summer school cannot be dismissed as not having a positive impact. Some components had effect sizes higher than 0.40. In addition, any effect size falling between

0.15 and 0.40 is similar to what a teacher can accomplish in one year of school (Hattie, 2009).

After the meta-analysis by Cooper and his colleagues was published, experimental research on the effects of summer school programs has become more available. A study published in 2005 looked at spring-to-fall reading achievement data of students randomly assigned to the Teach Baltimore Summer Academy (Borman et al., 2005). The goal of this summer program for students leaving kindergarten and first grade was to prevent summer learning loss in reading skills. The total sample was 686 students from high poverty schools in Baltimore. There were 248 students assigned to the control group and 438 students assigned to the treatment group.

Overall, the average student lost 10 scale points from spring to fall on the reading achievement test (Borman et al., 2005). This is a loss of approximately 0.10 standard deviation units, which corresponds closely to the findings of Cooper and his co-authors (1996). Although the study looked at the effects of racial/ethnic background, socio-economic status and other family characteristics, the only factor that had a statistically significant impact on reading achievement over the summer was grade level. The students leaving first and second grade made greater gains than those leaving kindergarten (Borman et al., 2005).

In addition, when looking at all students, treatment and control, and their participation in the Teach Baltimore Program or another summer program with academic content, only the number of weeks in attendance at Teach Baltimore had a statistically significant positive impact on reading scores (Borman et al., 2005). Students gained nearly five scale points for each additional week that they attended Teach Baltimore. The

effect size associated with attending the full six weeks is 0.27. Therefore, students who attended the full six weeks of the program went back to school with reading achievement scores more than one-fourth of a standard deviation higher than those students who did not attend Teach Baltimore.

As mentioned above, summer learning loss accumulates and is suggested to be a major factor in the learning achievement gap (Alexander et al., 2007). Can attending a summer program for multiple years recoup or offset these losses? Borman and Dowling (2006) continued their research using the Teach Baltimore program to evaluate the effects of participating for multiple summers. They found that students attending the Teach Baltimore program for at least two of the three summers, at average attendance rates, came back to school in the fall the third year with achievement scores approximately one half of a standard deviation higher than their peers in the control group. This treatment effect is equal to 41% of one grade level in total reading, one half of a grade level in vocabulary, and 40% of one grade level in comprehension (Borman & Dowling, 2006).

Other research has also found summer learning programs to have positive effects on student achievement (Chaplin & Capizzano, 2006; Borman, Goetz, & Dowling, 2009; Zvoch, 2011; Eidahl, 2012; Bakle, 2010). In 2006 an evaluation of the impact of the Building Educated Leaders for Life (BELL) program used random assignments to even the playing field and to ensure that the findings can be attributed to the program and not student characteristics (Chaplin & Capizzano, 2006). BELL is a summer program for economically disadvantaged students that was created to focus on academic skills, parental involvement, academic self-perceptions, and social behaviors. More than 1000 students who applied to the BELL program in New York or Boston were randomly

assigned to the treatment group or the comparison group. The baseline characteristics of both groups were consistent. The average family income was less than $30,000, only 40% of students lived with their fathers and 90% were minority students. In contrast, it was found that 65% of the students in the treatment group participated in the BELL program as compared to 6% of the control group (Chaplin & Capizzano, 2006).

The results of this evaluation found that the treatment group experienced approximately one more month of growth in reading skills than those students in the control group. When controlling for members of the treatment group who did not participate in the BELL program and members of the control group who did participate, the researchers found that participating in the BELL summer program improved test scores by approximately two months (Chaplin & Capizzano, 2006). This corresponds to findings by Borman et al., (2005) when they looked at the reading achievement of Teach Baltimore participants and attendance.

This study also found that participation in the BELL program had positive impacts on summer learning activities and parent involvement in reading. Parents in the control group reported their students participated in approximately 12 hours of academic activities per week as compared to students participating in the BELL program, who spent 18.14 hours per week in academic activities. The effect size of this difference is 0.41. In addition, BELL students read about 3.9 more books than the students in the control group (Chaplin & Capizzano, 2006). The higher number of books read and growth in reading achievement correlate with the findings of Heyns (1978).

A second study that demonstrates the positive effects of a summer learning program was conducted in 2009 and looked at a six week summer enrichment program

for high-poverty students in Baltimore (Borman et al., 2009). This program focused on literacy and fine arts. The sample included 128 students from four schools, 93 in the treatment group and 35 in the control group. Pre- and post-test data were collected using Dynamic Indicators of Basic Early Literacy Skills (DIBELS), which includes (letter naming fluency and phoneme segmentation fluency), word lists, Developmental Reading Assessment (DRA) and dictation. Although pre-test results were statistically the same for the control group and the treatment group, post-test results demonstrate that students in the treatment group scored significantly higher on the Word List and DRA. When the researchers adjusted for the intent to participate (those in the treatment group who intended to participate, but did not attend) the effect sizes were larger, d=0.36 for Word List A and d=0.51 for DRA. An effect size of 0.51 is in the zone of desired effects (Hattie, 2009) and reflects a positive correlation between increased achievement and participation in this summer program.

Another study looked at a school-based summer program conducted in the Pacific Northwest (Zvoch, 2011; Zvoch & Stevens, 2013). As with the BELL study conducted by Chaplin and Capizzano (2006), the researchers used random assignment to reduce bias and examine student achievement. The sample of study participants was relatively small, with 46 kindergarten students (22 in the control group and 24 in the treatment group) and 47 first grade students (24 in the control group and 23 in the treatment group). The students participated in a five week program that offered academic instruction for 3.5 hours per day.

Using the DIBELS nonsense word fluency subtest that is administered in May of the kindergarten year and September of the first grade year, the researchers found that

students in the control group lost approximately 4.68 words-per-minute in nonsense word fluency over the summer (Zvoch & Stevens, 2013). This loss was not found to be statistically significant. Students in the treatment group gained approximately 4.17 words-per-minute. Using Hedges *g*, the effect size between these groups was $g = 0.60$. The Test of Oral Fluency (TORF) was the measure for the first grade students and scores from May of first grade were compared to scores from September of second grade. In this study the control students lost 4.67 words-per-minute while the treatment group gained an average of 4.5 words-per-minute in oral reading fluency. Again, this change is past the achievement hinge-point, with an effect size of $g = 0.78$ (Zvoch & Stevens, 2013).

Like Borman and Dowling (2006), this study found that when they controlled for students in the treatment group who did not attend the program and then compared with the control group, the difference was even more significant (Zvoch & Stevens, 2013). In the kindergarten sample, the difference between students in the treatment group who participated and the control group was 16.7 nonsense-words-per minute and had a related effect size of $g = 1.17$. Similarly, the difference between first grade students in the treatment group who participated and the control group was 12.14 words-per-minute on the TORF. The related effect size was $g = 1.03$ (Zvoch & Stevens, 2013). Logically, just being assigned to a summer program is not enough to positively affect student achievement.

The remaining two studies that revealed a positive impact of summer learning programs on student achievement were conducted as part of doctoral studies. Similarly to the program being evaluated in this study, these programs were held by school districts

located in the middle states, Indiana and Iowa (Bakle, 2010; Eidahl, 2012). The purpose of the first study was to understand the effects of an elementary summer remediation program on student achievement (Bakle, 2010). Using spring and fall data from the Northwest Evaluation Association (NWEA) Measures of Academic Progress (MAP) with second through fifth grade students, results were compared for convenience samples of summer school participants and non-summer school participants. This program was a voluntary, non-scripted program that included 60 hours of instruction. In grades 2 through 4 the study revealed a significant interaction between summer school participation and language usage scores with effect sizes of $d = 0.11$, $d = 0.016$, and $d = 0.018$ respectively.

Second grade students also demonstrated a significant interaction between summer school participation and math achievement. While third grade had no interactions for math, fourth grade students not receiving free lunch scored significantly higher on the post-test for mathematics than those who did receive free lunch, including students who did not participate in summer school (Bakle, 2010).

Both second and third grade students demonstrated significant interactions for language usage between summer school participation and low socio-economic status (Bakle, 2010). Low socio-economic students in second and third grade who participated in this summer program made significant gains on the language usage post-test as compared to non-participating low socio-economic students in the same grades.

For third and fourth grade students, a major finding was that students who participated in the summer program were found to score significantly lower in reading than the students who did not participate (Bakle, 2010). The authors recommend

evaluating the summer reading programming for third and fourth grade students. This result may also reflect the findings of other research that suggests that summer programs have a larger impact for students in the early elementary grades (Cooper et al., 1996; Cooper et al., 2000).

Gender, ethnicity and socio-economic status were found to have statistically significant interactions for language usage and fifth grade students (Bakle, 2010). Girls scored higher than the boys, white students scored higher than all other ethnicities and higher socio-economic students scored higher than low socio-economic students. Although the effect sizes were small, d=0.014, 0.013, and 0.014 respectively, the researchers suggest that these factors need to be considered when designing summer school language usage curriculum for fifth grade students (Bakle, 2010).

The final research to be examined is a descriptive study of a summer program in a small town in Iowa (Eidahl, 2012). This program evaluation is similar to the one being conducted in this research in that participating students attend schools that have been designated as Title I, the summer program ran for 15 days, with three hours of instruction each day, and the programs take place at approximately the same time during the summer.

The purpose of this study was to assess the effectiveness of the district's summer program in preventing summer learning loss in reading. Using the Basic Reading Inventory (BRI), the researcher looked to see if participating students maintained or increased their scores. A convenience sample was used, identifying 240 first grade students who were eligible to participate based on their spring BRI scores. In the end

there were 124 eligible participating students and 156 eligible students who did not participate (Eidahl, 2012).

The BRI measures reading fluency, accuracy, and comprehension. In this study the percentage of participating students who maintained or increased in each of these categories ranged from 70%-77%. The percentage of eligible students who did not participate and maintained or increased ranged from 46-67% (Eidahl, 2012). When looking at the percentage of students who increased or maintained BRI scores based on gender, ethnicity and socio-economic status, a few findings are noteworthy. First, gender does not appear to have had a major impact on summer reading scores. The percentage of male and female students that maintained or increased their scores ranged from 69%-77%. Within each pair there was no gap of more than four percentage points.

Second, non-Caucasian students demonstrated more growth in accuracy and comprehension than Caucasian students. On the accuracy component, 76% of non-Caucasian students increased their score as compared to 60% of Caucasian students. For comprehension, 84% of non-Caucasian students maintained or increased their score, whereas only 74% of Caucasian students maintained or increased their scores (Eidahl, 2012).

Finally, low socio-economic students increased reading scores at higher percentages than their higher socio-economic counterparts. For accuracy and comprehension 72% of low socio-economic increased their scores from spring to fall. Just 54% and 64% of high socio-economic students increased their scores on accuracy and comprehension, respectively (Eidahl, 2012). Although this researcher does not report on statistical significance, it should be noted that this finding contradicts other

researchers who have found that higher socio-economic students out-perform low socio-economic students over the summer (Cooper et al., 2000).

One study was found that reported little to no positive effects from summer learning activities (Burkam, Ready, Lee, & LoGerfo, 2004). This research used data from the Early Childhood Longitudinal Study-Kindergarten Cohort (ECLS-K), and looked at children completing kindergarten, their socio-economic status and the effect of summer activities, including summer school, on learning in the areas of literacy, mathematics, and general knowledge. For literacy, required or optional summer school had a minimal effect on learning. With mathematics, the impact was even less, with negative effect sizes. In terms of general knowledge learning, low socio-economic students who attended required summer school gained even less (Burkam et al., 2004). This study only looked at students exiting kindergarten and it did not collect any information on the type of summer programs that students attended. What's more, the greatest percentage of students attending required/or suggested summer school was 5.9% of the lowest socio-economic strata. For optional summer school, the greatest percent, 7.3%, was from the medium-high socio-economic strata (Burkam et al., 2004). For many reasons, families of kindergarten students may feel that summer school is not necessary.

Characteristics of Effective Summer Programs

The findings of the meta-analysis published in 2000 (Cooper et al., 2000) have been the foundation for many recommendations for successful summer learning programs (Boss & Railsback, 2002; Cooper et al., 2000; Entwisle et al., 2001; McCombs et al., 2012). Characteristics of effective summer learning programs are described below.

First, programs that focus on lessening or removing learning deficiencies have a positive impact. Cooper et al. (2000) found that programs in their study with this focus had effect sizes ranging from $d = 0.10$ to $d = 0.49$. Although the meta-analysis did not include very many studies that looked at programs focusing on acceleration or multiple goals, those that were included also had positive impacts on learning.

Second, programs with a small number of schools or classes were more effective. Summer programs held in less than eight schools had effect sizes that ranged from $d = 0.37$ to $d = 0.48$, whereas programs in more than eight buildings were less effective with effect sizes of $d = 0.21$ to $d = 0.29$. Summer programs with fewer classrooms also had more positive results, with effect sizes ranging from $d = 0.42$ to $d = 0.90$ for programs with less than eight classrooms. Programs with more than eight classrooms had effect sizes of $d = 0.13$ to $d = 0.26$ (Cooper et al., 2000).

Small group or individualized instruction is the third attribute of summer learning programs that had a positive effect on achievement. Small classes, small group, or individualized instruction allows for more differentiation. When the size of the class was less than 20, effect sizes ranged from $d = 0.38$ to $d = 0.58$. In the studies with classes over 20 students, effect sizes ranged from $d = 0.19$ to $d = 0.27$ (Cooper et al., 2000).

Fourth, in order to be preventative and avoid summer learning loss, early intervention that targets the primary grades may be the most effective. Cooper et al. (2000) found a curvilinear relationship between grade level and magnitude of effect sizes, with the highest grades having the largest effect sizes ($d = 0.29$ to $d = 0.36$), and the middle grades having the lowest ($d = 0.14$ to $d = 0.21$). The lower elementary grades fell in the middle with effect sizes ranging from $d = 0.19$ to $d = 0.32$ (Cooper et al., 2000).

Fifth, summer programs that required involvement and participation by parents also created larger effects. Programs with parent involvement had effect sizes from $d = 0.53$ to $d = 0.90$. Those programs with no component of parent involvement had effect sizes of $d = 0.24$ to $d = 0.26$ (Cooper et al., 2000).

The sixth finding is that summer programs may have a larger impact on achievement in mathematics than on reading. In the meta-analysis, reading-related measures had an effect size of $d = 0.22$, while the effect size of math-related measures was $d = 0.30$. The smallest impact was on general academic achievement measures, with an effect size of $d = 0.18$. This finding corresponds to other research where general knowledge was found to grow very little for those students attending summer school (Burkam et al., 2004).

Finally, those summer programs that conduct careful evaluation of treatment fidelity to ensure that instruction is implemented as prescribed and closely monitor attendance may have a greater impact on student learning. These indicators were found to be significantly associated with average effect sizes using fixed-effect but not random-effect assumptions (Cooper et al., 2000).

More recently, three nationally known organizations have released their recommendations for effective summer learning programs (Fairchild, McLaughlin, & Brady, 2006; Hanover Research, 2013; McCombs et al., 2012; Smink & Deich, 2010; Smink, 2012). First, in 2006 the Center for Summer Learning published a handbook describing the characteristics of effective summer learning programs, based on their evaluation of several summer programs and the evidence of their success (Fairchild,

McLaughlin, & Brady, 2006). The first three characteristics indicate the programs approach to learning:

- Purposeful focus on accelerated learning-academic learning embedded in enrichment activities
- Strong commitment to youth development-providing supports so that students can reach high expectations
- Proactive approach to summer learning-preventing summer learning loss

The remaining characteristics relate to the program infrastructure:

- Strong, empowering leadership
- Forward-thinking, collaborative planning
- Widespread opportunities for professional development
- Meaningful and deliberate partnerships
- Robust approach to evaluation and improving the program
- Clear commitment to sustaining the program and cost-effectiveness (Fairchild et al., 2006)

Although a bit more broadly written, several of these characteristics correspond to the findings of Cooper et al. (2000). Meaningful and deliberate partnerships would include parents and their involvement in their child's summer learning (Cooper et al., 2000). Having a robust approach to program evaluation and improvement can be directly related to having a careful evaluation of treatment fidelity and ensuring that instruction is implemented as prescribed (Cooper et al., 2000).

The Center for Summer Learning began as Teach Baltimore and was affiliated with Johns Hopkins University in Baltimore. In 2009 the Center for Summer Learning

became an independent organization and the name changed to the National Summer Learning Association (NSLA) (National Summer Learning Association, 2014). With the new name came a New Vision for summer school (Smink & Deich, 2010). The New Vision consists of nine principles:

1. Increase the length, intensity and scope of the traditional summer school model to a 6-week, full-day format.
2. Increase participation to include all students in school-wide Title I programs, not just those who demonstrate an academic need.
3. Focus on a combined approach of enrichment and academic learning. Activities should be hands-on and engaging, developing critical 21st Century or College and Career Readiness skills.
4. Reinforce and increase the number of community-based partnerships with organizations that provide summer activities maximize the use of existing resources and fill the gaps in services provided.
5. Develop strategies to increase student attendance and engagement. This may include providing transportation, healthy meals, recreation, field trips, and other comprehensive supports.
6. Provide relevant and innovative professional development.
7. Implement new and engaging approaches to learning for older students.
8. Focus on key transition times such as the summers before kindergarten, middle school, high school, and college.

9. Consistently applying long-term planning, rigorous evaluation and assessment, data collection, and improving program infrastructures will move summer to the center of school reform strategies (Smink, 2012).

Several of these nine principles are very similar to the earlier recommendations, but others provide much more detail. For example, increasing the duration of summer school to a six-week, full-day model is very specific. Encouraging summer programs to be engaging and hands-on with a focus on developing 21st Century Skills (creativity, collaboration, innovation, communication, and data analysis) provides summer program planners with a lot more direction.

In 2011 the Wallace Foundation published a monograph which reviewed the literature on summer learning loss and effective summer programs. Their list contained many of the characteristics already mentioned, such as small class size, engaging programming, sufficient length of the program, parent involvement, and program evaluation. One additional characteristic that they include is the alignment of summer and school-year curricula (McCombs et al., 2012).

Finally, Hanover Research has also published a report on Summer School Design and Evaluation Framework (2013). They have identified three essential components of a summer program:

1. Experienced and well-trained staff
2. Engage students and their families
3. Evaluate the program effectiveness on a regular basis (Hanover Research, 2013)

At first glance these may seem over simplified, but upon reflection, many of the aforementioned attributes of quality summer school programs can be connected to these three components. For example, if students are engaged, they need to be attending on a regular basis, and learning activities will be hands-on and probably blended with enrichment and recreational activities. Engaged families will be involved in summer learning and actively supporting their student in getting to summer school. Hanover does not make any recommendations as to program length, class size or community partnerships.

Cost and Funding for Summer Learning

The importance of extended learning opportunities in increasing student achievement has grown and there is swelling support for afterschool and summer programs (Smink & Deich, 2010). However, the lack of data on cost effectiveness and the instability of funding have put the implementation of such programs at risk (McCombs et al., 2012; Smink, 2012)

The economic recession experienced in the United States between 2007 and 2009 has certainly impacted education and that included summer school. Although the economy is improving, in fiscal year 2014, more than two thirds of the 48 states studied are still providing less per-student funding than they provided in 2008. In fourteen of those states, per-student funding is 10% or more below the funding levels prior to the recession and in two states, Alabama and Oklahoma, funding levels are more than 20% below the levels prior to the recession. In the United States, approximately 44% of education spending comes from state funds (Leachman & Mai, 2014). Therefore, cuts in state education budgets are felt deeply by school districts.

States are continuing to cut funding for several reasons. First, revenues are still below pre-recession levels. Recovery has been slow as housing values remain low and unemployment is high. States are receiving less income and sales tax revenues, which are the major sources of revenue used by states to fund education and other programs. Second, costs for state-funded programs continue to grow faster than the available money to fund them. Third, states have not raised new revenues through an increase in taxes or fees. Finally, federal aid to states has decreased. Although the federal government provided emergency relief, including education aid and other forms of state fiscal relief, this aid has expired and other cuts have been implemented. Since 2010, federal spending for Title I, the major federal assistance program for schools with high levels of poverty, has decreased 12% after adjusting for inflation (Leachman & Mai, 2014).

As mentioned, the reduction in state funding definitely impacts summer learning programs. In February of 2012 the National Association of School Administrators conducted a survey of 528 school administrators from 48 states. More than 54% reported that they had increased class size in 2011-2012 and more than 31% reduced academic programs, such as interventions and Saturday classes. Of the administrators surveyed, 22.3% eliminated summer programming in 2011-2012 and 29% were considering it for 2012-2013. With sequestration looming, another survey was conducted in June 2012 and by that time nearly 35% of the administrators surveyed said that sequestration cuts could mean that their district would have to eliminate summer school programs (Ellerson, 2012).

Research has shown that students experience learning loss over the summer months, especially students in poverty (Cooper et al., 1996; Entwisle & Alexander,

1992; Heyns , 1978), and that summer school programs do have a positive impact on learning (Cooper et al., 2000; Entwisle & Alexander, 1992). Reductions in state funding and ever-tightening budgets threaten a school district's ability to offer summer programs that can reduce this loss of learning.

Summary

Although the practice of holding school during the summer months has risen and fallen throughout the history of the United States, in recent years it has become a strategy recommended to increase student learning. The summer months could be used to extend the regular school year, offer a summer school session or offer an alternative calendar (Cooper, 2003). Extending the school year and alternate calendars have not maintained high levels of growth, while offering summer learning programs to reduce the achievement gap is gaining in popularity (Smink & Deich, 2010).

A few early researchers found no evidence of summer learning loss (Carter, 1984; Klibanoff & Haggart, 1981), yet other researchers have concluded that students do "slide" backwards over the summer vacation (Cooper et al., 1996; Heyns, 1978). In the best case scenario, students remain at the same level of achievement after summer vacation. In the worst case, students will experience approximately one month of learning loss. For students in general, the content areas most affected by the long summer break appear to be math computation and spelling (Cooper et al., 1996).

For some students, summer vacation is even more detrimental. Students living in poverty (Cooper et al., 1996; Entwisle & Alexander, 1992; Heyns, 1978), regress the most over the summer months. In general, most students will experience a loss in math skills over the summer, while students in poverty may also experience a loss of up to

three months in reading (Cooper et al., 1996). As the faucet theory suggests (Entwisle, et al., 2001), when the faucet of school resources is turned on, all students learn at equal rates. However, when the faucet is turned off, as it often is over the summer months, families in poverty cannot make up for the missing resources and so student learning stops or even declines.

During the school year students in poverty learn at nearly equal or equal rates as higher socio-economic students (Alexander et al., 2007a; Downey et al., 2004). However, if students lose two months of learning over the summer, they are continually starting the year behind their higher socio-economic peers. One study found that these summer losses accumulate over the years (Alexander et al., 2007a). In this study, the difference in Reading Comprehension points on the California Achievement Test for disadvantaged students and high socio-economic students entering first grade was 26.48 points. By the end of ninth grade the gap in Reading Comprehension points was 73.16. Repeated learning losses over the summers accumulate and have a major impact on the achievement gap.

Early research found that summer school generally had little impact on increasing student achievement (Heyns, 1986; Heyns, 1987). However, a landmark meta-analysis (Cooper et al., 2000) found that remedial summer programs do have a positive impact on learning. Students participating in a program focused on removing deficiencies in learning can be expected to score approximately one fifth of a standard deviation higher on the outcome measure than the control group.

Other studies have also found that summer programming has a positive impact (Bakle, 2010; Borman et al., 2005; Borman et al., 2009; Chaplin & Capizzano, 2006;

Zvoch, 2011). These studies all focused on reading skills and found that students who attended summer programs demonstrated more growth in reading skills than those students in the control group who did not attend. The correlation of impact of these summer programs, or effect sizes, ranged from d=0.012 (Bakle, 2010) to d=1.17 (Zvoch & Stevens, 2013).

A 2006 study looked at the impact of attending summer school for multiple years (Borman & Dowling, 2006). The researchers found that students who attended the Teach Baltimore program for at least two of the three summers, with average attendance, returned to school in the fall with achievement scores one half of a standard deviation higher than their control group peers.

Not all summer programs are equal, and in general researchers agree on program attributes that contribute to higher achievement (Cooper et al., 2000; Hanover Research, 2013; McCombs et al., 2012; Smink & Deich, 2010). Some key characteristics of effective summer programs include:

- Small group or individualized instruction
- Parent and community involvement
- Highly qualified teachers with opportunities for professional development
- Strong commitment to program evaluation and improvement
- Sufficient length and intensity of the program
- Combined approach of academic instruction and enrichment
- Focus on youth development and providing supports so that students can learn

Finally, research indicates that students do experience learning loss over the summer, especially students in poverty. Summer programs have been found to have a

positive impact on learning and reducing the achievement gap, but budget shortfalls and inconsistent funding sources threaten a district's ability to offer summer learning programs (Ellerson, 2012; Leachman & Mai, 2014; McCombs et al., 2012). In June of 2012, the National Association of School Administrators conducted a survey of more than 500 school administrators across the country. Nearly 35% of all administrators surveyed indicated that budget reductions and loss of funding could mean that their districts would have to eliminate summer programs (Ellerson, 2012).

Organization of the Remainder of the Study

The next chapter outlines the methods that were be used to evaluate the impact of the Elementary Learning Center Summer Program in Millard Public Schools. A description of the summer program, identification of eligible students, evaluation questions, definition of evaluation tools and a description of how the collected data was analyzed is provided.

The fourth chapter provides an analysis and interpretation of the data collected. The findings are described in relation to the evaluation questions and are presented in tables.

In chapter 5 a clear and concise summary is presented. Implications of the study are discussed and recommendations for further study are explored.

CHAPTER 3

Methodology

The purpose of this evaluation was to provide program results to the Board of Education for the sponsoring school district, program administrators, building principals and the Learning Community of Douglas and Sarpy Counties. These stakeholders want to know if students are making achievement gains during the program, if those gains are sustained until the beginning of the new school year, and if participation reduces the achievement gap.

The evaluation results will be used to inform stakeholders, but in addition, the evaluation will be used to make decisions about the program. The Learning Community can use the information to determine continuation of funding and share implications with other participating school districts. District and program administrators will make other decisions, such as the length of the program, optimal class size and curriculum to be used. Decisions may be made with regards to instructional strategies and professional development for teachers as well. In addition, evaluation results will be used to make decisions about family involvement activities and services. Will Family Days be continued as in the past? What services are most beneficial to students and their families?

Description of the Program

The Elementary Learning Center Summer Program (ELC) began in the summer of 2011. The program was implemented to address learning deficiencies and to combat the effects of summer learning loss for elementary students. The program is funded by the school district and the Learning Community of Douglas and Sarpy Counties.

The Elementary Learning Center is offered for three weeks in July. Students have twelve days of instruction, Monday-Thursday, 8:30-12:45. Families are encouraged to attend with their students on three Fridays, 9:00-12:45. Breakfast and lunch are provided each day and on Fridays the parents and siblings are invited to eat lunch as well. Transportation is provided for all students.

Class size is ten to eleven students with one teacher. Teachers are certified teachers, with the majority teaching in the eight schools that the students attend during the school year. In addition, the program has a community counselor, bilingual liaison, secretary, teacher librarian, and support staff. There is an on-site summer administrator who hires and supervises the summer staff. The administrator also collaborates with district level personnel.

During the three hour block of instructional time students focus on reading, writing, and math skills. The ELC uses the Summer Success® Reading Program and Houghton Mifflin Guided readers for reading and writing instruction. The materials include an assessment guide, leveled texts, Read-Aloud books and a reading library. The language arts block provides time for large group instruction, small group rotations, instructional writing, and reading aloud. Students are placed in groups based on assessment data from the end of the school year as well as data collected on the first day of the program.

In mathematics, the curriculum consists of Summer Success® Math and some lessons from the district math curriculum, Scott Foresman-Addison Wesley Mathematics. Again, whole group and small group instructional strategies are used. Specific skills are

targeted based on data collected at the end of the school year as well as on the first day of the program.

Fridays are dedicated as Family Days and parents and siblings are invited to attend with their student. Children and parents rotate through various presentations and activities throughout the morning. Presentations and activities are determined based on the needs of invited families. Needs are determined through survey data collected as families enroll their children. Friday events have included presentations from the Omaha Children's Museum, Gifford Farms, Vintage Financial, and grocery stores. Topics include Common Sense Parenting, providing healthy snacks, helping children with homework, financial planning, and more. Parents have an opportunity to take a bus to learn about the Millard Family Resource Center, which has many learning materials, tools, and resources for families to check out for use at home. A bus trip has also been provided to help families learn about community resources such as food pantries and health services. Following the activities parents and siblings join the students and staff for lunch.

Helping children and families be prepared for learning is an important part of the Elementary Learning Center Summer Program. The Food Bank of the Heartland provides Friday food backpacks for some students to take home for the weekend. One World Dental provides free dental exams and some services at the school via their traveling dental truck. Books are sent home with all students each week in order to encourage reading at home. Grants have been received in order to purchase school supplies so that when the program ends, each student is ready to start the school year in just a few weeks.

The Elementary Learning Center Summer Program has operated for four summers and this program evaluation is needed in order to provide feedback to all stakeholders. The Board of Education and the Educational Services division have questions that need to be answered. The Learning Community of Douglas and Sarpy Counties is another stakeholder with questions of accountability and program justification. Program teachers and administrators are additional stakeholders with concerns regarding curriculum and effectiveness of instructional strategies. Finally, the students and their families are important stakeholders who may have a multitude of questions; does the program offset summer learning loss for their students? Are they catching up to other students? Will their children be successful at the next level?

Participants

The participants in this evaluation were a convenience sample of invited students who attended the program in 2013 and 2014. Students were invited from six elementary schools with higher levels of poverty, mobility, and English Language Learners (ELL). In addition, English Language Learners were invited from two additional elementary schools that also host ELL cluster sites.

Students in kindergarten through second grade were invited based on the results of their winter benchmark assessments in reading and math. Invitations were sent to students who had any benchmark assessment score below the 25^{th} percentile or two or more assessments below the 50^{th} percentile. Preschool students who would be entering kindergarten in the fall were also invited to attend if they were a sibling of another invited student, had preschool information indicating an academic need, or spoke English as a second language.

Number of participants. A total of 450 students attended the Elementary Learning Center (ELC) Summer Program during the summers of 2013 and 2014. There were 65 pre-kindergarten, 134 kindergarten, 130 first grade, and 121 second grade students. Students who did not have data available for all data points were removed from the sample.

Gender of participants. Fifty-seven percent or 255 of participating students were male, while 43% or 195 were female.

Language of participants. English was the primary language for 65% or 292 of the participants. Thirty-five percent of the students participating were English Language learners.

Socio-economic status of participants. Fifty-nine percent or 267 of participating students qualify for the free or reduced priced meal program. Students from higher socio-economic families comprised 41% or 183 of the participants.

Non-participants

Non-participants are those students who were invited to attend the Elementary Learning Center (ELC) Summer Program in 2013 and 2014 but chose not to attend. Non-participants attend the same schools and were invited based on the same criteria as participating students.

Number of non-participants. A total of 1,086 students were invited to attend the ELC in 2013 and 2014 and 636 chose not to attend. There were 106 pre-kindergarten, 173 kindergarten, 211 first grade, and 146 second grade students who were invited and did not attend. For data analysis, a random sample of non-participating students was done in order to have samples the same size a participating students.

Gender of non-participants. Fifty-two percent or 332 of non-participating students were male, while 48% or 304 were female.

Language of non-participants. English was the primary language for 83% or 525 of the non-participants. Seventeen percent or 111 of the students not participating were English Language learners.

Socio-economic status of non-participants. Fifty-seven percent or 363 of non-participating students qualify for the free or reduced priced meal program. Students from higher socio-economic families comprised 43% or 273 of the non-participants.

Design

A decision-oriented approach, specifically a Utilization Focused Evaluation will be used to evaluate the Elementary Learning Center Summer Program. Decision-oriented evaluation methods were developed in the 1970s in order to address the problem of evaluations being conducted, but then ignored. The evaluations had no impact. This approach was designed to support decision makers. A good evaluation should provide information to the decision makers, allowing them to make sound, well-informed decisions about the program being evaluated (Fitzpatrick, Sanders, & Worthen, 2011).

There are three types of decision-oriented approaches; the Context, Input, Process, and Product or CIPP Model, the utilization-focused evaluation (UFE), and performance monitoring (Fitzpatrick et al., 2011). The utilization-focused evaluation was found to be the most appropriate for this summer learning program. This type of evaluation is based on two premises. The first is that the main reason for the evaluation is to help inform decisions. The second premise is that evaluation results will most likely

be used if the evaluator has identified key stakeholders who care about the evaluation and who have the authority to make decisions with the results (Fitzpartick et al., 2011).

Michael Patton was the developer of the utilization-focused evaluation and he published the first book on the model in 1978. He defines UFE as "evaluation done for and with specific intended primary users for specific, intended uses" (Patton, 2008, p. 37). In the case of the Elementary Learning Center Summer Program (ELC), there are specific uses for the evaluation results that can be used by specific stakeholders.

There are five groups of stakeholders for the ELC; students, parents, program teachers, and administrators, district administrators, and the Learning Community of Douglas and Sarpy Counties. Students participating in the program are important stakeholders as their achievement is the reason for conducting the program. Parents are another important group of stakeholders as they are particularly interested in improving the achievement of their children. Their involvement in school and summer programs is critical to student success. The ELC administrators and teachers are a third group of stakeholders. Their efforts in the school and classroom directly affect achievement and they want to know if they are successful and if there are things they should do differently.

Although students, parents, and program administrators and teachers are important stakeholders and their feedback is vital to the success of the program, the final two groups, district administrators and the Learning Community of Douglas and Sarpy Counties are the key stakeholders for this evaluation. The Learning Community is highly interested in the results as they want to know if the funds provided in the grant are making a difference in student achievement. They have the ability to change program

parameters, or to increase, decrease, or eliminate funding if programs are not achieving the desired impact on student learning.

Finally, the district administrators responsible for student learning, curriculum and instruction are the prime stakeholders. They have a high interest in raising student achievement and reducing the gap between higher and lower socio-economic groups. In addition, they have the authority to make decisions with regards to the program. The evaluation results can be used to make decisions about curriculum, length of the program, parent activities, instructional strategies, and more. Ultimately the district leaders can decide whether or not to continue the summer program, with or without funding from the Learning Community.

The evaluation of the Elementary Learning Center Summer Program meets the criteria for a utilization-focused approach. First, the results will be used to make decisions about the program; instructional strategies, duration of the program, curriculum materials, and program continuation could all be affected by the evaluation. Second, district level administrators responsible for student achievement and summer programming are the primary stakeholders. They have the authority to use the evaluation results to make decisions with regards to all aspects of the program.

Research Questions

Ten evaluation questions have been determined:

Overarching Question #1. Are pre-kindergarten students who participate in the Elementary Learning Center (ELC) Summer Program staying the same or making gains in reading and math achievement during the program?

Sub-Question 1a. Are pre-kindergarten students staying the same or making gains in reading from pre-test to post-test as measured on Achievement Improvement Monitoring System (AIMSweb®) assessment for early literacy for Letter Sound Fluency (LSF)?

Sub-Question 1b. Are pre-kindergarten students staying the same or making gains in math from pre-test to post-test as measured on the Math Screener for Number Identification (NI) assessment?

Overarching Question #2. Are kindergarten students who participate in the Elementary Learning Center (ELC) Summer Program staying the same or making gains in reading and math achievement during the program?

Sub-Question 2a. Are kindergarten students staying the same or making gains in reading from pre-test to post-test as measured on Achievement Improvement Monitoring System (AIMSweb®) assessment for early literacy for Phoneme Segmentation Fluency (PSF)?

Sub-Question 2b. Are kindergarten students staying the same or making gains in math from pre-test to post-test as measured on the Math Screener for Quantity Discrimination (QD) assessment?

Overarching Question #3. Are first grade students who participate in the Elementary Learning Center (ELC) Summer Program staying the same or making gains in reading and math achievement during the program?

Sub-Question 3a. Are first grade students staying the same or making gains in reading from pre-test to post-test as measured on Achievement Improvement Monitoring

System (AIMSweb®) assessment for words read correctly or Reading Curriculum-Based Measure (R-CBM)?

Sub-Question 3b. Are first grade students staying the same or making gains in math from pre-test to post-test as measured on the Scholastic Math Inventory® (SMI)?

Overarching Question #4. Are second grade students who participate in the Elementary Learning Center (ELC) Summer Program staying the same or making gains in reading and math achievement during the program?

Sub-Question 4a. Are second grade students staying the same or making gains in reading from pre-test to post-test as measured on Achievement Improvement Monitoring System (AIMSweb®) assessment for words read correctly or Reading Curriculum-Based Measure (R-CBM)?

Sub-Question 4b. Are second grade students staying the same or making gains in math from pre-test to post-test as measured on the Scholastic Math Inventory® (SMI)?

Overarching Question #5. Do pre-kindergarten students who participate in the ELC start kindergarten at the same or different levels of achievement in math or reading as compared to pre-kindergarten students who were invited but chose not to attend?

Sub-Question 5a. Do participating students who are entering kindergarten start the school year at the same or different levels of reading achievement as compared to non-participating students, as measured on the AIMSweb® benchmark assessment for Letter Sound Fluency (LSF)?

Sub-Question 5b. Do participating students who are entering kindergarten start the school year at the same or different levels in mathematics as compared to non-participating students, as measured on the Math Screener for Number Identification (NI)?

Overarching Question #6. Do kindergarten students who participate in the ELC maintain, lose or improve in math or reading from spring to fall as compared to kindergarten students who were invited but chose not to attend?

Sub-question 6a. Do kindergarten students who participate in the ELC maintain, lose or improve in reading from spring to fall as compared to non-participating kindergarten students, as measured using the AIMSweb® assessment for early literacy for Phoneme Segmentation Fluency (PSF),?

Sub-question 6b. Do kindergarten students who participate in the ELC maintain, lose or improve in mathematics from spring to fall as compared to non-participating kindergarten students, as measured on the Math Screener for Quantity Discrimination (QD)?

Overarching Question #7. Do first grade students who participate in the ELC maintain, lose or improve in math or reading from spring to fall as compared to kindergarten students who were invited but chose not to attend?

Sub-question 7a. Do first grade students who participate in the ELC maintain, lose or improve in reading from spring to fall as compared to non-participating first grade students, as measured on the Reading Curriculum-Based Measure (R-CBM)?

Sub-question 7b. Do first grade students who participate in the ELC start second grade at the same or different level of math achievement as compared to non-participating first grade students as measured on the Math Screener for Missing Number and the Scholastic Math Inventory® (SMI)?

Overarching Question #8. Do second grade students who participate in the ELC maintain, lose, or improve in math or reading from spring to fall as compared to second grade students who were invited but chose not to attend?

Sub-question 8a. Do second grade students who participate in the ELC maintain, lose, or improve in reading from spring to fall as compared to non-participating second grade students, as measured on the Reading Curriculum-Based Measure (R-CBM)?

Sub-question 8b. Do second grade students who participate in the ELC maintain, lose, or improve in mathematics from spring to fall as compared to non-participating second grade students, as measured on the Scholastic Math Inventory® (SMI)?

Overarching Question #9. Do students who participated in the ELC for at least two of the four summers show congruent or different achievement on the third grade Nebraska State Accountability assessments as compared to students who were invited but did not attend the summer program?

Sub-question 9a. Do students who participated in the ELC for at least two of the four summers show congruent or different achievement on the third grade Nebraska State Accountability-Reading (NeSA-R) assessment as compared to non-participating students?

Sub-question 9b. Do students who participated in the ELC for at least two of the four summers show congruent or different achievement on the third grade Nebraska State Accountability-Math (NeSA-M) assessment as compared to non-participating students?

Sub-question 9c. Do low socio-economic (SES) students who participated in the ELC for at least two of the four summers show congruent or different achievement on the third grade NeSA-R as compared to non-participating low SES students?

Sub-Question 9d. Do low socio-economic (SES) students who participated in the ELC for at least two of the four summers show congruent or different achievement on the third grade NeSA-M as compared to non-participating low SES students?

Overarching Question #10. Are families satisfied with the program and do families participate in and benefit from the Family Day activities and services?

Sub-Question 10a. Based on data from the parent survey, were parents satisfied with the summer program and do they believe their child will be more successful in the following school year as a result of the program?

Sub-Question 10b. Based on data from the parent survey, did families attend one or more of the three family days and do they feel that the events and activities were helpful to their family?

Instruments

Reading data was gathered using universal screeners from Achievement Improvement Monitoring System (AIMSweb®). These include tests of early literacy, such as Letter Naming Fluency (LNF), Letter Sound Fluency (LSF), Phoneme Segmentation Fluency (PSF) and Nonsense Word Fluency (NWF). For students in second and third grade a Reading Curriculum-Based Measurement (R-CBM) was used to score the number of words read correctly per minute. Scores for these screeners can be interpreted using district norms or national percentile norms.

In mathematics, district developed screeners were used with students in kindergarten through first grade. Math measures include Number Identification (NI), Missing Number (MN) and Quantity Discrimination (QD). The Scholastic Math Inventory® (SMI) was also given to students entering second and third grade. This is a

computer-adaptive universal screener that helps define the math concepts and skills that students know and can perform. Scores available with the SMI include: raw, standard, percentile, normal curve, stanines, developmental benchmarks, and composite scores.

These universal screeners are valuable for evaluating an instructional program for several reasons. First, most of the measures are general outcome measures, which mean they assess key aspects of the school-year curriculum. In addition, they are indicators of the reading domain in that they are generic indicators and not related to a specific curriculum. Finally, there are parallel forms of each measure that are administered to all students in the district three times during the school year and during the summer program. This provides comparable data.

In Nebraska all students participate in the Nebraska State Accountability (NeSA) system of assessments beginning in grade 3. Data from the NeSA-Reading and NeSA-Math in grades 3 and 4 was used to measure the long-term effects of this summer learning program and its effect on the achievement gap. The NeSA assessments are standardized tests that were developed by the state and they are used for both state and federal accountability reports. The state releases the student's scale score, performance level (Below, Meets, or Exceeds the Standards) and the student's state percentile rank. A school's percentages of students meeting or exceeding the standards for reading and math are used in the calculation of Adequate Yearly Progress (AYP), as required the No Child Left Behind Act (2001). A comparison of NeSA scores for participating students with scores for those invited students who chose not to attend provides information as to the long-term effects of the summer program. In addition, a comparison of the NeSA scores for participating students who are eligible for free and reduced priced meals with the

scores of students in the same grade level who are not eligible for free or reduced priced meals allows for an analysis of the impact on the achievement gap in this district.

Data on participation was collected using the district's data management system, Infinite Campus®. Data was collected for invited students who participated and also for those similar students who were invited but chose not to attend.

A parent survey was used to gather data on the impact of Family Days and parent satisfaction. This tool was be developed by the Learning Community of Douglas and Sarpy Counties and the evaluator. It consists of 12-18 questions for parents to answer using a Likert scale of 1 to 5. Space is provided for parents to add additional information on program strengths and concerns.

Data Collection

Data from the universal screeners and parent survey was collected at several different times in order to answer the evaluation questions. See Table 1 on the following page. Procedures for gathering the reading and math data will be the same at all points of collection. Teachers and paraprofessionals from all elementary schools are trained on the administration of the universal screeners and will be hired to administer these assessments during the summer program as well.

Institutional review board (IRB) for the Protection of Human Subjects Approval Category. This study is exempt under 45 CFR 46:101b, category 4. This study was conducted in established and accepted educational settings and involved normal educational practices. A letter of approval and support from the host district was provided for the University of Nebraska Medical Center/University of Nebraska at Omaha Joint Institutional Review Board.

Table 1

Data Collection Procedures

Timeframe	Measurement	Administered By	Collected for Whom	Purpose
First week of May	Reading-LNF, LSF, PSF, NWF, R-CBM Math-NI, MN, QD, SMI	Trained staff in each school	All students invited to the ELC	Provide baseline data to analyze growth or loss during program
First day of ELC	Reading-LNF, LSF, PSF, NWF, R-CBM Math-NI, MN, QD, SMI	Trained staff from various schools	All students attending the ELC	Beginning of program data; to show change from beginning to end of ELC Also shows change from end of the year to start of ELC
Last instructional day of ELC	Reading-LNF, LSF, PSF, NWF, R-CBM Math-NI, MN, QD, SMI	Trained staff from various schools	All students attending the ELC	End of program data; to show change from beginning to end of program Also shows change from end of school year to end of ELC
First full week of the next school year	Reading-LNF, LSF, PSF, NWF, R-CBM Math-NI, MN, QD, SMI	Trained staff in each school	All students invited and attending the ELC	Beginning of the year data; used to show change from end of school year to beginning of next (summer loss or gain) Also compared to end of ELC data to show change
Last week of ELC	Parent Survey	-Paper survey sent home with students -Also available on the last family day to complete and turn in immediately -Can be sent as an electronic survey as well	Parents or Guardians of all students who attended the ELC	Data collected to demonstrate parent satisfaction with benefits gained from ELC and family day activities

Data Analysis

Pre and post-test data for all students who attended the Elementary Learning Center (ELC) in 2013 and 2014 was gathered and a mean score was calculated for each grade level and each math and reading assessment. A paired sample two-tailed *t*- test for means was conducted to determine if a change occurred. The Cohen's *d* was used to measure the effect size, or the absolute size of the treatment effect.

To determine if summer learning loss was affected by the program, data from the end of the school year was compared to data from the beginning of the next school year. Assessments scores were converted to *z*-scores using the mean and standard deviation from district norms. An independent sample two- tailed *t*- test was conducted to determine the significance of the any change and Cohen's *d* was calculated to measure effect size.

In order to determine the long-term effects of participation in the summer program, as well as the impact on the achievement gap, data from the Nebraska State Accountability (NeSA) assessments for reading and math was analyzed. NeSA scores for students who participated in the program for two or more years were compared with scores for those invited students who chose not to attend. In addition, a comparison of the NeSA scores for participating students who were eligible for free and reduced priced meals with the scores of students in the same grade level who were not eligible for free or reduced priced meals allowed for an analysis of the impact on the achievement gap in this district. For these tests, any changes will be statistically analyzed using an independent sample two-tailed *t*- test and effect size will be measured using Cohen's *d*.

A parent survey was used to gather information with regards to parent satisfaction with the program and the perceived benefits from the Family Day activities. The questions on the survey have a 5 point scale on which parents rate their agreement with 15 to 18 statements. Average scores were computed for each statement in order to determine overall program satisfaction and the level of benefit received from Family Day activities and presentations. Comments from parents will be read and tallied and will provide input to administrators as they make decisions about the program and parent involvement activities.

Organization of Remaining Chapters

This chapter provides a description of the summer program being evaluated and the eligible students who are invited each year. The evaluation design, a decision-oriented approach called a utilization-focused evaluation, is described and the stakeholders are defined. The evaluation questions are outlined and the assessment instruments, data collection and analysis procedures are described.

The following chapter provides an analysis and interpretation of the data collected. The findings are described in relation to the evaluation questions and are presented in tables. In chapter five a clear and concise summary is presented. Implications of the study are discussed and recommendations for further study are described.

CHAPTER 4

Results

The purpose of this study was to evaluate the impact of one district's summer learning program on achievement for invited students who attended the three-week program. The goal of the summer program was to combat summer learning loss in reading and math, as well as to help reduce the achievement gap in this district.

The Elementary Learning Center (ELC) Summer Program has been offered for four years, 2011 to 2014. Pre-kindergarten to second grade students are invited based on an academic need. These students attend six Title I schools with similar demographics, and two additional English Language Learner (ELL) cluster site schools. Determination of academic need was based on two or more reading and math benchmark scores that fell into the 50^{th} percentile or one assessment that fell below the 25^{th} percentile.

The ELC is held for three weeks in July each year and there is no cost to attend. Breakfast and lunch are provided and free bus transportation is available for all students. Classroom instruction is from 9:00-12:00, Monday through Thursday. Fridays are Family Days and parents, guardians and siblings are invited to spend the morning with their student. Educational activities are planned for parents and students to do together and many social resources and services are available for those families in need.

The majority of this evaluation involves data collected for students who participated during the summers of 2013 and 2014. In order to determine the impact on the achievement gap, 2012 and 2013 state assessment data was collected for students who had participated for two or more summers, which may have included students who attended in 2011 or 2012.

Reading data was gathered using universal screeners from Achievement Improvement Monitoring System (AIMSweb®). These include tests of early literacy, such as Letter Sound Fluency (LSF) and Phoneme Segmentation Fluency (PSF). For students in second and third grade a Reading Curriculum-Based Measurement (R-CBM) was used to score the number of words read correctly per minute.

In mathematics, universal screeners were used with students in kindergarten through first grade. Math measures include Number Identification (NI), Missing Number (MN) and Quantity Discrimination (QD). The Scholastic Math Inventory® (SMI) is also given to students entering second and third grade. This is a computer-adaptive universal screener that helps define the math concepts and skills that students know and can perform.

The assessments described above are given to students in the host district three times a year; in late August, December, and May. The same assessments were used as pre- and post-test measures to evaluate the summer program. Reading and math data were collected from pre- and post-test assessments given on the first and last academic days of the program. Data from the May and August assessment points were used to determine the amount of summer learning loss.

In order to determine the long-term effect of the ELC, data was collected from Nebraska State Accountability (NeSA) assessments for reading and math. The NeSA assessments are given annually, beginning in grade 3. The state of Nebraska uses the NeSA data for reading and math for the calculation of Adequate Yearly Progress (AYP) to meet the requirements of No Child Left Behind. Therefore this data was also to be

used in this study to evaluate the impact of the ELC on the achievement gap in this district.

A parent survey was used to collect information on parent satisfaction and the value parents placed on the Family Day activities and services. The parent survey was developed by the Learning Community of Douglas and Sarpy Counties (see Appendix A). The host district was allowed to adapt the survey to include questions unique to the ELC.

Results

This evaluation addressed ten overarching questions with accompanying sub-questions.

Overarching Question #1. Are pre-kindergarten students who participate in the Elementary Learning Center (ELC) Summer Program staying the same or making gains in reading and math achievement during the program?

Sub-Question 1a. Are pre-kindergarten students staying the same or making gains in reading from pre-test to post-test as measured on the Achievement Improvement Monitoring System (AIMSweb®) assessment for early literacy for Letter Sound Fluency (LSF)?

Pre-kindergarten students made significant gains in Letter Sound Fluency from the pre-test (M = 9.75, SD = 9.54) to post-test (M = 11.91, SD = 11.84), $t(54) = 2.58$, p = 0.01, d = 0.20, as seen is Table 2. The mean of 11.92 fall above the 50th percentile as shown on the AIMSweb® growth table for LSF using district norms as shown in Table A1.

Sub-Question 1b. Are pre-kindergarten students staying the same or making gains in math from pre-test to post-test as measured on the Math Screener for Number Identification (NI) assessment?

As seen in Table 3, pre-kindergarten students made no significant change from pre-test (M = 34.22, SD = 16.92) to post-test (M = 36.04, SD = 16.93), $t(54) = 1.21$, p = 0.23, d = 0.11.

Overarching Question #2. Are kindergarten students who participate in the Elementary Learning Center (ELC) Summer Program staying the same or making gains in reading and math achievement during the program?

Sub-Question 2a. Are kindergarten students staying the same or making gains in reading from pre-test to post-test as measured on Achievement Improvement Monitoring System (AIMSweb®) assessment for early literacy for Phoneme Segmentation Fluency (PSF)?

As shown in Table 4, participating kindergarten students made significant growth on Phoneme Segmentation Fluency from the beginning of the program (M = 35.96, SD = 17.90) to the end of the program (M = 41.31, SD = 22.87), $t(112 = 3.42$, p = 0.001, d = 0.26. Although these students made significant growth while attending the program, the mean score falls near the 25th percentile on the AIMSweb® growth tables using district norms as shown in Table A2.

Sub-Question 2b. Are kindergarten students staying the same or making gains in math from pre-test to post-test as measured on the Math Screener for Quantity Discrimination (QD) assessment?

Table 5 illustrates that participating kindergarten students made significant growth in mathematics on the Quantity Discrimination assessment. Growth from pre-test (M = 23.01, SD = 10.33) to post-test (M = 25.46, SD = 11.14) was significant as $t(112) = 4.03$, $p < 0.001$ and $d = 0.23$.

Overarching Question #3. Are first grade students who participate in the Elementary Learning Center (ELC) Summer Program staying the same or making gains in reading and math achievement during the program?

Sub-Question 3a. Are first grade students staying the same or making gains in reading from pre-test to post-test as measured on Achievement Improvement Monitoring System (AIMSweb®) assessment for words read correctly or Reading Curriculum-Based Measure (R-CBM)?

First grade students who participated in the Elementary Learning Center made gains in reading as measured on the R-CBM. Table 6 shows that growth to be significant from pre-test (M = 51.43, SD = 31.46) to post-test (M = 58.24, SD = 33.20), $t(113) = 7.11$, $p < 0.001$, $d = 0.21$. Again, although this growth is significant, the means score falls just above the 25th percentile.

Sub-Question 3b. Are first grade students staying the same or making gains in math from pre-test to post-test as measured on the Scholastic Math Inventory® (SMI)?

Table 7 reveals that first grade participating students made no gains in mathematics from pre-test (M = 16.50, SD = 8.15) to post-test (M = 16.47, SD = 7.74), $t(113) = -0.05$, $p = 0.96$, $d = 0.00$, as measured on the Missing Number assessment.

Overarching Question #4. Are second grade students who participate in the Elementary Learning Center (ELC) Summer Program staying the same or making gains in reading and math achievement during the program?

Sub-Question 4a. Are second grade students staying the same or making gains in reading from pre-test to post-test as measured on Achievement Improvement Monitoring System (AIMSweb®) assessment for words read correctly or Reading Curriculum-Based Measure (R-CBM)?

Second grade students who attended the ELC made gains on the R-CBM, or word read correctly. Table 8 shows that the gains were found to be significant from pre-test (M = 79.01, SD = 29.13) to post-test (M = 86.75, SD = 31.31), $t(105) = 8.21$, $p < 0.001$, $d = 0.25$. The mean post-test score falls in the 25th percentile on the AIMSweb® growth table using district norms as shown in Table A3.

Sub-Question 4b. Are second grade students staying the same or making gains in math from pre-test to post-test as measured on the Scholastic Math Inventory® (SMI)?

Table 9 shows that participating second grade students did not make significant growth in math from pre-test (M = 252.76, SD = 145.07) to post-test (M = 266.45, SD = 154.18), $t(104) = 1.02$, $p = 0.31$ and $d = 0.09$. The mean score for these students is at the proficient level on the SMI student performance table as shown in Table A4.

Overarching Question #5. Do pre-kindergarten students who participate in the ELC start kindergarten at the same or different levels of achievement in math or reading as compared to pre-kindergarten students who were invited but chose not to attend?

Sub-Question 5a. Do participating students who are entering kindergarten start the school year at the same or different levels of reading achievement as compared to

non-participating students, as measured on the AIMSweb® benchmark assessment for Letter Sound Fluency (LSF)?

As shown on Table 10, pre-kindergarten students who participated in the ELC did not start kindergarten at a different level of LSF than similar invited students who chose not to attend. There was no significant difference on the LSF assessment between participating students (M = 12.57, SD = 11.44) and non-participating students (M = 13.71, SD = 11.68), $t(114) = 0.53$, $p = 0.60$, $d = 0.10$. Table A1 shows that participating and non-participating students started kindergarten above the 50th percentile for LSF as outlined on the AIMSweb® growth table using district norms.

Sub-Question 5b. Do participating students who are entering kindergarten start the school year at the same or different levels in mathematics as compared to non-participating students, as measured on the Math Screener for Number Identification (NI)?

Pre-kindergarten students did not start kindergarten significantly different in math than non-participating students. Table 11 shows that participating students (M = 32.57, SD =17.96) were not very different as measured by the NI assessment than non-participating students (M = 30.00, SD = 20.17), $t(114) = -0.72$, $p = 0.47$, $d = -0.13$. The mean NI scores for these students are in the 25th to 50th percentile level.

Overarching Question #6. Do kindergarten students who participate in the ELC maintain, lose, or improve in math or reading from spring to fall as compared to kindergarten students who were invited but chose not to attend?

Sub-question 6a. Do kindergarten students who participate in the ELC maintain, lose, or improve in reading from spring to fall as compared to non-participating

kindergarten students, as measured using the AIMSweb® assessment for early literacy for Phoneme Segmentation Fluency (PSF)?

Table 12 reveals that a two-tailed *t*-test for equal variances using *z*-scores for participating students did not discover a significant difference from spring (M_z = -0.58, *SD* = 1.35) to fall (M_z = -0.28, *SD* = 1.35), *t*(248) = 1.74, *p* = 0.08, *d* = 0.22. Non-participating students did experience a significant loss on PSF from spring (M_z = 0.75, *SD* = 1.20) to fall (M_z = -0.17, *SD* = 0.97), *t*(248) = -6.69, *p* < 0.001, *d* = -0.85. Participating students essentially stayed the same on the PSF assessment from spring to fall, while non-participating students had a significant loss. Non-participating kindergarten students ended kindergarten 0.75 of a standard deviation above the district mean, but after the summer vacation returned to school 0.17 of a standard deviation below the district mean.

Sub-question 6b. Do kindergarten students who participate in the ELC maintain, lose, or improve in mathematics from spring to fall as compared to non-participating kindergarten students, as measured on the Math Screener for Quantity Discrimination (QD)?

Participating students demonstrated a significant loss in QD as shown in Table 13. A two-tailed *t*-test for equal variances using *z*-scores for participating students revealed that QD scores from spring (M_z = 0.10, *SD* = 2.07) to fall (M_z = -0.59, *SD* = 0.99) incurred a significant loss, *t*(248) = -3.37, *p* = 0.001, *d* = -0.45. The mean z-scores indicate that these participating students ended kindergarten 0.10 of a standard deviation above the district mean, but fell to nearly 0.60 of a standard deviation below the district mean for

incoming first grade students. Non-participating students demonstrated no significant change on the QD assessment from spring (M_z = -0.38, *SD* = 0.95) to fall (M_z = -0.35, *SD* = 1.03), *t*(248) = 0.25, *p* = 0.81, *d* = 0.03. Non-participating students started kindergarten 0.35 of a standard deviation below the district mean, but also ended kindergarten 0.38 of a standard deviations below the district mean.

Overarching Question #7. Do first grade students who participate in the ELC maintain, lose, or improve in math or reading from spring to fall as compared to kindergarten students who were invited but chose not to attend?

Sub-question 7a. Do first grade students who participate in the ELC maintain, lose, or improve in reading from spring to fall as compared to non-participating first grade students, as measured on the Reading Curriculum-Based Measure (R-CBM)?

Table 14 shows that neither participating nor non-participating first grade students experienced any significant change in reading from spring to fall. A two-tailed *t*-test for equal variances using *z*-scores for participating students revealed no significant change from spring (M_z = -0.85, *SD* = 0.73) to fall (M_z = -0.80, *SD* = 0.76), *t*(244) = 0.56, *p* = 0.58, *d* = 0.07. Non-participating students were below the district mean in the spring (M_z = - 0.64, *SD* = 0.69) and in the fall (M_z = -0.61, *SD* = 0.73), *t*(244) = 0.32, *p* = 0.75, *d* = 0.04.

Sub-question 7b. Do first grade students who participate in the ELC start second grade at the same or different level of math achievement as compared to non-participating first grade students as measured on the Math Screener for Missing Number and the Scholastic Math Inventory® (SMI)?

A two-tailed *t*-test for equal variances using *z*-scores for participating and non-participating students indicates that both groups experienced significant summer learning loss in mathematics, as shown in Table 15. Participating students started second grade below the district mean in math, with spring scores (M_z = -0.60, *SD* = 1.35) dropping over the summer to fall scores (M_z = -0.86, *SD* = 0.63), nearly 0.90 of standard deviation below the district mean on the SMI, *t*(244) = -1.95, *p* = 0.05, *d* = -0.27. Non-participating students were below the district mean in math in the spring (M_z = -0.40, *SD* = 0.98) and experienced a loss over the summer, with fall scores (M_z = -0.63, *SD* = 0.65), *t*(244) = -2.19, *p* = 0.01, *d* = -0.28. Both participating and non-participating students started second grade 0.86 and 0.63 of a standard deviation, respectively, below the district mean score on the SMI.

Overarching Question #8. Do second grade students who participate in the ELC maintain, lose, or improve in math or reading from spring to fall as compared to second grade students who were invited but chose not to attend?

Sub-question 8a. Do second grade students who participate in the ELC maintain, lose, or improve in reading from spring to fall as compared to non-participating second grade students, as measured on the Reading Curriculum-Based Measure (R-CBM)?

Table 16 reveals that neither participating nor non-participating second grade students experienced a significant learning loss or gain over the summer. A two-tailed *t*-test for equal variances using *z*-scores for participating students indicates that R-CBM scores in the spring (M_z = -0.92, *SD* = 0.90) were not significantly different in the fall (M_z = -0.88, *SD* = 0.76), *t*(198) = 0.41, *p* = 0.68, *d* = 0.06. Non-participating students also experienced no significant change on the R-CBM from spring (M_z = -1.00, *SD* = 0.71) to

fall (M_z = -1.05, *SD* = 0.61), *t*(198) = -0.60, *p* = 0.55, *d* = -0.08. Although participating and non-participating students started third grade with reading scores 0.88 and 1.05 standard deviations below the district mean, respectively, they did not lose ground over the summer.

Sub-question 8b. Do second grade students who participate in the ELC maintain, lose, or improve in mathematics from spring to fall as compared to non-participating second grade students, as measured on the Scholastic Math Inventory® (SMI)?

As shown in Table 17, participating students did not experience a significant change on the SMI from spring (M_z = -0.87, *SD* = 0.51) to fall (M_z = -0.84, *SD* = 0.49), *t*(198) = 0.35, *p* = 0.72, *d* = 0.05. Non-participating students also did not experience a significant change on the SMI from spring (M_z = 0-0.96, *SD* = 0.45) to fall (M_z = -0.88, *SD* = 0.45), *t*(198) = 1.26, *p* = 0.21, *d* = 0.18. Neither group experienced learning loss over the summer, although both started third grade 0.84 and 0.88 standard deviations below the district mean for SMI.

Overarching Question #9. Do students who participated in the ELC for at least two of the four summers show congruent or different achievement on the third grade Nebraska State Accountability assessments as compared to students who were invited but did not attend the summer program?

The NeSA assessment results are converted to a scale score system that is the same for reading and math, and the same from year to year. The performance levels are reflected in Table 18. This allows us to combine the scores of students who participated in the ELC for two or more summers and took the third grade NeSa assessments in 2012

or 2013. A two-tailed t-test assuming equal variances was used to analyze the results for this question.

Sub-question 9a. Do students who participated in the ELC for at least two of the four summers show congruent or different achievement on the third grade Nebraska State Accountability-Reading (NeSA-R) assessment as compared to non-participating students?

As shown in Table 19, students who participated in the ELC for two or more years (M = 94.51, SD = 23.12) did not have significantly different achievement on the NeSA-R than those students who were invited and chose not to attend (M = 99.95, SD = 26.70), $t(108) = 1.14$, $p = 0.26$, $d = 0.22$. Table 18 reveals that mean scores for participants and non-participants all fall in the proficiency level of meeting state standards.

Sub-question 9b. Do students who participated in the ELC for at least two of the four summers show congruent or different achievement on the third grade Nebraska State Accountability-Math (NeSA-M) assessment as compared to non-participating students?

As shown in Table 20, students who participated in the ELC for two or more years (M = 89.78, SD = 25.39) did not have significantly different achievement on the NeSA-M than those students who were invited and chose not to attend (M = 95.95, SD = 26.40), $t(108) = 1.25$, $p = 0.21$, $d = 0.24$. Table 18 shows that mean scores for participants and non-participants all fall in the proficiency level of meeting state standards

Sub-question 9c. Do low socio-economic (SES) students who participated in the ELC for at least two of the four summers show congruent or different achievement on the third grade NeSA-R as compared to non-participating low SES students?

Table 21 reflects that low SES students who participated for two or more years (M = 93.61, SD = 22.48) did not have significantly different achievement on the NeSA-R than non-participating low SES students (M = 98.84, SD = 27.81), $t(74) = 0.90$, $p = 0.37$, $d = 0.21$. Table 18 shows that mean scores for participants and non-participants all fall in the proficiency level of meeting state standards.

Sub-Question 9d. Do low socio-economic (SES) students who participated in the ELC for at least two of the four summers show congruent or different achievement on the third grade NeSA-M as compared to non-participating low SES students?

Table 22 shows that low SES students who participated for two or more years (M = 87.03, SD = 21.97) did not have significantly different achievement on the NeSA-R than non-participating low SES students (M = 91.32, SD = 32.86), $t(74) = 0.67$, $p = 0.51$, d=0.16. Table 18 shows that mean scores for participants and non-participants all fall in the proficiency level of meeting state standards.

Table 23 shows the NeSA mean scale scores for participants, non-participants, low SES participants and non-participants, the district as a whole and low SES in the district. The mean scale scores for students participating in the ELC are lower than the non-participants and the district. Although, all categories in Table 17 fall in the proficiency level of meeting state standards, as shown in Table 18, the lower mean scores of ELC participants indicates that they most needy students are being invited to attend the summer program.

Overarching Question #10. Are families satisfied with the program and do families participate in and benefit from the Family Day activities and services?

Each year in the Elementary Learning Center (ELC) Summer Program a parent survey is used to collect feedback from this key group of stakeholders. The questions are answered on a 5 point Likert scale and a mean score is calculated for each question. The scale is: 1-Strongly Disagree, 2-Disagree, 3-Not sure, 4-Agree, and 5-Strongly Agree. The parent survey can be found in the Appendix, with results for all questions in Table B1.

Sub-Question 10a. Based on data from the parent survey, were parents satisfied with the summer program and do they believe their child will be more successful in the following school year as a result of the program?

Table 24 contains the results for this sub-question from the surveys collected in 2013 and 2014. Overall satisfaction with the program had a mean score of 4.5, indicating that a majority of parents agreed strongly that they were satisfied with the ELC. On average, parents agreed that their student would be more successful in school the next year, as the mean score was 4.2.

Sub-Question 10b. Based on data from the parent survey, did families attend one or more of the three Family Days and do they feel that the events and activities were helpful to their family?

The parent survey indicates that most parents strongly agree that they attended one or more of the Family Days. As shown in Table 24, the average score was 4.5. On average, parents reported that they agree that the Family Day activities are meaningful,

with a score of 4.3. Parents agreed, on average, that the activities and resources provided on Family Days were helpful as the mean score was 4.0.

Although none of the research questions addressed other components asked about on the family survey, the results shown in Table B1 indicate that the program administrators may need to address other areas. For example, parents responded that teachers only talked to them about their child's development or behavior once or less during the program.

Summary

Questions one through four examine the changes in pre-test to post-test scores for participating students. Participating pre-kindergarten, kindergarten, first grade, and second grade students made significant growth on reading assessments from pre-test to post-test. Effect sizes ranged from 0.20 to 0.26, indicating that influence of the ELC is similar to the influence that teachers may have in a typical year (Hattie, 2009, p. 20). In mathematics participating kindergarten students made significant growth from pre-test to post-test on Quantity Discrimination and the effect size was 0.23, which is considered an average effect.

In order to answer questions five through eight, this study examined the spring and fall reading and math assessment scores for participating and non-participating students. To account for the change in norms from the end of one grade to the beginning of the next grade, scores were converted to *z*-scores using district norm data. No significant losses indicate that the students did not experience any learning loss from spring to fall.

Spring data was not available for pre-kindergarten students and therefore and analysis of changes from spring to fall could not be conducted. Instead this study examined the beginning fall scores for Letter Sound Fluency and Number Identification. Participating pre-kindergarten students were found to start kindergarten at the same levels of achievement as non-participating students.

For the remaining grade levels, the spring to fall analysis revealed that participating students experienced no significant learning loss in the area of reading. Non- participating kindergarten students did experience a significant learning loss, with and effect size of -0.85. Summer vacation had an above average negative impact on their reading as measured on the AIMSweb® Phoneme Segmentation Fluency assessment.

In mathematics, participating kindergarten and first grade students experienced significant losses, with effect sizes of -0.45 and -0.27 respectively. Participating in the Elementary Learning Center (ELC) Summer Program did not eliminate summer learning loss. Non-participating first grade students also experienced a loss in math, with an effect size of -0.28.

Question nine examines the impact of participating in the ELC for two or more summers on the achievement gap using the Nebraska State Accountability (NeSA) assessments for third grade reading and math. The students who participated in the ELC did not have significantly different achievement on the NeSA-R and NeSA-M than non-participating students. In addition, there were no significant differences between participating students in poverty and those non-participating students in poverty. Finally, the mean scores for participating, non-participating, low socio-economic status (SES) who attended and low SES who did not participate, are all with in the same proficiency

range as all district students and low SES district students. All of the mean scale scores fall in the proficiency level of meeting state standards.

The final question evaluates the satisfaction and participation of parents. Although as shown in Table B2, there are areas that need to be addressed, overall satisfaction with the program is high, with a mean score 4.5 out of 5. Parents also felt that their children would be successful in the next grade. The second part of this question looked at Family Day attendance. The average score for attending one or more Family days was 4.5, indicating that most parents agreed strongly that they had attended one or more Family Days. The meaningfulness of Family Day activities received a mean score 4.3 indicating that parents agreed the Family Day activities were meaningful. Likewise, parents agreed that the Family Day social resources and services were helpful, with a mean score of 4.0.

Organization of Remaining Chapters

This chapter provided an analysis and interpretation of the data collected for the Elementary Learning Center Summer Program. Findings were shared in relationship to the questions and data was presented in tables. Chapter five presents a clear and concise interpretation and summary of the findings. Implications of the student are discussed and recommendations for further study are described.

Table 2

Comparison of Pre-kindergarten Letter Sound Fluency Pre-test to Post-test Results

		Pre-test		Post-test				
	n	*M*	*SD*	*M*	*SD*	*t*	*p*	*d*
Letter Sound Fluency	55	9.75	9.54	11.91	11.84	2.58	0.01	0.20

Table 3

Comparison of Pre-kindergarten Number Identification Pre-test to Post-test Results

		Pre-test		Post-test				
	n	*M*	*SD*	*M*	*SD*	*t*	*p*	*d*
Number Identification	55	34.22	16.92	36.04	16.93	1.21	0.23	0.11

Table 4

Comparison of Kindergarten Phoneme Segmentation Fluency Pre-test to Post-test Results

	Pre-test		Post-test				
	n	*M*	*SD*	*M*	*SD*	*t*	*p*	*d*
Phoneme Segmentation Fluency	113	35.96	17.9	41.31	22.87	3.42	0.001	0.26

Table 5

Comparison of Kindergarten Quantity Discrimination Pre-test to Post-test Results

		Pre-test		Post-test				
	n	*M*	*SD*	*M*	*SD*	*t*	*p*	*d*
Quantity Discrimination	113	23.01	10.33	25.46	11.14	4.03	<0.001	0.23

Table 6

Comparison of First Grade Reading Curriculum-Based Measure Pre-test to Post-test Results

		Pre-test		Post-test				
	n	*M*	*SD*	*M*	*SD*	*t*	*p*	*d*
Reading Curriculum-Based Measure	114	51.43	31.46	58.24	33.20	7.11	<0.001	0.21

Table 7

Comparison of First Grade Missing Number Pre-test to Post-test Results

		Pre-test		Post-test				
	n	*M*	*SD*	*M*	*SD*	*t*	*p*	*d*
Missing Number	114	16.50	8.15	16.47	7.74	-0.05	0.96	0.00

Table 8

Comparison of Second Grade Reading Curriculum-Based Measure Pre-test to Post-test Results

		Pre-test		Post-test				
	n	*M*	*SD*	*M*	*SD*	*t*	*p*	*d*
Reading Curriculum-Based Measure	106	79.01	29.13	86.75	31.31	8.21	<0.001	0.25

Table 9

Comparison of Second Grade Scholastic Math Inventory® Pre-test to Post-test Results

		Pre-test		Post-test				
	N	*M*	*SD*	*M*	*SD*	*t*	*p*	*d*
Scholastic Math Inventory	105	252.76	145.07	266.45	154.18	1.02	0.31	0.09

Table 10

Comparison of Fall Mean Scores for Letter Sound Fluency for Participating and Non-participating Students

	Participating		Non-participating				
	n=58		*n*=58				
	M	*SD*	*M*	*SD*	*t*	*p*	*d*
Letter Sound Fluency	12.57	11.44	13.71	11.68	0.53	0.60	0.10

Table 11

Comparison of Fall Mean Scores for Number Identification for Participating and Non-participating Pre-kindergarten Students

	Participating		Non-participating				
	n=58		*n*=58				
	M	*SD*	*M*	*SD*	*t*	*p*	*d*
Number Identification	32.57	17.96	30.00	20.17	-0.72	0.47	-0.13

Table 12

Comparison of Spring to Fall Mean z-Scores for Phoneme Segmentation Fluency for Participating and Non-participating Kindergarten Students

	Spring			Fall				
	n	M_z	*SD*	M_z	*SD*	*t*	*p*	*d*
Participating Students	125	-0.58	1.35	-0.28	1.35	1.74	0.08	0.22
Non-participating	125	0.75	1.20	-0.17	0.97	-6.69	<0.001	-0.85

Table 13

Comparison of Spring to Fall Mean z-Scores for Quantity Discrimination for Participating and Non-participating Kindergarten Students

	Spring			Fall				
	n	M_z	*SD*	M_z	*SD*	*t*	*p*	*d*
Participating Students	125	0.10	2.07	-0.59	0.99	-3.37	0.001	-0.45
Non-participating	125	-0.38	0.95	-0.35	1.03	0.25	0.81	0.03

Table 14

Comparison of Spring to Fall Mean z-Scores for Reading Curriculum-Based Measure for Participating and Non-participating First Grade Students

		Spring		Fall				
	n	M_z	*SD*	M_z	*SD*	*t*	*p*	*d*
Participating Students	123	-0.85	0.73	-0.80	0.76	0.56	0.58	0.07
Non-participating	123	-0.64	0.69	-0.61	0.73	0.32	0.75	0.04

Table 15

Comparison of Spring to Fall Mean z-Scores for Mathematics for Participating and Non-participating First Grade Students

	Spring			Fall				
	n	M_z	*SD*	M_z	*SD*	*t*	*p*	*d*
Participating Students	123	-0.60	1.35	-0.86	0.63	-1.95	0.05	-0.27
Non-participating	123	-0.40	0.98	-0.63	0.65	-2.19	0.01	-0.28

Table 16

Comparison of Spring to Fall Mean z-Scores for Reading Curriculum-Based Measure for Participating and Non-participating Second Grade Students

	Spring			Fall				
	n	M_z	*SD*	M_z	*SD*	*t*	*p*	*d*
Participating Students	100	-0.92	0.90	-0.88	0.76	0.41	0.68	0.06
Non-participating	100	-1.00	0.71	-1.05	0.61	-0.60	0.55	-0.08

Table 17

Comparison of Spring to Fall Mean z-Scores for Scholastic Math Inventory for Participating and Non-participating Second Grade Students

	Spring			Fall				
	n	M_z	*SD*	M_z	*SD*	*t*	*p*	*d*
Participating Students	100	-0.87	0.51	-0.84	0.49	0.35	0.72	0.05
Non-participating	100	-0.96	0.45	-0.88	0.45	1.26	0.21	0.18

Table 18

Nebraska Reading, Math, Science Performance Levels

Performance Level	Scale Score
Exceeds the Standards	135-200
Meets the Standards	85-134
Below the Standards	0-84

Note. Adapted from the state of Nebraska website, http://goo.gl/2FUtSp

Table 19

Comparison of ELC Participants for Two or More Years and Non-participants on Third Grade NeSA-R

	Participants		Non-participants				
	n=55		*n*=55				
	M	*SD*	*M*	*SD*	*t*	*p*	*d*
NeSA-R	89.78	25.39	95.95	26.4	1.25	0.21	0.24

Table 20

Comparison of ELC Participants for Two or More Years and Non-participants on Third Grade NeSA-M

	Participants		Non-participants				
	n=55		*n*=55				
	M	*SD*	*M*	*SD*	*t*	*p*	*d*
NeSA-M	94.51	23.12	99.95	26.70	1.14	0.26	0.22

Table 21

Mean Scale Scores for NeSA-R and NeSA-M

	Mean Scale Scores	
	NeSA-R	NeSA-M
ELC Participants	94.51	89.78
Low SES ELC Participants	93.61	87.03
Non-participants	99.95	95.96
Low SES Non-participants	98.84	91.32
District- 2013-14	125.35	122.67
District Low SES	110.51	105.56

*N*ote. Low SES=low socio-economic status or eligible for free and reduced price meals.

Table 22

Parent Survey Results

Survey Question	Mean Score
I believe that my child will be more successful in school next year as a result of the program.	4.2
I was satisfied with the program as a whole.	4.5
I attended at least one Family Day	4.5
Family Day community resources were helpful to my family	4.0
Family Day learning Activities were meaningful	4.3

CHAPTER 5

Conclusions and Discussion

Purpose of the Study

The purpose of this program evaluation study is to determine the impact of the Elementary Learning Center (ELC) Summer Program on achievement for invited students who attended the three-week program compared to other invited students who chose not to attend. The goal of the summer program is to combat summer learning loss in reading and math, as well as to help reduce the achievement gap in this district.

This evaluation examined achievement data for pre-kindergarten to grade 3 students who participated in the ELC in 2013 and 2014. The data for participating students was compared to similar students who were invited and chose not to participate. Pre-test to post-test data was analyzed to determine growth within the program, and benchmark data from the spring and fall were compared in order to determine the impact on summer learning loss. The impact on the district's achievement gap was explored through the analysis of data from the Nebraska State Accountability (NeSA) assessments. Finally, parents are key stakeholders for the ELC and their involvement and engagement in the program are important to the achievement of their student. Information gathered from a parent survey is examined to determine their overall satisfaction with the program, as well as the level of benefit they perceive from the family activities and resources.

This chapter presents the conclusions and discussion from the findings of this study. In addition, the significance and implications of the study, along with recommendations for further study are presented.

Conclusions

There were ten overarching questions in this study and the following conclusions can be drawn for each question.

Overarching Question #1. Question 1 addressed the change in reading and math achievement from pre-test to post-test for participating pre-kindergarten students. Pre-kindergarten students made significant growth in reading as measured by the Letter Sound Fluency assessment while attending the Elementary Learning Center (ELC) Summer Program. There was no significant change in math for pre-kindergarten students from pre-test to post-test.

Overarching Question #2. This question examined the change in reading and math achievement for kindergarten students who attended the ELC. Kindergarten students who participated experienced significant growth in Phoneme Segmentation Fluency and Quantity Discrimination from pre-test to post-test.

Overarching Question #3. Question 3 addressed the change in reading and math achievement from pre-test to post-test for participating first grade students. These students made significant gain in words read correctly, as measured by the Reading Curriculum-Based Measure (R-CBM). However, no significant change on the Scholastic Math Inventory® (SMI) occurred for participating first grade students from pre-test to post-test.

Overarching Question #4. This question examined the change in reading and math achievement for second grade students who attended the ELC. Participating second grade students made significant gains in reading words correctly as measured by

the R-CBM while attending the ELC. Second grade students did not experience significant growth in math as shown on the SMI.

Overarching Question #5. Question 5 was used to determine if participating pre-kindergarten students started kindergarten and different levels of achievement in reading and math as compared to non-participating students. Participating students did not start kindergarten with significant differences in reading and math achievement as measured with Letter Sound Fluency and Number Identification assessments.

Overarching Question #6. This question analyzed the change in achievement for participating and non-participating students in reading and math as measured by the Phoneme Segmentation Fluency (PSF) and Quantity Discrimination (QD) assessments. Participating students were found to have no significant change in PSF, yet did experience a significant loss in QD from spring to fall. The effect size was -0.45, which could be interpreted as an indication that attending the ELC did not prevent, and possibly encouraged summer learning loss in QD.

Non-participating kindergarten students experienced a significant loss in PSF from spring to fall, with an effect size of -0.85. This indicates that the effect of summer vacation had an extremely high impact on PSF for these students. Non-participating students did not experience a significant change in QD from spring to fall.

Overarching Question #7. Question 7 examined the change in achievement for participating and non-participating first grade students in reading and math as measured by R-CBM and SMI. Neither participating nor non-participating students experienced any significant change in reading from spring to fall. It can be said that no learning loss occurred. However, in math, both groups experienced significant learning loss, with

mean scores 0.86 and 0.63 standard deviations below the district mean. Again, attending the ELC did not prevent a summer learning loss in mathematics.

Overarching Question #8. This question analyzed the change in achievement for participating and non-participating second grade students in reading and math as measured by the R-CBM and SMI. Participating and non-participating students experienced no significant change in reading or math from the spring of second grade to the beginning of third grade. Although no significant learning loss occurred, participating and non-participating students started school 0.84 and 0.88 standard deviations below the district mean for the SMI.

Overarching Question #9. Question 9 examined the impact of participating in the ELC for two or more summers on Nebraska State Accountability assessments for reading (NeSA-R) and math (NeSA-M). There was no significant difference between participating and non-participating students on either the NeSA-R or NeSA-M. When looking at low socio-economic status (SES) students, again there was no significant difference in the achievement of low SES students who participated as compared to those low SES students who were invited but chose not to participate. In addition, although mean scale scores for participating students were lower than district averages, all groups fall in the performance level of meeting state standards. Participating in the ELC did not appear to impact the district's achievement gap.

Overarching Question #10. This question evaluates parent satisfaction and participation in Family Day activities and services. It can be concluded that parents are satisfied with the program and they believe that their student will be more successful in the next grade. On average, parents agreed that they attended one or more Family Days,

and that the activities were meaningful. Families also agree, on average, that the Family Day community resources and services were helpful.

Discussion

The purpose of this study was to evaluate the impact of the Elementary Learning Center (ELC) Summer Program on achievement for invited students with similar academic needs. District stakeholders have an interest in knowing if the program combats summer learning loss or impacts the district achievement gap between students in poverty and all students. In light of the recent reductions in educational funding, stakeholders can use the achievement data, along with parent feedback, to make instructional and programming decisions with regards to the Elementary Learning Center (ELC) Summer Program.

First, all participating students did make significant growth in reading from pre-test to post-test while attending the ELC. In mathematics, no change occurred from pre-test to post-test for pre-kindergarten, first grade, and second grade participants. Kindergarten participants did experience a significant gain in Quantity Discrimination (QD). As found in research, participating in a summer learning program did have a positive impact on the knowledge and skills of participating students (Cooper et al., 2000). For district stakeholders, it can be concluded that the ELC had a positive impact on reading for those students who participated.

Another important facet of this study was to determine the impact of attending the ELC on summer learning loss. Research has shown that students in general can lose approximately one month of learning, while students in poverty may lose up to three months (Cooper et al., 1996). This study reveals that attending the ELC does help to

offset loss of achievement over summer vacation, particularly in reading. Participating students in all grades experienced no learning loss in reading from spring to fall. The effect sizes were not large, ranging from 0.06 for second grade students to 0.22 for kindergarten students. In reading, the greatest impact occurred for the younger students.

The results for mathematics were not so positive. Upon examining math results for spring to fall changes, kindergarten and first grade students were found to have experienced significant learning losses with effect sizes of -0.45 and -0.27 respectively. Math instruction for these students while attending the ELC did not prevent loss.

For district stakeholders, it can be concluded that the ELC is having a positive impact on reading for those students who participate. However, these results indicate that the impact of the ELC on math achievement is not as positive. These findings contradict a finding that summer programs may have a larger impact on math achievement than on reading (Cooper, et al., 2000). District and program administrators need to evaluate math instruction and materials used in the ELC.

Stakeholders have a vested interest in determining if attending the ELC has any impact on the achievement gap in their district. To answer this question, data from the Nebraska State Accountability assessments for reading (NeSA-R) and math (NeSA-M) in third grade was analyzed. Attending the ELC for two or more summers did not have a significant impact on NeSA-R or NeSA-M as compared to similar students who were invited and chose not to attend. In addition, students in poverty who attended for two or more summers did not reflect any significant differences on the third grade NeSA assessments than non-participating poverty students. This study did not find that attending the ELC helps to reduce the achievement gap.

Although participating students did not score higher on the NeSA assessments than non-participating students, thus not helping to close the achievement gap, the average scale scores for all participants and participants in poverty all fell in the performance level of meeting state standards. Although the mean score for students who participated in the ELC for two or more years was in the range of proficiency, their mean score was below that of non-participants and the district. This is an indication that the neediest students have been invited and participated in the summer program.

Finally, it has been found that summer learning programs that require parent involvement and participation create larger effects on student achievement. Cooper et al., (2000) found that programs that included opportunities for parent involvement had effect sizes as high d=.90. In addition, the National Center for Summer Learning reports that successful summer programs have a strong commitment to youth development, or providing learning supports so that students can focus on learning and reach district expectations (Fairchild et al., 2006). The Elementary Learning Center (ELC) Summer Program offered three Family Days and parents, guardians and siblings were invited to come and participate in fun, engaging learning activities. To support families, various community services were provided for families in need. In order to maximize the impact of Family Days on student learning, stakeholders need to know if parents attended and if they valued the activities, resources, and services. Based on the results of a parent survey the majority of parents attended one or more Family Days and thought the activities were meaningful. Some families reported that they were unsure if the resources and services were helpful to their family. Overall, parents strongly agree that they were satisfied with the ELC program.

Implications for Research

Summer learning loss and the impact of summer programming is a topic ripe for further research. The impact of summer learning loss on students in poverty and the long-term impact on the achievement gap are even more intriguing. The district stakeholders for this program could gain valuable information from further research on the long-term effects of participating in the ELC. Do participating students who demonstrated no loss or even a gain from spring to fall maintain that level of achievement over the next school year? For students who attend two or more years, what is their achievement level in reading and math as they begin middle school?

Further research could also be conducted to determine the impact of participation by other sub-groups, such as English Language Learners (ELL), males versus females, and racial groups. Do females who participate in the ELC score differently than males? How do ELL students who attend the ELC score as compared to ELL students who did not attend?

Finally, further research with parent stakeholders is warranted. Although parents express an overall satisfaction with the program, district administers could make better decisions with more information from the families who participated and especially those who chose not to have their child attend. It would be helpful to know why families declined to attend, or dropped early in the program. Are the dates of the program appropriate for families? Are families satisfied with the transportation? Would half-days or full-days be better? With more information, the district can plan a program that encourages more families to participate and therefore impact learning for even more students.

Implications for Practice

School districts continue to fight shrinking budgets and the impact of state education funding cuts that occurred as a result of the economic crisis of 2008 (Leachman & Mai, 2014). Many schools are looking for ways to reduce spending. A study by the National Association of School Administrators reported that in 2012, 35% of school administrators who completed the survey said that they were considering the elimination of summer school programs (Ellerson, 2012). With school budgets being cut, it is crucial that the benefits of a summer program outweigh the costs.

First, as stated in the limitations, students are invited to attend the Elementary Learning Center (ELC) Summer Program based on the results of the winter benchmark assessments. A lot of growth can occur between December and May, so perhaps students are being invited who no longer have an academic need. It is advisable for district administrators to review the process for inviting students to attend the summer program. Many more students with an academic need may be able to attend if those students who have grown beyond the admittance criteria are directed to other summer activities.

The stagnant achievement or significant losses in mathematics indicate a serious need to evaluate curriculum, instructional strategies and teacher effectiveness related to math instruction. In order to make decisions, district administrators need to determine if the curriculum is aligned with the assessments used to measure progress. In addition, what instructional strategies are being employed? Are teachers differentiating? How is student data used to plan instruction? Questions should be asked with regards to the amount of time dedicated to math instruction each day, and even the length of the program. Perhaps students will recoup or gain more math and reading skills if the

program is longer than three weeks. Finally, are teachers prepared to teach the math skills needed by the participating students? Perhaps professional development is needed to support curriculum implementation, or specific strategies such as small group instruction.

As mentioned above, alignment of assessments to standards and desired outcomes is also important. The assessments used in this study were used because they are current benchmark assessments being used by the district. In order to correctly determine the impact of program participation on achievement, it is vital that the data gleaned from the assessments truly reflects the learning that is desired. For example, in the area of mathematics, Scholastic Math Inventory® (SMI) is a screener that helps to define the concepts and skills that students know and can perform. Does the SMI assess the skills that students are learning while attending the ELC? Are there skills assessed that don't align with district standards? It is recommended that the host district examine assessments used for the ELC in order to ensure that appropriate data is being used to make decisions with regards to program components, or even program continuation.

Although parents indicate an overall satisfaction with the program, these stakeholders have provided valuable information. Program administrators should continue to survey parents and students as they plan and prepare the activities and resources for Family Days. In addition, parents have indicated a need for increased communication with regards to their child's behavior and development, which teachers and administrators can address.

Final Conclusions

The purpose of this program evaluation was to determine the impact of the Elementary Learning Center (ELC) Summer Program on achievement for participating students. The goal of the program is to combat summer learning loss in reading and math, as well as to help reduce the achievement gap in the district. While attending the program all students made significant gains in reading, while only participating kindergarten student made gains in mathematics.

To determine the impact of participation in program on summer learning loss, spring assessment results were compared to fall achievement. Participating students did not experience summer learning loss in reading as none of the reading assessments revealed any significant changes. Non-participating kindergarten students did experience a significant loss in Phoneme Segmentation Fluency, perhaps indicating the importance of summer learning opportunities for the earliest grades. Participating and non-participating students demonstrated summer learning loss in mathematics, indicating a need to analyze the math instruction strategies and materials used in the ELC program.

The impact of participation in the ELC on the achievement gap was analyzed by comparing third grade Nebraska State Accountability (NeSA) assessments for reading and math. Attending the ELC for two or more summers had no significant impact on NeSA assessment results or the achievement gap. The mean results of participating and non-participating students did meet proficiency on state standards.

Summer learning loss is not a new phenomenon, but it has just more recently been determined to be a contributing factor in the difference in achievement between students in poverty and their higher socio-economic peers. Successful summer learning programs

are one way to keep the learning faucet flowing (Entwisle et al., 2001). The Elementary Learning Center Summer Program has demonstrated much success in reducing summer learning loss in reading. The varied results in mathematics provide district and program administrators with opportunities for growth.

Appendix A

Table A1

XXXXX Public Schools
Year: 2013-2014

FILTER:
Demographics: Not filtering on demographics
Comparison: None
Display: Current Year
Category: All Categories

AIMSweb® Growth Table
XXXXXX Public Schools
Letter Sound Fluency
2013-2014 School Year

		Fall		Winter		Spring		
Grade	%ile	Num	LSC	Num	LSC	Num	LSC	Group ROI
K	90	1703	27	1708	51	1718	57	0.83
	75		19		43		49	0.83
	50		9		33		41	0.89
	25		2		21		32	0.83
	10		1		12		25	0.67
	Mean		*12*		*32*		*41*	*0.81*
	StdDev		*11*		*15*		*13*	*0.06*

Num = Number of Students **LSC** = Letter Sounds Correct **ROI** = Rate Of Improvement
ROI is Spring Score minus Fall Score (or Winter minus Fall) divided by 36 weeks (or 18 weeks).

ggregate (non-stratified) norms will be used when stratified norms are unavailable.

Table A2

XXXX Public Schools
Year: 2013-2014

FILTER:
Demographics: Not filtering on demographics
Comparison: None
Display: Current Year
Category: All Categories

AIMSweb® Growth Table
XXXXXX Public Schools
Phoneme Segmentation Fluency
2013-2014 School Year

		Fall		Winter		Spring		
Grade	%ile	Num	PC	Num	PC	Num	PC	Group ROI
K	90	0	-	1710	56	1721	65	0.50
	75		-		49		58	0.50
	50		-		41		49	0.44
	25		-		28		41	0.72
	10		-		9		31	1.22
	Mean		-		*37*		*48*	*0.61*
	StdDev		-		*17*		*14*	*-0.17*

Num = Number of Students **PC** = Phonemes Correct **ROI** = Rate Of Improvement
ROI is Spring Score minus Fall Score (or Winter minus Fall) divided by 36 weeks (or 18 weeks).

Aggregate (non-stratified) norms will be used when stratified norms are unavailable.

Table A3

XXXX Public Schools
Year: 2013-2014

FILTER:
Demographics: Not filtering on demographics
Comparison: None
Display: Current Year
Category: All Categories

AIMSweb® Growth Table
XXXXX Public Schools
Reading - Curriculum Based Measurement
2013-2014 School Year

		Fall		Winter		Spring		
Grade	%ile	Num	WRC	Num	WRC	Num	WRC	Group ROI
1	90	0	-	1620	109	1632	139	1.67
	75		-		80		109	1.61
	50		-		48		82	1.89
	25		-		26		58	1.78
	10		-		17		38	1.17
	Mean		-		*56*		*85*	*1.61*
	StdDev		-		*36*		*38*	*0.11*
2	90	1696	122	1692	150	1696	160	1.06
	75		98		127		141	1.19
	50		73		103		116	1.19
	25		51		78		93	1.17
	10		28		57		72	1.22
	Mean		*75*		*102*		*116*	*1.14*
	StdDev		*36*		*36*		*35*	*-0.03*
3	90	1187	150	1189	175	1186	186	1.00
	75		129		148		162	0.92
	50		98		124		140	1.17
	25		74		99		112	1.06
	10		51		76		89	1.06
	Mean		*100*		*123*		*136*	*1.00*
	StdDev		*39*		*38*		*39*	*0.00*

Table A4

SMI Student Performance Data Table

Grade	Below Basic	Basic	Proficient	Advanced
2	At or Below 100Q	100Q to 215Q	220Q to 420Q	At or Above 425Q
3	At or Below 215Q	220Q to 395Q	400Q to 520Q	At or Above 525Q
4	At or Below 350Q	355Q to 465Q	470Q to 720Q	At or Above 725Q
5	At or Below 550Q	555Q to 675Q	680Q to 820Q	At or Above 825Q
6	At or Below 640Q	645Q to 775Q	780Q to 950Q	At or Above 955Q
7	At or Below 700Q	705Q to 885Q	890Q to 1040Q	At or Above 1045Q
8	At or Below 800Q	805Q to 1025Q	1030Q to 1140Q	At or Above 1145Q
9	At or Below 865Q	870Q to 1095Q	1100Q to 1220Q	At or Above 1225Q

The Performance Levels for SMI were developed for each grade in 2009 based on a national study involving three states and the national Performance Levels from the TerraNova, Second Edition (CAT/6).

Appendix B

Parent Survey for Elementary Learning Center Summer Program Summer 2014

Student's name:		Child's DOB:
Your name(s):		
Grade in 2013-14:	School Building:	Classroom or Teacher:

The purpose of this survey is to learn more about your experiences with the Elementary Learning Center Summer Program. Your participation is completely voluntary. If you choose not to complete this survey, or not to answer particular questions, it will not affect you or your child's participation. Your information is very important, so please be as accurate as possible. This survey should take approximately 5-10 minutes.

A. Elementary Learning Center Summer Program

1. Please indicate your agreement with each of the following items using the scale provided.

How much do you agree or disagree with each statement:	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
a. I was satisfied with the hours of the program.	1	2	3	4	5
b. I was satisfied with the length of the program.	1	2	3	4	5
c. I was satisfied with the program as a whole.	1	2	3	4	5
d. The staff were excellent (caring, reliable, skilled).	1	2	3	4	5
e. My child enjoyed attending the program.	1	2	3	4	5
f. I am satisfied with the level of communication I had with my child's teacher.	1	2	3	4	5
g. I was informed about my child's progress.	1	2	3	4	5
h. I believe that my child will be more successful in school next year as a result of the program.	1	2	3	4	5

2. How often did these occur during the ELC program?

During the program:	Never	Once during the program	Twice during the program	Almost every week	At least weekly
a. Your child's teacher talked to you about your child's development.	1	2	3	4	5
b. Your child's teacher talked to you about your child's behavior.	1	2	3	4	5

d. What other ways were you involved in your child's school or classroom during the program? Please describe:

3. Please respond with your rating of Family Day activities.

During the program:	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
a. I attended at least one Family Day	1	2	3	4	5
b. Family Day community resources were helpful to my family	1	2	3	4	5
c. Family Day learning activities were meaningful	1	2	3	4	5

4. Please share one or two examples that the ELC program could do better?

_____

_____

_____

_____

_____

_____

5. Please share one or two examples that you liked about the ELC program?

_____

_____

_____

_____

_____

_____

Thank you for taking the time to complete this survey. Your participation is a valuable contribution to the ELC summer program. If you have any questions about the survey please contact:

Table B1

Entire Survey Results for 2013 and 2014

Survey Question	Mean Score 2013	2014
1=Strongly Disagree, 2=Disagree, 3=Not Sure, 4=Agree, 5=Strongly Agree		
I was satisfied with the hours of the program.	4.5	4.42
I was satisfied with the length of the program.	4.4	4.35
I was satisfied with the program as a whole.	4.5	4.46
The staff was excellent (caring, reliable, skilled).	4.6	4.61
My child enjoyed attending the program.	4.6	4.56
I was able to communicate with my child's teacher.	4.1	4.25
I was informed about my child's progress.	3.4	3.93
I believe that my child will be more successful in school next year as a result of the program.	4.1	4.23
My child believes that school will be a fun place to learn.	4.5	4.51
The following questions asked about frequency: *1=Never, 2=Once during the program, 3=Twice during the program, 4=Almost every week, 5=At least weekly*		
Your child's teacher talked to you about your child's development.	1.9	1.75
Your child's teacher talked to you about your child's behavior.	1.7	1.59
Please respond with your rating of Family Days. *1=Strongly Disagree, 2=Disagree, 3=Not Sure, 4=Agree, 5=Strongly Agree*		
I attended at least one Family Day	4.2	4.76
Family Day community resources were helpful to my family	3.8	4.21
Family Day learning Activities were meaningful	4.1	4.45

Note. 1=Strongly Disagree, 2=Disagree, 3=Not Sure, 4=Agree, 5=Strongly Agree

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