

A QUANTITATIVE STUDY ON THE EFFECTS OF A SUMMER LITERACY
CAMP TO HELP MITIGATE SUMMER LEARNING LOSS FOR STUDENTS
ENTERING GRADES 1-5

A dissertation submitted in partial fulfillment
of the requirements for the degree of

DOCTOR OF EDUCATION

to the faculty of the

DEPARTMENT OF ADMINISTRATIVE AND INSTRUCTIONAL LEADERSHIP

of

THE SCHOOL OF EDUCATION

at

ST. JOHN'S UNIVERSITY

New York

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Date Submitted: November 10, 2020

Date Approved: January 21, 2021

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ABSTRACT

A QUANTITATIVE STUDY ON THE EFFECTS OF A SUMMER LITERACY CAMP TO HELP MITIGATE SUMMER LEARNING LOSS FOR STUDENTS ENTERING GRADES 1-5

Patricia O'Regan

The purpose of this study is to see if a summer literacy camp was able to help mitigate summer learning loss for students entering grades 1-5. Students attended a five-week summer program that focused on literacy with a STEM component. Some of the students who attended were economically disadvantaged, some were English Language Learners (ELLs), some were both and others were neither. The one thing they all had in common was that they were all reading below grade level. This study collected reading data from the spring to the fall to see if the summer literacy camp was able to help mitigate summer learning loss. The themes of literacy, summer learning loss, social justice, poverty, English language learners, and the Next Generation Science Standards (NGSS) and the role each one played in the summer literacy camp were all discussed. This study can be used as a blueprint for other school districts on how to use community resources, Title I, and Title III monies in order to mitigate summer learning loss and improve student achievement.

DEDICATION

This has been an extended journey that was definitely worth the wait. Thank you to Patrick and who helped me start the journey and to Kristen and Josh for pushing me to finish it! This journey would not have been possible with the unwavering support of my family, who gave me the support and encouragement that I needed along the way. I dedicate this work to my husband, Jim, who spent countless days taking care of our five children on his own. He never complained and selflessly gave me the time I needed to dedicate to my coursework and this dissertation. I also dedicate this work to my mother, Carmel. You taught me how to be a strong woman and always encouraged me to be my best self. You pushed me when you knew I could do better and insisted that I could accomplish anything with hard work and persistence. Thank you for spending many nights and weekends at my house and folding endless amounts of laundry! My children are so lucky to have you in their lives.

Finally, I dedicate this work to my 5 amazing children, Brendan, Patrick, Kate, Meghan, and Molly. I know it was not easy watching me leave to go to school, but you (almost) never complained and encouraged me when you knew I needed it. Meghan and Molly were a wonderful reason to put my work on hold for a while, and I cannot thank Brendan, Patrick, and Kate for always helping them, teaching them, and guiding them. I hope my journey inspires you like you have inspired me. Remember that you can do anything you put your mind to with a little hard work and perseverance. I know that you will all do great things because your hearts and minds are always in the right place. In addition to my own children, I dedicate this work to the children at SEM who along with the amazing staff inspire me to always put the needs of children first.

ACKNOWLEDGEMENTS

Thank you to Dr. Anthony Annunziato, my mentor, for providing continual guidance and direction throughout this extended process. I appreciate your patience and support as my personal life journey set me back a number of times.

I would also like to acknowledge the members of my committee, Dr. Richard Bernato and Dr. John Campbell. Your insights into how to conduct research and your knowledge of the existing body of research were humbling and very much appreciated. Working with you and learning from you have been a great privilege.

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CHAPTER 1: INTRODUCTION

In the United States, summer vacation offers a time-honored respite from schoolwork and formal education, but it is also accompanied by a regression in skills known as “summer learning loss” or the “summer slide.” Summer learning loss is a well-established phenomenon (Alexander, Entwistle, & Olson, 2007; Allington et al., 2010; Cooper, Nye, Charlton, & Greathouse, 1996; Kim & Quinn, 2014), occurring each summer and taking a toll on reading skills that students worked hard to acquire during the school year. Summer learning loss refers to the loss of knowledge and academic skills over summer months when students are out of school, and is widely recognized as a pervasive and significant problem in United States education (Zaromb, Adler, Bruce, Attali, & Rock, 2014).

While each school year is full of opportunities for all children to learn and grow as readers, the same is not necessarily true during the summer months (Alexander et al., 2007). During summer vacation children experience some learning loss. In a meta-analysis, Cooper, Nye, Charlton, and Greathouse (1996) noted a decline in achievement based on student scores at the end of summer when compared to the beginning of summer/end of past school year. As their study exemplified, students who are economically disadvantaged return to school with an even wider gap, as summer slide disproportionately affects children from poverty. Children from low-income families are particularly vulnerable to the negative effects of summer learning loss, which may result from limited access to print in their homes and communities (Neuman & Celano, 2001) or minimal family and community enrichment experiences, in stark contrast to the

opportunities and resources available to their counterparts from middle or higher income families (Alexander et al., 2007).

There are many factors impacting student achievement that are out of control of schools, such as community home life and parental involvement. It is unlikely that school alone will be able to compensate for the limited learning opportunities for economically disadvantaged students if the time-honored commitment to summer vacation is maintained in public schools. However, the research into the achievement gap and summer regression suggest that intervention may make a difference in the achievement gap. Education scholars suggest that early intervention is the most effective way to close the achievement gap because without it, the gap widens. Downey, von Hippel, and Broh (2004) analyzed the Early Childhood Longitudinal Study data and found that economically disadvantaged children fell about 2.5 months behind more advantaged students during the summer months between kindergarten and Grade 1. Hayes and Grether (1983), using achievement data from the New York City public schools, estimated that as much as 80% of the reading achievement gap that existed between economically advantaged and disadvantaged students by sixth grade could be attributed to summer setback. In schools with a high a percentage of economically disadvantaged students, it may be difficult to implement and fund a program that can impact student achievement, but the research is clear: students who are economically disadvantaged need to participate in a summer program in order to stop summer learning loss and close the achievement gap.

Purpose of the Study

The purpose of this study is to examine data in order to determine the impact and effectiveness of a summer literacy camp. Most school districts create their calendar based on the antiquated agrarian calendar, which results in students taking a hiatus from learning in the summer that results in summer learning loss or the summer slide. Today, about 3% of American livelihood is tied to the agricultural cycle, but the school calendar has not changed (Cooper, Nye, Charlton, & Greathouse, 1996). This results in lower scores on the benchmark assessments given each fall when compared to those given in the spring of the prior school year.

Summer learning loss has a larger impact on students who are economically disadvantaged. Research on summer learning loss has provided reliable evidence that the reading achievement of economically disadvantaged students slides back a few months every summer (Allington, et al., 2010). The school where the intervention for the current study took place is one of four public elementary schools in a Long Island school district. Of the four, it has the most economically disadvantaged students and the highest concentration of English Language Learners. It is the only school in the district that qualifies for federal Title I funds based on the number of students who receive free and reduced lunch. This number hovers right around the 50% mark. Using Title I money, the school had been inviting students to a summer reading club since the summer of 2013 in hopes of mitigating summer learning loss. In recent years, the enrollment of the club declined with only a handful of students attending. In the summer of 2018, the principal visited the summer ENL club at the high school at the request of the ENL director. In wanting to enhance the summer reading club and build enrollment, the principal

partnered with the ENL director and relaunched a summer literacy camp using Title I money, Title III money, and two community partnerships. The purpose of the summer literacy camp was to prevent summer learning loss in hopes of student reading levels remaining intact when tested in the Fall as compared to the previous Spring using the same benchmarks.

In full disclosure, the researcher is also the principal of the school in which the camp took place. At the conclusion of the summer literacy camp, the researcher switched research topics in order to take a deeper dive into the research on summer learning loss and gauge the effectiveness of the summer literacy camp. The data is historical data and were looked at in aggregate form in order to assess the effectiveness of the program. No decisions about individual students were made based on the outcomes of this study. The information was used to see how well the summer program worked in order to position students for school in September.

During the summer in which data were collected, the summer literacy camp was made up of 78 students in grades K-4. Of those 78 students, 64 were economically disadvantaged and 37 were English Language Learners. Thirty five of the students were economically disadvantaged and ELLs. Students were invited to the summer literacy camp based on their March reading levels. A series of invitations were sent out in order to have full classes on each grade level. Five classes were set up; one each for student entering grades one through five. Each class had two teachers; a classroom teacher and an ENL (English as a New Language) teacher. Also on staff were a library/media specialist, a STEAM consultant, a social worker, and a nurse. Reading data from students who attended the summer literacy camp was compared with those who were invited to attend

the camp but did not attend. The results of this study can be used to expand and make adjustments to the summer literacy camp. School districts can use this study as a blueprint to create their own summer literacy camp utilizing grant money and community partnerships.

Theoretical Framework

Constructivism is an approach to learning that positions the student to be active and is a process of constructing knowledge rather than acquiring it. The learner brings past experiences and cultural factors to a current situation and each person has a different interpretation and construction of the knowledge process. Vygotsky's (1978) theory is one of the foundations of constructivism. It asserts three major themes including Social Interaction, the More Knowledgeable Other (MKO), and the Zone of Proximal Development (ZPD). Lucy Caulkins is a constructivist whose foundational tenets include: connecting with each student, building a community in the classroom encouraging students to take ownership of the classroom and their reading, allowing students to choose their own topics to read about, reading aloud to students, and a workshop approach to reading and writing (Smith, 2006). Much of the work that the study school does with reading is based on the work of Caulkins and the Teachers College Reading and Writing Project (TCRWP). This work was the foundation of the summer literacy camp. Each class worked on relationship building as well as building a classroom community. Students ate two meals together each day and enjoyed spending time with their teachers in a more relaxed setting during recess. Each day consisted of a read aloud, guided reading, and independent reading in which students choose the books that they read. Simply increasing the frequency and time spent practicing the act of

reading leads to increases in reading achievement by developing accuracy, fluency, and comprehension (Allington, 2006; Guthrie et al., 2004).

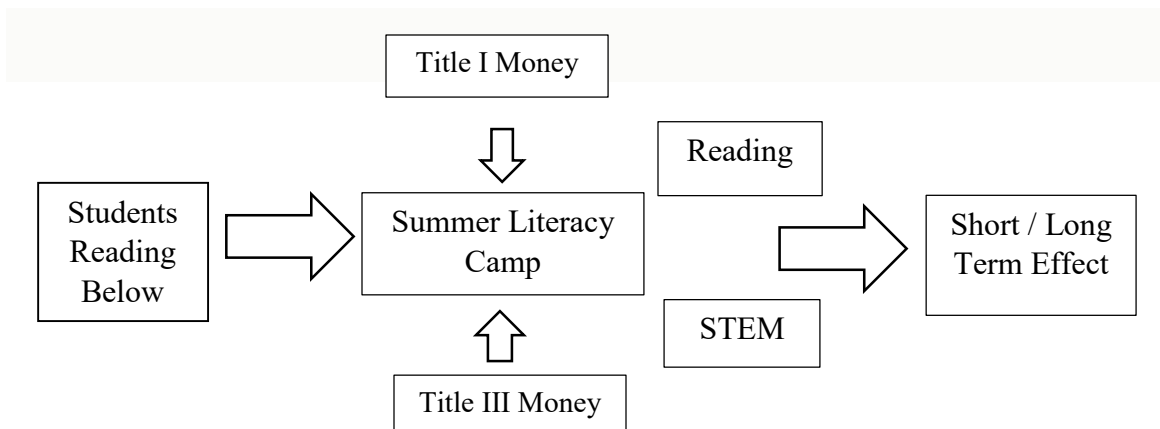
Connection with Social Justice

This study is aimed at closing the gap in learning for students who are identified as being economically disadvantaged. Children do not have a choice as to their economic status when they are born, but they should have the right to maintain the important reading skills that they learn over the course of a school year. School districts and communities need to come together to provide economically disadvantaged students with programs and supports during the summer months in order to level the playing field between these students and their economically advantaged peers.

Conceptual Framework

Figure 1 represents the conceptual framework.

Figure 1. Conceptual framework.



Students were chosen to attend the summer literacy camp based on their spring reading levels. Levels A-J were assessed using the Fountas and Pinnell (F&P) benchmark reading assessment and levels K and above were assessed using Jennifer Serravallo's Independent Reading Assessment (IRA). Classroom teachers and reading teachers

recommended students to the program and then students were chosen based on their reading levels or, for kindergarten students, the number of sight words that they had mastered at the time. The school receives Title I money because of the number of students who receive free and reduced lunch. The school receives Title III money in order to assist the ELLs. The combination of the Title I and Title III monies were used to cover the cost of staff and materials needed for the camp. A daily schedule was created based on literacy components incorporated each day and each week featured a different STEM theme. The purpose of this study is to look at the short term effects of the camp in order to determine if it is possible to mitigate summer learning loss through this summer literacy camp which could then lead to potential positive long term effects. Reading levels from benchmark assessments as well as aimswebPlus scores were analyzed in order to see the effect the summer literacy camp had on students who attended the camp versus those who were invited to attend but declined the invitation.

Significance/Importance of the Study

The work we do in school during the school year has a positive impact on learning for all of our students. Achievement gaps by family socioeconomic status and race/ethnicity widen more during the summer months than during the school year, with the differences being more pronounced in reading (Heyns, 1978). Most schools still operate on an antiquated calendar that was designed around harvesting seasons. Each summer, students take a two month break from learning. All students, regardless of their socioeconomic status, lose ground in math. Students who are economically disadvantaged also lose ground in reading. Because these students need time to make up what they lost, the gap grows wider each year for them. The negative effects of summer increase with

increases in students' grade levels thus compounding the issue each year and never giving students the time they need to close their achievement gap (Zaromb et al., 2014).

School districts need to provide programs and resources for students who come from low SES homes in order to stop this cycle. The results of this study will show the importance of having a summer program for economically disadvantaged students. It will provide an outline of what that program can look like and suggestions for how district leaders can reallocate Title I and Title III monies and create community partnerships in order to create summer learning experiences for students that will mitigate summer learning loss.

Research Questions

The study will be guided by the following questions:

1. How do students who attended the summer literacy camp compare to those who were invited to the camp but did not attend in regard to reading levels and aimswebPlus scores?
2. Did the summer literacy camp impact the following groups of students: students from a low SES home and students who are identified as ELLs (English Language Learners)?

Hypotheses

H_0 = There will be no difference in reading scores based upon the intervention. (Pre-test versus Post-test)

H_0 = There will be no difference in reading scores based on different groups of students. (Pre-test versus Post-test)

H_1 = There will be a difference in reading scores based upon the intervention. (Pre-test versus Post-test)

H_1 = There will be a difference in reading scores based on the different groups of students. (Pre-test versus Post-test)

Design and Methods

This study used a quasi-experimental design collecting pre and posttest data. Reading levels using Fountas and Pinnell benchmark assessment system (for levels A-J) and Jennifer Serravallo's Complete Comprehension (for levels K-N) were analyzed to see if summer literacy camp participants scored higher than their counterparts who were invited to but did not attend the program. Reading levels were looked at from Spring 2019 to Fall 2019. Nationally normed aimswebPlus scores were also analyzed from Spring 2019 to Fall 2019. Data were disaggregated to narrow in on economically disadvantaged students and English Language Learners.

Definition of Terms and Acronyms:

Agrarian calendar – a calendar that is tied to the Sun, and therefore tells you the right times of the year to plant and harvest crops. (McMullen & Rouse, 2012)

Balanced literacy – a balanced approach to teaching literacy that includes the read aloud, guided reading, shared reading, independent reading, and word study. (Fountas & Pinnell, 1996)

Economically disadvantaged – Economically disadvantaged students are those who participate in, or whose family participates in, economic assistance programs, such as the free or reduced-price lunch programs, Social Security Insurance (SSI), Food Stamps, Foster Care, Refugee Assistance (cash or medical assistance), Earned Income Tax Credit (EITC), Home Energy Assistance Program (HEAP), Safety Net Assistance (SNA), Bureau of Indian Affairs (BIA), or Family Assistance: Temporary Assistance for Needy

Families (TANF). If one student in a family is identified as low income, all students from that household (economic unit) may be identified as low income (NYSED).

ENL – English as a new language.

ELL – English Language Learners (ELLs) are those who, by reason of foreign birth or ancestry, speak or understand a language other than English and speak or understand little or no English, and require support in order to become proficient in English and are identified pursuant to Section 154.3 of Commissioner's Regulations (NYSED).

F&P – Fountas and Pinnell reading benchmark assessment system.

NAEP – National Assessment of Education Progress.

NGSS – Next Generation Science Standards.

Phonemic awareness - The ability to distinguish, produce, remember, and manipulate the individual sounds (phonemes) in spoken words (Armbruster, Lehr, & Osborn, 2008).

Phonics - Knowledge of the predictable correspondences between phonemes and graphemes (the letters and letter combinations that represent phonemes) (Armbruster, Lehr, & Osborn, 2008).

Reading fluency - Reading text with sufficient speed and accuracy to support comprehension (Rasinski, Blachowicz, & Lems, 2012).

SES – *Socioeconomic status*- Students receiving or not receiving free/reduced meals at school (NYSED).

Summer Learning Loss / Summer Slide - The difference between reading scores on a common assessment administered in both the spring and the fall. (Zaromb, Adler, Bruce, Attali, & Rock, 2014)

STEM – Science, technology, engineering, and math.

Text comprehension - Requires comprehension skills and strategies, background knowledge, and verbal reasoning (Armbruster, Lehr, & Osborn, 2008).

Title I – “Title I of the Elementary and Secondary Education Act of 1965. . . The purpose of this title is to ensure that all children have a fair, equal, and significant opportunity to obtain a high-quality education and reach, at minimum, proficiency on challenging State academic achievement standards and state academic assessments” (U.S. Department of Education, 2004).

Title III – a part of the Elementary and Secondary Education Act of 1965 (ESEA), as amended by the Every Student Succeeds Act of 2015 (ESSA). The purpose of Title III is to help ensure that English learners (ELs) attain English language proficiency and meet state academic standards (NYSED).

Vocabulary – knowledge of the individual word meanings in a text (Armbruster, Lehr, & Osborn, 2008).

Whole language - a philosophy of teaching reading that is based upon the premise that learning to read comes naturally. It emphasizes learning whole words and phrases by encountering them in meaningful contexts rather than by phonics exercises (National Education Commission, 1994).

YRE – Year Round Education

CHAPTER 2: LITERATURE REVIEW

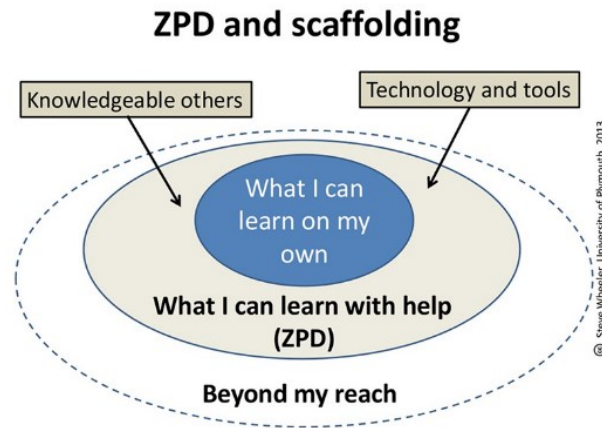
In this section, the theoretical and conceptual frameworks are introduced. This literature review begins with background information on summer learning loss and defines the multi-dimensional construct that is examined through this study. After, a review of the empirical evidence surrounding reading, summer learning loss, poverty, federal grants, English language learners, and the Next Generation Science Standards are examined. Summer learning loss and its possible contribution to student learning gaps are discussed.

Theoretical Framework

Constructivism is about learning as an active, contextualized process of constructing knowledge rather than acquiring it. The learner brings past experiences and cultural factors to a current situation and each person has a different interpretation and construction of the knowledge process. Vygotsky's (1978) theory is one of the foundations of constructivism. It asserts three major themes:

1. Social interaction plays a fundamental role in the process of cognitive development. Vygotsky felt social learning precedes development and stated: *Every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level; first, between people (interpsychological) and then inside the child (intrapsychological)* (Vygotsky, 1978 page 57).
2. The More Knowledgeable Other (MKO). The MKO refers to anyone who has a better understanding or a higher ability level than the learner, with respect to a particular task, process, or concept. The MKO is normally the teacher, or an older adult, but the MKO could also be a peer, a younger person, or even information from the internet.
3. The Zone of Proximal Development (ZPD). The ZPD is the distance between a learner's ability to perform a task under adult guidance and/or with peer collaboration and their ability to solve the problem independently. According to Vygotsky, learning occurs in this zone.

Figure 2. Vygotsky's zone of proximal development. From "Lev Vygotsky's Sociocultural Theory" by S.A. McLeod, 2018, Simply Psychology.



The theoretical framework for the summer literacy camp was based on Vygotsky's theory of constructivism which argues that cognitive abilities are socially guided and constructed. Vygotsky's (1978) theory asserts three major themes including Social Interaction, the More Knowledgeable Other (MKO), and the Zone of Proximal Development (ZPD). Cognitive development stems from social interactions from guided learning within the zone of proximal development as children and their partners co-construct knowledge (Wertsch & Tulviste, 1992).

Knowing that social interaction plays a fundamental role in the process of cognitive development, it was important to incorporate many opportunities for social interaction into the summer literacy camp. Students started the day by eating breakfast together and sharing stories with one another. Throughout the day, students worked together in reading partnerships to share the strategies they used during independent reading. Older students took turns reading to younger students and bonding over books. Students also met in small groups to conduct science experiments and discuss their findings. Students turned and talked throughout the day, sharing their learning and

having the opportunity to eat lunch together where conversation was encouraged and facilitated. Teachers took students outside each day for recess where students played games together and developed relationships with their classmates and teachers in hopes of giving them more confidence and excitement to start the new school year.

The summer literacy camp was designed in a way to help students bond with both peers and teachers. School bonding has theoretical and empirical support as a critical element in the developmental experience of children (De Laet, et al., 2015). School bonding, or school connectedness, is characterized by close relationships with those at school and an investment in school and doing well (Catalano, Haggerty, Oesterle, Fleming, & Hawkins, 2004). One of the goals of the summer literacy camp was to enhance school bonding in order for students to have an overall better school experience. Studies have demonstrated the importance of school bonding in contributing to positive outcomes like academic performance and social competence (Catalano et al., 2004). Some of the students who attended the summer literacy camp were placed with the same teacher in September. The opportunity to develop a positive relationship prior to the start of a school year was an added benefit for some students. Perceived support from teachers protects children from the general decrease in behavioral school engagement (De Laet et al., 2015).

Students who attended the literacy camp engaged in social interactions throughout the day. Students worked together in reading partnerships and small groups. Students also interacted with several teachers throughout the day who would be considered the MKO in respect to reading and science. Each class had a classroom teacher and an ENL teacher who worked together often creating smaller student to

teacher ratios in the class. Students also worked with a library media specialist as well as a STEAM consultant teacher twice a week who were able to lend their expertise by creating hands on learning activities in order to solidify students' learning in science.

The Zone of Proximal Development refers to the skills that are too difficult for a child to master on his/her own but can be done with guidance and encouragement.

Teachers met with students in small groups for guided reading in which teachers worked at the students' instructional level. The instructional level is in the Zone of Proximal Development.

Lucy Calkins is a constructivist who has modeled her work off of the research of scholars such as Marie Clay, Richard Allington, Donald Graves, Fisher and Frey, Nancy Atwell, Patricia Cunningham, Jim Cipelewsk, and Keith Stanovich. Her foundational tenets include: connecting with each student, building a community in the classroom encouraging students to take ownership of the classroom and their reading, allowing students to choose their own topics to read about, reading aloud to students, and a workshop approach to reading and writing (Smith, 2006). Hearing a story read aloud invites students to lose themselves in the story, and as Calkins (1999) describes, "Reading aloud is the single most important factor to help children become proficient, avid readers" (p. 25). This is true for students of all ages, not just those who cannot yet read on their own. Calkins supports reading aloud for support of the reading and writing workshop as well as in support of the content areas. Reading aloud in the content areas can give students an overview of the subject so that students are in a better position to learn more and can model learning processes by thinking through the reading aloud for students.

These readings can activate students' prior knowledge on a subject before moving to more complex texts on the subject (Smith, 2006).

Calkins (1999) also believes that it is important for students to work in the Zone of Proximal (ZPD), which is one of Vygotsky's themes of constructivism. The ZPD is the distance between a learner's ability to perform a task under adult guidance and/or with peer collaboration and their ability to solve the problem independently. This is why Calkins promotes the importance of students reading at their independent reading level: the level in which the students can take the strategies the teachers have taught them and apply them to books they are reading independently. Reading workshop, including reading independently at the independent reading level, reading aloud, social interaction, and student choice are all part of the balanced literacy approach used in the district that falls in line with Vygotsky's three major themes of constructivism. These approaches to reading were carried over into the summer literacy camp.

The district in which the school is located has based their Units of Study for Reading and Writing on the work that Calkins (1999) has done with the Teachers College Reading & Writing Project. Included in those units is small group reading, which is based off of the work of Jennifer Serravallo. Jennifer Serravallo is a former staff developer for TCRWP who has written several books about small group reading including Teaching Reading in Small Groups and Reading Strategies. She has also designed a reading assessment, *Complete Comprehension*, that is used for readers who are level J and above. Levels A-K are assessed using the Fountas and Pinnell benchmark reading assessments. The district uses the Fountas and Pinnell and Complete

Comprehension assessments as their benchmarks to report reading levels in September, December, March, and June.

Social Justice

The United States spends more on students in high-income districts than on students in low-income districts. This can be attributed to the fact that the revenues for K-12 Education mainly come from local property taxes (Friedman, Hampton-Sosa, & Friedman, 2014). It is exactly the opposite in most countries, where more is spent in poor districts than in rich districts (Council on Foreign Relations, 2013). Because there is no mandate for education in the US Constitution, education is the responsibility of each state. However, poverty is concentrated. The result is that students with higher SES and wealth attend schools that are better funded, and students with lower SES attend schools that are funded at lower levels. Students from poverty often require more interventions and supports, and these programs and requirements cost more money. This requires rethinking the way education is funded. Instead of funding looking different for each district depending on the wealth of the local economy, funding may need to be centralized. This would allow money to be distributed so that each child has the same opportunities in order to succeed. The success of children should not be predicated on their zip code, because this system simply perpetuates gaps in opportunity and achievement.

Rawls's (1999, 2001) theory of social justice attempts to create a framework with which to assess and guide a society as it seeks to be fair and equitable. Rawls argues, "Justice is the first virtue of social institutions, as truth is of systems of thought...laws and institutions no matter how efficient and well-arranged must be reformed or abolished

if they are unjust” (1999, p. 3). Social justice is concerned with equality or equal opportunity in society for each individual. According to Rawls (1999), the rights and privileges of the individual cannot be infringed upon by any entity, not even the “welfare of the society as a whole” (p. 3). Justice is essential in a society in order to distribute resources equally so that opportunities can be the same for everyone.

Miller (2001) writes that social justice is a virtue, and it is a theory that helps us to be critical of “our institutions and practices in the name of greater fairness. Miller (2001) distills the concept of social justice to its barest form: “how the good and bad things in life should be distributed among the members of a human society” (p. 1). In order for this equal distribution to take place, it “requires us to *treat people as equals*” and we must understand justice as “*what people would agree to in advance of knowing their own stake in the decision to be reached*” (Miller, 2001, p. 22). Miller (2001) identifies a “preliminary list of advantages [that] must include at least the following: money and commodities, property, jobs and offices, education, medical care, child benefits and childcare, honors and prizes, personal security, housing, transportation, and leisure opportunities” (p. 7).

Social justice is not about everyone having the same and being the same. It is about everyone having the same opportunities. It is then up to individuals to decide how to take advantage of those opportunities in order to better themselves and give themselves an advantage over others. Bull (2008) notes that justice does not mean that everyone gets what s/he wants, but it does mean that there will be fairness of opportunity and access. For justice to exist, it is essential that all people have access to the same offices and opportunities (Rawls, 1999).

Most people would agree that access to a quality education should be a right for all children in the United States. The quality of education differs across school districts, communities, counties, and states, so access to quality education is a manifestation of social justice. On the other hand, families and children who are not in the position to access quality education, because they live in impoverished communities, experience school injustice. Schools that offer quality education, especially in the face of tremendous obstacles, i.e., educating students with large concentrations of poverty, participate in social justice as they challenge the way inequalities and burdens are distributed in society.

The summer literacy camp was designed to help students who are identified as economically disadvantaged mitigate summer learning loss in hopes of closing the achievement gap. This camp would not have been possible without the use of Title I funds. Title I is built on the understanding that more money can help make a greater impact on a child's education and that children from poverty need more academic support that, in turn, cost more money (Coleman, 1966).

Literacy

From reading a street sign or a phone bill to reading a textbook for learning purposes, reading is an essential skill necessary for daily living. Being literate allows someone to participate fully in society (Allington, 2012; Lind, 2008). Reading is the basis for the acquisition of knowledge, cultural engagement, democracy, and success in the workplace (Castles, Rastle, & Nation, 2018). For decades, there has been debate over how children should be taught to read with the pendulum swinging from a phonics approach to a whole-language approach creating what is known as the "reading wars".

In 1997, Congress convened the National Reading Panel to settle the debate. Its report, released in 2000, delivered a body blow to the whole-language theory by delineating five “essential components” of effective reading programs based squarely upon a consensus of SBRR (scientifically based reading research) studies. According to the report, the essential components of reading instruction are phonemic awareness, phonics, reading fluency, vocabulary, and text comprehension. These components are all part of a balanced literacy program. A balanced literacy program strikes a balance between both whole language and phonics. The strongest elements of each are incorporated into a literacy program that aims to guide students toward proficient and lifelong reading. Balanced literacy focuses on presenting both skills-based teaching and meaning-based teaching during literacy blocks. There are five different components of balanced literacy: the read aloud, guided reading, shared reading, independent reading, and word study. Balanced literacy programs include community, home and library involvement as well as structured classroom plans and the use of activities, such as read alouds, guided reading, shared reading, and independent reading and writing (Fountas & Pinnell, 1996).

Research suggests that teachers need to: a) emphasize reading, writing, and literature by providing long, uninterrupted periods of successful reading every day, b) create a positive, reinforcing, cooperative environment in the classroom, c) set high but realistic expectations for all students, and d) thoroughly integrate reading and writing across the curriculum (Asselin, 1999; Pressley & Allington, 1998). Uninterrupted periods of successful reading take place during independent reading in which children increase stamina and volume. There is research evidence which suggests that volume of reading is

linked to attaining higher-order literacy proficiencies (Allington, 2012; Brozo & Sutton Flynt, 2008; Cipielewski & Stanovich, 1992).

Anderson, Wilson, and Fielding (1988) researched the relationship between the amount of reading done and reading achievement. They found that the amount of time reading was the best predictor of reading achievement, including a child's growth as a reader from the second to the fifth grade. Throughout the changes in "best-practices" in reading instruction, research has continually identified volume of reading as a key contributor to achievement in reading (Allington, 2012; Allington et al., 2010; Anderson et al., 1988; Cunningham & Stanovich, 1998; Guthrie, Schafer, & Huang, 2001; Taylor et al., 1990; Topping & Samuels, 2007). Simply increasing the frequency and time spent practicing the act of reading leads to increases in reading achievement by developing accuracy, fluency, and comprehension (Allington, 2006; Guthrie et al., 2004).

Cunningham and Stanovich (2003) underscored the power of reading by stating "even the student with limited reading and comprehension skills will build vocabulary and thinking skills through reading" (p. 37). A number of studies have added to the evidence of the power of reading volume by citing its role in the growth of reading comprehension, vocabulary development, and other areas. The amount of reading students engage in has a reciprocal effect.

The earlier and more often students read, the better reader they become; which elicits positive feedback, so that students read even more (Cunningham & Stanovich, 2001). The more these students read, the more words they encounter, and the better readers they become. Cullinan (2000) reviewed the research on the effects of independent reading concluding that independent reading, defined as the reading students choose to

do, supports learning and school achievement. Students at the study school are expected to read for up to 30 minutes independently in school and up to 40 minutes at home. As indicated in the school's instructional expectations:

Grades K-2 should build up to 30 minutes of independent reading time (including partner time), while grades 3-5 should read at least 30 minutes per day throughout the year. Students in grades K-5 will utilize book baggies both in school and at home. The majority of books in the book baggie will be on the students' independent reading level.

Table 1 is taken from the school's instructional expectations.

Table 1

Reading Expectations at Study School

Time Spent (minutes) Reading at Home Each Night				
Grade Level	1st Trimester	2nd Trimester	3rd Trimester	Written Homework (Maximun)
K	5	10	15	10
1	10	15	20	15
2	15	20	25	15
3	20	25	30	20
4	25	30	35	20
5	30	35	40	25

Providing students with protected reading time is necessary in order to support their growth in reading. It is important that this independent reading time involves texts that are appropriately leveled (Towle, 2000). Readability levels usually give an objective numerical score, using a formula that measures sentence difficulty and word difficulty to indicate the grade at which most students should be able to read the passage independently (Rasinski, 2003). Teachers use these levels to match students to their "just right books." A text that is "just right" is termed that way because it "provides the context

for successful reading work and enables readers to strengthen their processing power” (Fountas & Pinnell, 1996).

Allington, McCuiston, and Billen (2014) raise specific cautions about students reading texts which are too challenging for them. The authors review research on text complexity and learning to read and come away with two major conclusions: increasing the complexity of texts as the best way to increase reading achievement lacks a base in available evidence from research, and a number of research studies have shown that texts used for instruction that can be read with at least 95% accuracy produce greater gains than harder texts. The authors conclude by contending that in order for students to become proficient readers, they must read texts which match their independent reading levels. Students who attended the summer literacy camp were provided “just right books” at their independent reading level. These books were read in school and also taken home to read.

After years of collaborative research, Morrow, Gambrel, and Pressley (2003) compiled eight principles of best practice based on the constructivist theory of learning that reflect a common understanding of generally accepted principles of literacy from a personal, intellectual and social nature. Research-based practices Morrow et al. (2003) reported included:

“(1) Learning is making meaning. (2) Prior knowledge guides learning. (3) The gradual release of responsibility model and scaffolded instruction facilitates learning. (4) Social collaboration enhances learning. (5) Learners learn best when they are interested and involved. (6) The goal of best practice is to develop high level, strategic readers and writers. (7) Best practices are grounded in the principle

of balanced instruction. (8) Best practices are a result of informed decision-making” (pp. 14-18).

Gambrell (2011) further suggests that reading activities should be relevant, students need to have access to a wide range of reading materials in the classroom, students need time to read in class for a sustained amount of time each day, and students should be given opportunities to choose what they read. Social interaction is another strategy described by Gambrell (2011), as she suggested that students should have opportunities to interact with other students about what they are reading. She also suggests that incentives should reflect the value and importance of reading. Decades of studies have revealed that school is a positive factor in supporting reading achievement (White, Kim, Kingston, & Foster, 2014), but much needs to be done in order to continue to close the gap for students reading below level.

The National Assessment of Education Progress (NAEP) provides a discouraging picture of reading achievement in the United States. The NAEP reading assessment is given every two years to students at grades four and eight, and approximately every four years at grade 12. The assessment measures reading comprehension by asking students to read selected grade-appropriate materials and answer questions based on what they have read. The results present a broad view of students’ reading knowledge, skills, and performance over time. The most recent assessment was given in 2017 to approximately 148,800 students in grade four and 141,800 students in grade eight. While scores have been increasing steadily since 2000, only thirty-seven percent of fourth grade students performed at or above the proficient level on the reading assessment in 2017 (National Center for Education Statistics, 2017). Failure to close this reading

achievement gap requires more focus on what seems to be a primary reason for the existing gap: summer learning loss. The summer literacy camp was designed to mitigate summer learning loss. Starting the camp for students who are entering first grade will hopefully be the intervention needed so that the gap does not widen each year.

Summer Learning Loss

Summer learning loss occurs because our current school calendars are antiquated. In the early years of formal schooling in the US, school calendars were designed to fit the needs of particular communities based on the agrarian calendar. In agricultural areas, children attended school for only five or six months while their urban peers attended for 11-12 months. By the turn of the 20th century, the implementation of standardized curricula created pressures to also standardize the amount of time that children spent in school. The present calendar, under which schools are closed for summer, emerged as the norm when 85% of Americans were involved in agriculture. Today, about 3% of Americans livelihood is tied to the agricultural cycle, but the school calendar has not changed (Cooper, 1996).

Children learn best when instruction is continuous, but summer vacation allows students to disengage from the reading routines that are well established during the school year. The long vacation interrupts the flow of instruction and requires too much time spent in the fall reviewing previous learned materials. In addition, the long summer break can have a greater negative effect on children with various needs. For example, children who speak a language other than English may have their acquisition of English language skills set back by an extended period without its usage (Cooper et al., 1996). While some schools across the nation have adjusted their calendars to allow for smaller

breaks across the school year, most schools follow the traditional school calendar that calls for a two or three month hiatus of learning. This hiatus then results in summer learning loss.

Summer learning loss is a well-established phenomenon (Alexander et al., 2007; Allington et al., 2010; Cooper et al., 1996; Kim & Quinn, 2014). Summer learning loss refers to the loss of knowledge and academic skills over summer months when students are out of school, and is widely recognized as a pervasive and significant problem in United States education (Zaromb et al., 2014). Cooper et al. (1996) reviewed 39 studies of summer academic loss and conducted a meta-analysis using 11 studies that provided sufficient data. The meta-analysis indicated that the summer loss equaled about one month on a grade level equivalent scale. They found that, on average, students' scores on state standardized tests in the fall were approximately one tenth of a standard deviation lower than they were in the preceding spring, which they interpreted to mean that summer learning loss was the equivalent of at least one month of instruction (Zaromb et al., 2014). They also found that the negative effects of summer did increase with increases in students' grade levels, thus compounding the summer learning loss each year and never giving students the time they need to close their achievement gap. Summer learning loss varies with respect to grade level, subject matter, and socioeconomic status (Alexander et al., 2007; Cooper et al., 1996). In order to prevent summer learning loss, school districts need to either change their school calendar or give students opportunities over the summer to continue learning.

School Calendar

Educators have had many debates over the years as to how the school calendar impacts student achievement. In the late 1990s there was a growing body of research that suggested that a calendar alteration could have a measurable and significant role in enhancing learning (Davies & Kerry, 1999). The National Education Commission released a document in 1994 that explained how schools and the people involved in them are prisoners of time and the usage of time is a failure to many students (National Education Commission, 1994). Glines (1998) argued that the solution for this calendar-based education problem would be Year Round Education (YRE). He maintains that learning is a 12-month process, and that 'part-time' schools hinder effective learning. The three-term calendar was a convenience of the agricultural society during the last century and modern realities of the urban/technological life demand a different approach. YRE calendars aim to establish shorter terms with shorter more frequent breaks between them to eliminate long summer vacation periods.

In 1995, Winters looked at 19 studies from school district across the US. His review suggested that YRE systems of calendar organization in schools appeared to have measurable, and possibly significant effects on the quality of student learning (Davies & Kerry, 1999). Based on the findings of Cooper et al.'s (1996) meta-analysis on summer learning loss, there were a number of implications which related to calendar issues. The first is that a change of calendar to more continuous learning benefits all students to a degree, and the most disadvantaged more than the rest. The second is that the amount of time spent on re-teaching skills lost over the summer is a further loss of instructional time. Further research from Frazier (1998) concluded that changing the calendar to move

away from an extended summer break may help raise student achievement. Such changes may benefit the less advantaged in particular because the lack of home and school support for learning during the summer may further exacerbate learning loss during long vacations (Davies & Kerry, 1999).

The number of schools that have converted to YRE has increased dramatically over the years. There is still much debate as to whether the change in calendar has proven to be effective on impacting student achievement. Despite several studies on the topic, most existing research on YRE and achievement suffers from important methodological limitations (McMillen, 2001). YRE is not exactly what its title implies. Districts that have converted to YRE have not added any more days to their school calendar. They have simply distributed them differently. Children in the US attend school approximately 180 days, which is less than half of the days in a calendar year.

Poverty

While the aforementioned research equates summer learning loss to one month of instruction, the same is not true for economically disadvantaged students. Research on summer learning loss has provided reliable evidence that the reading achievement of economically disadvantaged students slides back a few months every summer (Allington et al., 2010). All current research on summer learning loss and the effect it has on economically disadvantaged students refers back to the work of Barbara Heyns (1978). Heyns conducted a longitudinal study of students in Grades five through seven in 42 Atlanta schools. She examined the spring and fall reading growth of 3,000 students over a two-year period. She concluded that achievement gaps by family socioeconomic status

and race/ethnicity widen more during the summer months than during the school year, with the differences being more pronounced in reading.

Entwisle, Alexander, and Olson (2001) confirmed and extended these findings in a study done in the early 1990s that examined differences in Baltimore's students' spring and fall test scores in Grades one through six. They found that during the school year, students learned at nearly the same rate regardless of their SES. This was not the case for summer learning. During the summer vacation, economically disadvantaged students' scores fell much more rapidly than those of economically advantaged students. They developed the "faucet theory" to explain the phenomenon (Entwhistle et al., 2001). In their view, when the school faucet is turned on while school is in session, children of every economic background benefit roughly equally. When the school faucet is turned off during summer months, reading proficiency among children from more economically advantaged families continues to develop while no similar growth is noted in economically disadvantaged children. Contrary to Heyns, their research found that the summer break is more detrimental for math than for reading.

In 2007, Alexander et al. trace the initial achievement gap back to preschool where students enter school at varying levels based on their out-of-school learning experiences. Disadvantaged children start school already behind making it difficult to close the gap that already exists. Summer learning differences after children start school follow a similar pattern, but surprisingly the extent to which school-age children's family and neighborhood environments influence learning contributes to the achievement differential between high and low SES youth (Entwhistle et al., 2001). This cycle continues each year where economically disadvantaged students enter school each fall

having to make-up ground lost over the summer in reading. While they may make the same year's growth as their economically advantaged peers, they will never close the gap because by the time they make-up what they have lost, their peers will be a couple of months ahead of them. They will never catch up to them which is why each year the economically disadvantaged students fall further behind their economically advantaged peers. So, the wide reading gaps that we see in later years traces back to out-of-school time during the early elementary years (Alexander et al., 2007).

Downey, von Hippel, and Broh (2004) analyzed the Early Childhood Longitudinal Study data and found that economically disadvantaged children fell about 2.5 months behind more advantaged students during the summer months between kindergarten and first grade. Hayes and Grether (1983), using achievement data from the New York City public schools, estimated that as much as 80% of the reading achievement gap that existed between economically advantaged and disadvantaged students at sixth grade could be attributed to summer setback. Cooper et al. (1996) reviewed 39 studies which indicated that achievement test scores decline over summer vacation. Their findings were similar to Entwisle et al. (2001) in that they agreed that summer learning loss effects math more than reading. There was evidence that the summer break has roughly equal negative effects on the math skills of students from middle-and lower-income families, but greater negative effects on the reading skills of lower-income students. They suggested that caretakers, regardless of SES, failed to provide opportunities to practice and learn math over the summer, but that was not the case for reading. In fact, middle-class students appeared to gain on grade-level equivalent reading recognition tests over the summer, while lower-class students lost on them. There

were no moderating effects for students' gender or race, but the negative effect of summer did increase with increases in students' grade levels (Cooper et al., 1996). They speculated that the cause for this difference in reading may be related to differences in opportunities to practice and learn, which would require access to on-level reading materials over the summer.

Given the evidence that economically disadvantaged children have limited access to books in their neighborhoods and homes (Allington et al., 2010; Borman, Benson, & Overman, 2005; Heyns, 1978), various researchers have implied that more restricted access to print is a primary source of documented differences in home reading activity by students from families at different levels of family income (Allington et al., 2010; Cooper et al., 1996; Entwistle et al., 2001). A small set of studies reports that simply supplying poor students with books over the summer results in improved reading achievement (Allington et al., 2010). More than 40 years ago, Heyns (1978) suggested, "The unique contribution of reading to summer learning suggests that increasing access to books and encouraging reading may well have a substantial impact on achievement" (p. 172). Allington et al. (2010) did a study that offered additional support for that conclusion. They gave children from low-income families easy access to books for voluntary summer reading over a three-year period. Their findings indicated that providing easy access to self-selected books for summer reading over successive years does limit summer reading setback (Allington et al., 2010). To include this type of easy access to books, the summer literacy camp was designed to give students access to books that they took back and forth each day. At the end of the camp, students took home 12 books that they added to their home libraries.

The failure of the various federal educational initiatives to close the reading achievement gap may stem from a failure of policy makers to focus attention on what seems a primary source of the existing achievement gap: summer reading setback (Allington et al., 2010). The role that summer learning loss plays in the reading achievement gap between economically advantaged students and economically disadvantaged students has been studied for over 40 years (Heyns, 1978). There is a common thread throughout all of the research done on summer learning loss: summer vacation periods reliably produce differences in reading achievement among economically advantaged and economically disadvantaged children (Allington et al., 2010). What seem to be small differences at first expand over time and leave economically disadvantaged children with a wide reading achievement gap by the time they enter middle school. While there is little educational policy addressing either the issue or the impact, there are federal funds available to school districts that can be used to help mitigate summer learning loss.

Federal Initiatives

In 1965 the federal government first became involved in trying to deal with the effects of poverty on education. President Lyndon B. Johnson enacted the Elementary and Secondary Education Act (ESEA) in 1965 as he declared a “war on poverty.” Its goals included equal access to education, professional development, providing instructional materials, and decreasing the achievement gap. This was followed by the No Child Left Behind Act of 2001 which was also a federal initiative aimed at closing the achievement gap. The Every Student Succeeds Act (ESSA) in 2015 reauthorized the

Elementary and Secondary Education Act (ESEA) and provides federal funds to improve elementary and secondary education.

Part of the ESEA is Title I, Improving the Academic Achievement of the Disadvantaged. Its main purpose has been to help economically disadvantaged children meet challenging state and academic standards. Title I is built on the understanding that more money can help make a greater impact on a child's education and that children from poverty need more academic support that, in turn, cost more money (Coleman, 1966). It is designed to provide all children significant opportunity to receive a fair, equitable, and high-quality education aimed at closing the achievement gap. Schools with high concentrations of poverty are provided with Title I funding in order to help those that are behind or at risk of falling behind, aiming to bridge the gap between economically disadvantaged students and economically advantaged students. Schools are to use this money to provide students with additional instructional support beyond the regular classroom in order to help close the achievement gap that exists between economically disadvantaged students and economically advantaged students. The summer literacy camp is a program that was funded in part by Title I aimed at mitigating summer learning loss for our economically disadvantaged students.

Schools also receive Title III funds in order to assist English Language Learners (ELLs). The purpose of Title III, Part A of the ESSA is to help states, school districts, and schools provide effective services that improve the English language proficiency and academic achievement of ELLs and Multilingual Learners (MLLs) (TITLE III, Part A: English Language Learners and Immigrant Students, 2019). According to the NYSED,

some examples of Title III ELL/MLL allowable activities that target the needs of ELLs and MLLs include:

- Supplementary educational programs that work to increase English language proficiency and academic achievement of ELLs/MLLs.
- Promoting parent, family, and community engagement through community participation programs, family literacy services, and parent outreach and training activities to ELLs/MLLs and their families.
- Tutorials and supplemental materials (including home language) for ELLs/MLLs.

The War on Poverty and subsequent initiatives and programs substantially reduced the level of poverty in the United States and provided critical supports to improve the lives of the most vulnerable children and families. According to the U.S. Department of Health and Human Services, poverty has decreased for the overall population since the 1960s. Official poverty in the United States stood at 19.0% in 1964 and decreased by 4.2 percentage points to 14.8% in 2014, moving up and down with economic cycles. The official poverty rate for children decreased by 1.9 percentage points, from 23.0% to 21.1%, during this time. Hispanics also saw large declines in their official poverty rates from 1993 to 2001. During the Great Recession, however, the Hispanic poverty rate increased more than for any other group. At 23.6% in 2014, the Hispanic poverty rate remained above its historic low of 20.6% in 2006 (Chaudry et al., 2006). The summer literacy camp is a program that was funded in part by Title III aimed at mitigating summer learning loss for English Language Learners (ELLs).

English Language Learners

As the demographics of the US shift, and literacy expectations rise, large percentages of students need more targeted literacy instruction and intervention efforts. On one hand, grade-level benchmarks and reading standards are an omnipresent source of pressure for speeding up the curriculum: on the other hand, teachers understand that simply “pouring more in” does not promote student success (Helman & Burns, 2008). The percentage of students in US Schools who were identified as English language learners (ELLs) rose from 6.7% in 1999-2000 to 9.9% in 2013-2014. That is almost five million ELLs in US schools (US Department of Education, 2014). In New York State, 7.9% of students were ELLs in 2009-2010 compared to 26% in 2013-2014. Latino immigrants are the fastest growing school-age population entering preschools and kindergartens (Lesaux, 2012). This increase of ELLs in our schools means that we need to adjust our instructional practices to make sure we are meeting the needs of these learners. A study done by Michael Kieffer showed that children who entered kindergarten with limited proficiency in English continued to demonstrate reading achievement below that of their monolingual English speaking peers through fifth grade (Kieffer, 2010). These findings suggest that students who enter school with limited English proficiency or score low on early literacy measures never catch up. Research shows that it is possible to predict in early childhood who is at risk for later reading difficulties (Lesaux, 2012). This is why it is crucial to intervene as early as possible in order to close the gap for ELLs.

There are many different factors that can affect the progression of ELL students’ literacy development. According to August and Shanahan (2006), students’ age of arrival in a new country, educational history, and cognitive capacity influence literacy

development. Also, language and literacy in the native language, second language oral skills, sociocultural context, and educational settings influence literacy development. How children are taught affects how much and how well they learn. It is important to understand that the development of literacy skills in a second language is more challenging than for native speakers. However, the effectiveness with which any child develops into a proficient reader may depend on exposure to appropriate instruction (Helman & Burns, 2008). This confirms the importance of instructional approaches that are tailored to meeting the needs of English language learners.

Becoming an effective reader is a complex process that is important because reading is the foundation for learning across all academic areas. Becoming proficient readers who not only decode but also understand what they are reading is a crucial goal for ELLs. Proficient reading involves the automatic decoding of words on the page so that a reader's mental energy can be used on comprehending the story (Helman & Burns, 2008). Developing a sight word vocabulary that can be used in fluent reading is an important component to this proficiency. A study conducted by Helman and Burns (2008) found that a significant relationship did exist between English proficiency and acquisition rates of English sight words for ELLs. To increase sight words for ELLs, they suggest that teachers differentiate their instructional activities in reading to support the language level of their students, embed language development activities within skill instruction, and give students multiple opportunities to read high-frequency words in connected texts.

Building background knowledge is also key for ELLs as their experiences vary greatly. To make meaning from text, the reader needs relevant background knowledge

related to the texts' vocabulary, topic, and structure (Lesaux, 2012). Building vocabulary is another key component that is paramount to reading comprehension, thus leading to student achievement. Unlocking academic vocabulary is also necessary in order for ELLs to be successful readers. While ELLs may appear to master social English in a relatively short time period, it often takes much longer to master academic language (DeLuca, 2010). Beck, McKeown, and Kucan (2002) identify three levels of vocabulary: Tier 1 which includes basic everyday words, Tier 2 which includes frequent mature words for literate individuals, and Tier 3 which are low frequency words limited to specific fields of study or professions. Science texts require comprehension of Tier 2 and 3 vocabulary. Teachers can build semantic connections by using Tier 1 and Tier 2 vocabulary interchangeably. ELLs also can acquire academic vocabulary by inferring word meaning based on roots, affixes, and cognates, through discussion, and with visuals (DeLuca, 2010). More needs to be done to close the gap that exists in science proficiency for ELLs. The summer literacy camp was designed to give the ELLs the support needed in order to mitigate summer learning loss. Each classroom had an English as a New Language (ENL) teacher and a classroom teacher. The ENL teacher supported the ELLs by scaffolding the material, meeting them in small groups every day to support reading, and building vocabulary and academic language.

Next Generation Science Standards

There is a new wave of science education reform that is grounded in the idea that all students have equal access to the new standards. The Next Generation Science Standards (NGSS) are building on the National Research Council's consensus reports that consistently highlight that when provided with equitable learning opportunities,

students from diverse backgrounds are capable of engaging in scientific practices and construct meaning in both science classrooms and informal settings (Appendix D, NGSS). The goal of this reform is to make all students ready to pursue STEM college degrees and careers to be informed citizens (Januszyk, Miller, & Lee, 2016). The new wave calls for all students to learn academically rigorous science, become college and career ready, and take part in the global community. Coupled with the Common Core State Standards (CCSS) these new standards move away from a paradigm that supports content and language development as contiguous strands of learning, and conceptualizes disciplinary and language learning that is more symbiotic, each interdependent on one another (Cheuk, 2016).

These new standards elevate expectations for students' language and literacy development across the content areas and raise the bar linguistically and academically for all learners, especially ELLs. This is particularly important since ELLs are the fastest-growing student population. This demographic upswing and the new standards' focus on language bring increased attention to the needs of ELLs (Cheuk, 2016). The NGSS address diversity and equity issues from the start in discussing what counts as science and who does science. The NCSS state: "Men and women from different social, cultural, and ethnic backgrounds work as scientists and engineers" (NGSS Appendix H, p. 6). According to Januszyk et al. (2016), there are four aspects particularly relevant to diversity and equity issues that are part of the NGSS. First, the NGSS presents phenomena and problems that are placed in home and community contexts allowing diverse learners to build on their everyday experience and language to make connections among school, science, home, and community. Next, the standards emphasize the central

role of engineering. By designing engineering solutions to problems in local contexts, students deepen their science knowledge and recognize science as relevant to their lives (Rodriguez & Berryman, 2002). The third aspect involves science inquiry, which is language intensive and calls for a high level of discourse. As a result, science classrooms adhering to the NGSS promote rich language learning and rigorous science learning. The final aspect of the NGSS involves the explicitness of crosscutting concepts that connect interrelated ideas across science disciplines and allow students to make connections among science ideas.

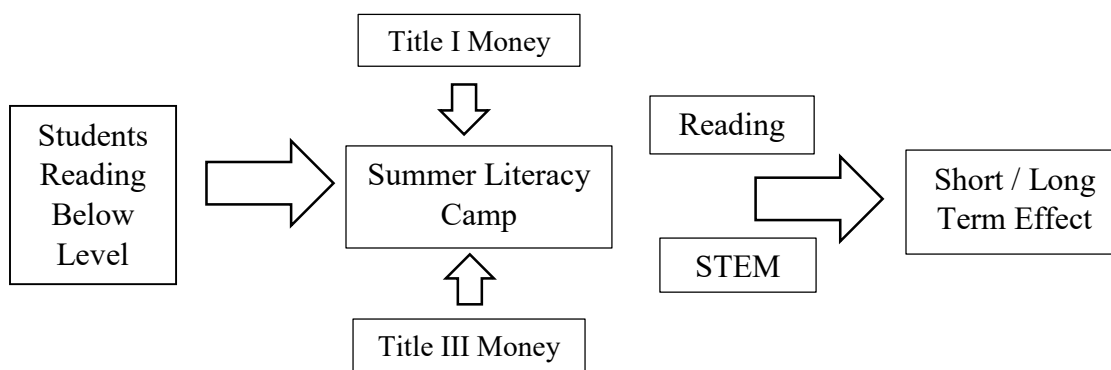
The creation of the NGSS involved a diversity and equity team in order to ensure that they were accessible to all students. Student diversity was defined in terms of the four federally designated groups: economically disadvantaged students, students from major racial or ethnic groups, students with disabilities, and students with limited English proficiency. They also included three more groups: girls, students in alternative education programs, and gifted and talented students. Within the standards, Appendix D: All Standard, All Students focuses on student diversity and equity in relation to the NGSS. It highlights effective classroom strategies in current research that apply to all seven groups. According to Januszyk et al. (2016), commonalities in approach or strategies that have emerged include: capitalize on students' cultural and linguistic resources from their backgrounds that can serve as intellectual resources in the science classroom, connect students' background knowledge with science disciplinary knowledge, and allocate school resources to support science learning. The NGSS also went through two rounds of bias reviews to ensure that the NGSS avoided stereotypes, avoided unnecessarily difficult language, and represented inclusiveness and diversity. The bias reviews focused on three

areas: representation of diversity and equity, consistency of language, and clarity of language (Okhee, Miller, & Januszyk, 2014).

The summer literacy camp incorporated the NGSS because they elevate expectations for students' language and literacy development across the content areas and raise the bar linguistically and academically for all learners, especially ELLs. The NGSS were also used because of the explicitness of crosscutting concepts that connect interrelated ideas across science disciplines allowing students to make connections among science ideas. The topics were carefully chosen to help build students' prior knowledge in order to better prepare them for the upcoming school year.

Conceptual Framework

Figure 3. Conceptual framework.



Students were chosen to attend the summer literacy camp based on their Spring reading levels. Levels A-J were assessed using the Fountas and Pinnell (F&P) benchmark reading assessment and levels K and above were assessed using Jennifer Serravallo's Complete Comprehension Assessment. Classroom teachers and reading teachers recommended students to the program and then students were chosen based on their reading levels and for kindergarten students, the number of sight words that they had mastered at the time. The school receives Title I money because of the number of

students who receive free/ reduced lunch. The school receives Title III money in order to assist the ELLs. The combination of the Title I and Title III monies were used to cover the cost of staff and materials needed for the camp. A daily schedule was created based on literacy components incorporated each day and each week featured a different STEM theme. The purpose of this study is to look at the short term effects of the camp in order to determine if it is possible to mitigate summer learning loss through this summer literacy camp which could then lead to potential positive long term effects.

Conclusion

The research shows that in order for students to get better at reading, they must read. Increasing the frequency and time spent practicing the act of reading leads to increases in reading achievement by developing accuracy, fluency, and comprehension (Allington, 2006; Guthrie et al., 2004). Because of an extended summer hiatus from learning, students experience summer learning loss. This gap widens for students each year as it compounds over time. The wide reading gaps that we see in later years traces back to out-of-school time during the early elementary years (Alexander et al., 2007). This summer learning loss has a greater impact on students who are economically disadvantaged. Through Title I and Title III grant monies, as well as community partnerships, it is possible to create opportunities for economically disadvantaged and ELLs to help mitigate summer learning loss. The NGSS were designed to address diversity and equity issues, so it would make sense to create a summer learning experience for students that incorporated rich daily literacy experiences infused with well-planned STEM activities. Through this study, the effectiveness of a summer literacy camp is evaluated to see the effects it has on mitigating summer learning loss.

CHAPTER 3: METHODOLOGY

The researcher's purpose in this chapter is to identify and describe the quantitative procedures used to examine the research questions surrounding summer learning loss.

The remainder of the chapter is organized into sections that will present the data collection, analysis methods, and procedures used to carry out this study. First, the rationale for the research approach is described, followed by an explanation of why the research setting and research sample were chosen. The data collection and analysis methods are justified and finally the trustworthiness and the limitations of the study are discussed.

Research Questions

The study was guided by the following questions:

- 1 How do students who attended the summer literacy camp compare to those who were invited to the camp but did not attend in regard to reading levels and aimsWeb Plus scores?
- 2 Did the summer literacy camp impact the following groups of students: students from a low SES home and students who are identified as ELLs (English Language Learners)?

Rationale for Research Approach

The research questions for this study were approached from a quantitative research design. According to Creswell (2015), in quantitative research a problem is identified based on the need to explain why something occurs. The purpose of this research is to identify why gaps exist in student learning for certain groups of students. This study is quantitative because it is based on data that were collected from students

who attended the summer literacy camp and students who were invited to attend but did not. More specifically, the research design is quasi-experimental, as explained by Creswell (2015) and illustrated in Tables 2 and 3.

Table 2

Creswell's Quasi-Experimental Research Design

Pre- and Posttest Design		Time	
→			
Select Control Group	Pretest	No Treatment	Posttest
Select Experimental Group	Pretest	Experimental Treatment	Posttest

Table 3

Quasi-Experimental Research Design as Applied to this Study

Pre- and Posttest Design		Time	
→			
Select Control Group: 51 Non-participants	Pretest: aimswebPlus and F & P or CC	No Treatment: Declined Invitation to Summer Literacy Camp	Posttest: aimswebPlus and F&P or CC
Select Experimental Group: 78 Participants	Pretest: aimswebPlus and F&P or CC	Treatment: Attended Summer Literacy Camp	Posttest: aimswebPlus and F&P or CC

Research Setting/Context

The study involves students who attend one of four elementary schools in a suburban school district on Long Island in New York State. The school consists of 602 students, of which 51% are male and 49% are female. The demographics include 35% White, 44% Hispanic or Latino, 11% Black or African American, 7% Asian or Native Hawaiian or other Pacific Islander, and 3% Multiracial students. Additionally, 54% of the

students come from poverty, 16% are English language learners, 13% have either an IEP or a 504 plan, and 5% are homeless. It is important to note that this school is an outlier to the district and does not represent the overall demographics of the district, as illustrated in Table 4 taken from the 2017 NYS School Report Card.

Table 4

Demographics of Study District and Host School

	District High School 1870 Students	District Middle School 1282 Students	Summer Literacy Camp Host Elementary School 602 Students
Male/Female	53%/47%	54%/46%	51%/49%
American Indian/Alaskan Native	5/0%	2/0%	2/0%
Black	106/6%	79/6%	66/11%
Hispanic/Latino	325/17%	253/20%	263/44%
Asian or Native Hawaiian/ Pacific Islander	82/4%	51/4%	40/7%
White	1336/71%	872/68%	209/35%
Multiracial	24/1%	24/2%	22/4%
English Language Learners	103/6%	67/5%	98/16%
Students with Disabilities	284/15%	230/18%	79/13%
Economically Disadvantaged	664/36%	457/36%	325/54%
Homeless	55/3%	48/4%	33/5%

The site school was chosen because of the high number of economically disadvantaged students and ELLs. It is the only school that hosted a summer literacy camp utilizing funds from Title I and Title III monies. The summer literacy camp was made up of 78 students in grades K-4. Of those 78 students, 64 were economically

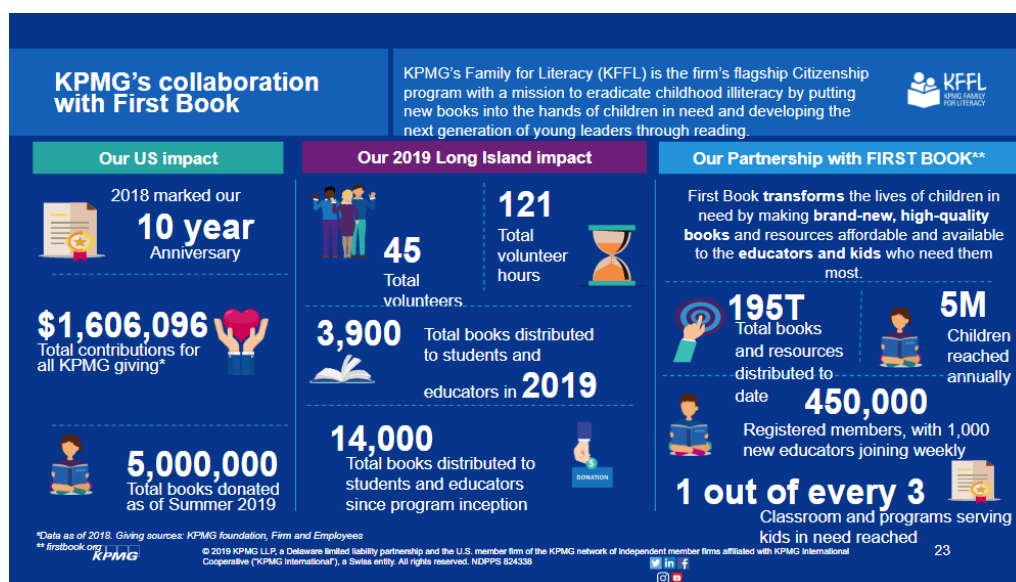
disadvantaged and 37 were English Language Learners. Students were invited to the summer literacy camp based on their Spring reading levels. Classroom teachers and reading teachers made recommendations and then students were categorized into List A and List B based on their reading levels. Invitations were sent out to List A. As students from List A declined, invitations were sent out to students from List B until each class had at least 14 students in it.

The camp was created based on a vision shared by the building principal, the director of ENL and the science director in hopes of preventing summer slide and increasing positive relationships in order for students to have a more positive school experience. Planning meetings were held from February through June in order to prepare for the camp. An internal posting advertised the program and asked for interested applicants to apply. The posting called for classroom teachers, ENL teachers, a library media specialist, a social worker, and a STEAM consultant. Interested candidates applied and interviews were conducted. Five classroom teachers, five ENL teachers, a library media specialist, a social worker, and a STEAM consultant were hired.

Five classes were set up; one each for students entering grades one through five. Each class had two teachers: a classroom teacher and an ENL teacher. Also on staff were a library/media specialist, a STEAM consultant, a social worker, and a nurse. Teachers met for two days of professional learning before the camp started to gather materials and plan their lessons. The camp took place over five weeks and students attended Monday through Thursday from 9:00 AM – 12:00 PM. A schedule was created by each classroom teacher that included breakfast, reading workshop, read aloud, science, recess, and lunch. Students received breakfast and lunch during the literacy camp through a partnership with

Long Island Harvest. Students received 10 books on their independent reading level that they used during the literacy camp and then were able to keep and add to their home library. Through a partnership with KPMG's Family for Literacy, students received an additional 4 books to add to their library. As shown in Figure 4, KPMG collaborates with First Book through their KPMG's Family for Literacy with a mission to child illiteracy by putting new books into the hands of children in need. KPMG partners with First Book. First Book believes that education is the best way out of poverty for children in need and aims to remove barriers to quality education for all kids by making things like high-quality books and educational resources affordable to its member network. KPMG collects donations that are deposited into their First Book account which allows them to purchase and donate books to schools in need. This donation allowed the participants in the summer literacy camp to build/add to their home library.

Figure 4. KPMG's Collaboration with First Book



Classroom libraries were also purchased with Title I funds around the science themes: what is the role of a scientist, human impact on the environment, weather, and

forces and motion. These themes were chosen by the science director because of their spiral through the elementary program. Classes went to the library each week where the library media specialist and the STEAM consultant had a hands-on science activity planned that went along with the theme for that week. Teachers did a read aloud each day modeling for students the strategies that they would use during independent reading time. During reading workshop, teachers met with small groups of students for guided reading or strategy groups. While they met with small groups, the rest of the students were independently reading. Book bags were sent home each day in hopes that students would also read each night. Parents were invited in during the first week of the camp to meet the teachers and hear about what would be done in school and how they could support that work at home. All of these pieces were put in place in hopes of mitigating summer learning loss.

Data collection for this study included a quasi-experimental design using two groups, one that received treatment (attended literacy camp) and the other that did not (those who were invited but did not attend). This research could shed light on the student achievement gap that widens each year for students. With these findings, next steps can be determined and implemented in order to provide a blue print for districts to use to provide a summer learning experience that could close the student achievement gap for students, especially those from poverty and ELLs.

Research Sample and Data Sources

The overall sample consists of 129 students broken down into two groups to be studied: the group who received treatment and the group who did not. The treatment group consists of 78 students entering grades 1-5 who attended the summer literacy

camp. Of those 78 students, 64 were economically disadvantaged and 37 were English Language Learners. Fifty one students were invited to attend the summer literacy camp but declined the invitation. Of those 51, 34 were economically disadvantaged and 13 were English Language Learners. This group was considered the control group that did not receive treatment.

The data source for this quantitative study consists of reading data that were recorded by classroom teachers and collected by the district. Teachers record reading levels in September, December, March and June in the district's student management system, Infinite Campus. These reading levels are tracked over time by the building principal using a spreadsheet that also houses the aimsWebPlus scores. aimsWebPlus is the universal screener that is used by the district and is administered to students in September, January, and June.

Data Collection Methods

Teachers in this school report student reading levels in September, December, March and June. Official benchmarks are collected using the Fountas and Pinnell Benchmark Assessment System for Levels A-J. Using the Fountas and Pinnell Benchmark Assessment System, teachers are able to identify the instructional and independent reading levels of all students and document student progress through one-on-one formative and summative assessments. Teachers use Jennifer Serravallo's Complete Comprehension Assessment kit to assess reading level K and above. The district switches over at Level K because the Complete Comprehension kit assesses students on an entire book that is similar to those that they will encounter on their level. Teachers record each student's independent reading level through Infinite Campus.

In addition to reading levels, student performance is reported three times per year with aimswebPlus. The aimswebPlus scores are compared to established cut scores and national and/or local norms. aimswebPlus uses both timed curriculum-based measures (CBMs) and untimed standards-based measures to assess skills and inform instruction. aimswebPlus gives subtests for word reading fluency (WRF) for kindergarten and first grade, oral reading fluency (ORF) for grades 1-3, and vocabulary and reading comprehension for grades 2-5. Students receive a composite score for reading in the form of a percentile that is locally and nationally normed. For the purpose of this study, reading levels and aimswebPlus scores will be compared from Spring 2019 to Fall 2019.

Research Ethics

Data that were collected for this study were preexisting data that the school collects each year. Teachers had no knowledge of the study or data analyses. The summer literacy camp would have taken place regardless of this study. Students who participated in the summer literacy camp were invited based on their reading levels and enrolled by their parents.

Data Analysis Methods

Using IBM SPSS, the data were screened using descriptive statistics. A one-way between-subjects ANOVA was performed to make sure the covariate (pretest) did not vary across the groups (treatment group versus non-treatment group). A repeated measures ANOVA was conducted to compare the reading levels of students who attended the summer literacy camp versus the control group who did not receive treatment. The same procedures were repeated with the aimsweb Plus reading composite scores. From this data, the summer gain/loss scores were analyzed.

For the second research question, a mixed repeated measures ANOVA was conducted but disaggregated for economically disadvantaged students and English language learners. The main goal of the repeated measure ANOVA is to test whether a score changes over time as a result of random fluctuations or if there is evidence for something. The repeated measures ANOVA allows researchers to incorporate different effects into their models, such as grouping variables or covariates. The test this researcher used includes a grouping variable often called a one-within one-between ANOVA, which refers to the within effect of time, which could influence everyone *within* the sample, and the between effect of group, which describes differences *between* two or more groups (Field, 2005). The summer literacy camp was the treatment or intervention condition compared to the control group with measurements taken at two times, before and after treatment. This kind of analysis allows researchers to see if scores changed as a result of the treatment, but also compare the changes over time between a group who should have shown a change (the treatment group) and one who should not have changed (the control group). This wrinkle in the design can help account for threats to internal validity, such as maturation and testing effects (Girden, 1992).

Issues of Trustworthiness

Possible threats to internal validity can be time, history and instrumentation. Differences among student experiences over the summer can influence reading levels. Students who read at home over the summer are more likely to not experience summer learning loss than students who did not read at home over the summer. The quality of the classroom experience that students had over the summer is also a variable as each pair of teachers created their own lesson plans.

During the school year, each classroom teacher administers their own reading benchmark assessment to obtain a student's independent reading level. Although there are specific protocols in place to administer these benchmark assessments, 27 different testers leave room for error. It should also be noted that there are two different testers from spring to fall as the students change grade levels and teachers.

Limitations of the Study

Limitations of the study include the sample size and the length of the study. To get a more robust dataset and to be able to make better generalizations, this study should be completed in different schools in several school districts over the course of several years.

Researcher Role

The researcher is the building principal of the Title I school where the intervention took place. This study is important to see if the allocation of Title I and Title III monies is worth spending on a summer literacy camp. The researcher will look at the data and let the results guide the decision making.

Conclusion

A Summer Literacy Camp was formed using Title I and Title III monies as an intervention to help mitigate summer learning loss. In addition to the grant money, community partnerships with Long Island Harvest and KPMG provided food and books for the students who attended the camp. Reading was the primary subject addressed along with a specific integration of science. While this chapter outlined the camp used as the intervention, the next chapter will go over the results of the data analysis to see if the camp was successful.

CHAPTER 4: RESULTS

This chapter contains the analysis of the results as outlined in Chapter 3. The chapter presents the findings broken down and discussed by research question. As stated in Chapter 1, this study examined the spring and fall reading scores of students to see if a summer literacy intervention could help mitigate summer learning loss. This chapter presents analyses of differences in reading scores based on students who attended the camp as well as students who were invited to attend but did not. Data were also examined to see if the camp had a greater impact on ELLs as well as students identified as economically disadvantaged. Reading levels and aimswebPlus scores from Spring 2019 to Fall 2019 were analyzed. A repeated measures ANOVA was used to compare the pretest/posttest results to see if the intervention was able to help mitigate summer learning loss. A mixed repeated measures ANOVA was used to see the effect the camp had on the different groups of students.

Results/Findings

Participants in this study were 129 students in grades K-4. Of those 129 students, 78 participated in the Summer Literacy Camp. Of those 78 students, 64 were economically disadvantaged and 37 were English Language Learners. 35 of the students were economically disadvantaged and ELLs. 51 students did not participate in the summer literacy camp and became the control group. Of the 51 students, 34 were economically disadvantaged and 12 were English Language Learners.

Table 5

Means and Standard Deviations of Group Scores on aimswebPlus

Variable	Measure 1		Measure 2	
	Mean	St. Deviation	Mean	St. Deviation
Attend	17.16	15.48	23.46	24.60
Not Attend	22.70	21.02	20.65	17.35
ENL	15.78	17.34	21.28	23.84
Not ENL	21.46	18.05	23.07	21.03
Low SES	18.16	18.48	21.48	22.97
Not Low SES	23.35	15.40	25.65	18.47

RQ1: How do students who attended the summer literacy camp compare to those who were invited to the camp but did not attend in regard to reading levels and aimsWeb Plus scores?

The researcher first used a repeated measures ANOVA to see if the intervention had an impact on reading scores. Prior to running the Repeated Measures ANOVA, the researcher calculated the difference between the pretest total and the posttest total. A box plot revealed five outliers. The researcher removed the outliers from the sample because they made up less than 5% of the sample. A histogram produced from the cleaned data revealed a normal distribution. The Repeated Measures ANOVA indicated that there were no gains in terms of reading levels from June to September when looking at reading levels reported using the Fountas and Pinnell and Complete Comprehension reading assessments. The Repeated Measures ANOVA showed no significant change in reading levels from June to September based on those who attended the summer literacy camp

(treatment group) versus those who did not attend (control group) with a p value of .54. Because the p value was greater than .05, the difference was not statistically significant. Based on these results, students who attended the camp did not grow in reading levels nor was there a decrease in reading levels. These results will be further discussed in Chapter 5.

The aimsWebPlus scores for those who attended the camp had a p value of .05, which shows that attending the camp had a positive effect on the aimswebPlus scores. For RQ1, the repeated measures ANOVA indicated that attending the camp did not have a significant effect reading levels but it did have an effect on aimswebPlus scores, which are standardized and normed. Since the two dependent variables showed differing results, there is not enough evidence to accept the null hypothesis.

RQ2 asked, did the summer literacy camp impact the following groups of students: students from a low SES home and students who are identified as ELLs? The researcher used a Split-Plot ANOVA also known as a Two-Way Mixed Repeated Measures ANOVA. This test compares the mean differences between groups that have been split on two factors where one factor is a within subjects and the other factor is between subjects to look at the main effects and the interactions. Before running the Two-Way Repeated Measures ANOVA, the researcher checked the data for normality and homogeneity of variance. The Repeated Measures ANOVA compared the before/after results for the 2 groups of students, ELLS and those with low SES. In this case, the test for homogeneity of variance does not apply as a required assumption. The applicable assumption required is the Mauchly's sphericity test. Mauchly's sphericity test is a statistical test used to validate a repeated measures analysis of variance (ANOVA).

Sphericity is an important assumption of a repeated-measures ANOVA. It is the condition where the variances of the differences between all possible pairs of within-subject conditions are equal. Sphericity can be evaluated when there are three or more levels of a repeated measure factor. However, since there are only two levels in this ANOVA, then sphericity has been met.

A 2 x 2 mixed factorial ANOVA with repeated measures was conducted to investigate the effects of a summer literacy camp on aimsWeb Plus scores and the interactions. ANOVA is used to compare means when there are two or more independent variables. The ANOVA is mixed because there is a mixture of between-groups and repeated measures variables. The two between-groups variables for this research question are English Language Learner (ELL) and Free and Reduced Lunch (low SES). The repeated measures are the spring and fall aimsWebPlus assessments.

The Mixed Repeated Measures ANOVA showed that there was an overall change in aimswebPlus scores for all students from June to September with a p value of .015. The Mixed Repeated Measures ANOVA done for the aimsWebPlus scores indicated that there was no significant main effect for those who attended the summer literacy camp with a p value of .91. It also showed that the intervention did not have a significant impact on either group of students. The summary table of repeated measures effects in the ANOVA with corrected F -values is below. The F ratio is the ratio of two mean square values. If the null hypothesis is true, the expectation is for the F to have a value close to 1.0 most of the time. A large F ratio means that the variation among group means is more than one would expect to see by chance. The output is split into sections for each of the effects in the model and their associated error terms.

Table 6

ANOVA Source Table of aimswebPlus Gain/Loss Scores

Measure: AimScores

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Time	497.66	1.00	497.66	6.08	.02
Attend	1.15	1.00	1.15	0.01	.91
ENL	526.33	1.00	526.33	6.44	.01
Low SES	363.58	1.00	363.58	4.44	.04
Attend and ENL	102.57	1.00	102.57	1.25	.27
Attend and Low SES	189.24	1.00	189.24	2.31	.13
ENL and Low SES	410.39	1.00	410.40	5.01	.03

For RQ2, the mixed repeated measures ANOVA indicated no significant difference in reading scores when looking the aimsWebPlus scores for those who attended the camp who were ELLs and low SES. Because the p value was greater than .05, the difference was not statistically significant. The hypothesis is rejected in favor of accepting the null hypothesis. The difference in the reading scores based on the intervention was not significantly different for the groups of ELLs or low SES groups compared to non-ELLs and not low SES.

The data show that the summer literacy camp was less effective than time in causing the increase in aimsWeb plus scores. However, the marginal means shows a large increase for those attending camp, as shown in Table 7. If you look at confidence

intervals, they tell the story of why the difference is not statistically significant. The ranges of the confidence intervals overlap because the standard deviations are so large.

Figure 5. Marginal means of aimswebPlus scores from spring to fall.

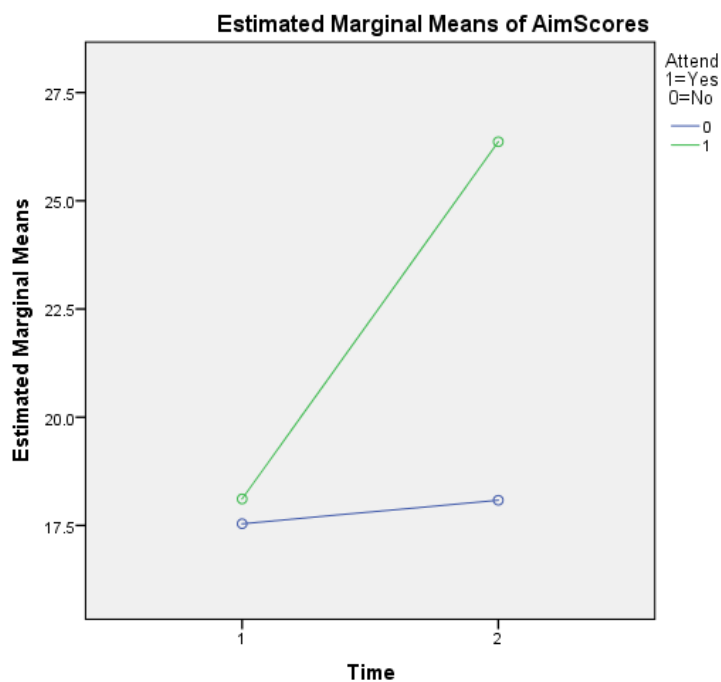


Table 7

Confidence Intervals

Intervention	aimswebPlus	Mean	Std. Error ⁴	95% Confidence Interval	
				Lower Bound	Upper Bound
Did Not Attend Literacy Camp	Measure 1: Spring Test	17.539	2.076	13.421	21.657
	Measure 2: Fall Test	18.082	2.319	13.482	22.682
Attended Literacy Camp	Measure 1: Spring Test	18.112	3.535	11.100	25.124
	Measure 2: Fall Test	26.364	3.949	18.530	34.198

Conclusion

The researcher hypothesized that students who received the intervention would score better in terms of reading levels and aimswebPlus scores than students who were invited to attend the camp but did not. The aimswebPlus scores showed an increase in scores for those who attended versus those who did not. Reading levels did not show an increase, but they also did not decrease. The null hypothesis is rejected as there was an impact on students who attended the camp.

The researcher hypothesized that there will be a difference in reading scores based on the different groups of students. There was no significant change in reading scores for economically disadvantaged or ELLs who attended the camp. The null hypothesis is not rejected. The difference in the reading scores based on the intervention was not significantly different for the groups of ENL or Free and Reduced groups compared to non-ENL/Free and Reduced groups of students. The data shows that there was an impact on students who attended the camp. The researcher believes that students benefitted even more than the data suggests. This will be further discussed in Chapter 5.

CHAPTER 5: DISCUSSION

The main purpose of this study was to examine the impact of a summer literacy camp intervention on reading scores from spring to fall to see if the camp was effective. In addition, the researcher wanted to see if the summer literacy camp had a greater impact on ELLs and students who are economically disadvantaged. This chapter discusses the results from Chapter 4 and their connection to existing research. In addition, the chapter discusses the impact of these conclusions on future professional practice and research.

Implications of Findings

Research Question 1: How do students who attended the summer literacy camp compare to those who were invited to the camp but did not attend in regard to reading levels and aimsweb Plus scores?

Finding: Students who attended the literacy camp saw an increase in their aimswebPlus scores versus those who did not. The aimswebPlus scores for those who attended the camp increased significantly from spring to fall. Because the standard deviations were so large, the ranges of the confidence intervals overlapped causing the statistical significance to have a p value of .05, which is just at significance. Reading levels as assessed with the Fountas and Pinnell and Complete Comprehension Assessments showed no statistical significance between students who attended the literacy camp and those who did not. Reading levels for most students remained the same from the spring to fall benchmarks regardless of whether they attended the camp or not. While the data did not show growth on reading levels for students who attended the summer literacy camp, it did show that levels for most students remained the same. This indicated that there was no learning loss for most students from June to September.

Research Question 2: Did the summer literacy camp impact the following groups of students: students from a low SES home and students who are identified as ELLs (English Language Learners)?

Finding: The literacy camp intervention did not have a greater impact on those who are economically disadvantaged or ELLs. There was no significant change in reading scores on either assessment for students who were economically disadvantaged or ELLs who attended the camp.

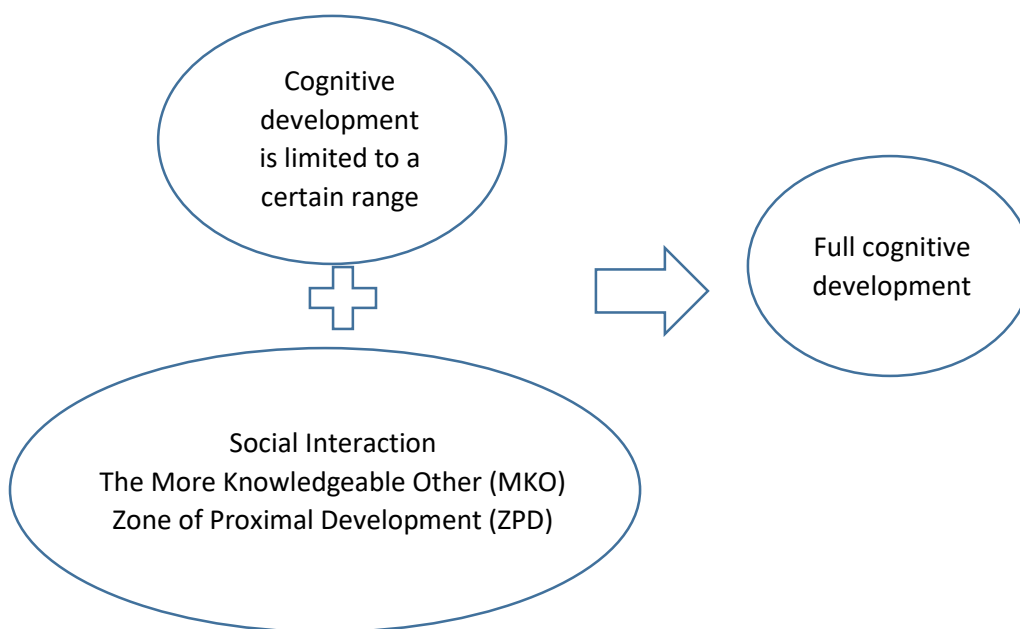
While the data collected allowed for analyzing changes in reading scores, the researcher hypothesized that there would be a change in reading scores because the theoretical framework for the summer literacy camp was based on Vygotsky's theory of constructivism which argues that cognitive abilities are socially guided and constructed. Vygotsky's (1978) theory asserts three major themes including Social Interaction, the More Knowledgeable Other (MKO), and the Zone of Proximal Development (ZPD). Cognitive development stems from social interactions from guided learning within the zone of proximal development as children and their partners co-construct knowledge (Wertsch & Tulviste, 1992). Students who attended the literacy camp engaged in social interactions throughout the day. Students worked together in reading partnerships and small groups. They took part in hands-on science experiments in small groups in which they discussed their predictions and their findings.

Students also interacted with several teachers throughout the day who would be considered the MKO in respect to reading and science. Each class had a classroom teacher and an ENL teacher who worked together and often created smaller student to teacher ratios in the class. Students also worked with a library media specialist as well

as a STEAM consultant teacher twice a week who were able to lend their expertise by creating hands on learning activities for the students to take part in in order to solidify their learning in science. Teachers worked with students in small groups instructing students at their Zone of Proximal Development.

The Zone of Proximal Development refers to the skills that are too difficult for a child to master on his/her own but can be done with guidance and encouragement. Teachers met with students in small groups for guided reading in which teachers worked at the students' instructional level. The instructional level is in the Zone of Proximal Development. The instructional reading level is the highest level at which a reader is not independent, but has adequate background knowledge for a topic, and can access text quickly and with no or few errors (Fountas & Pinnell, 1996).

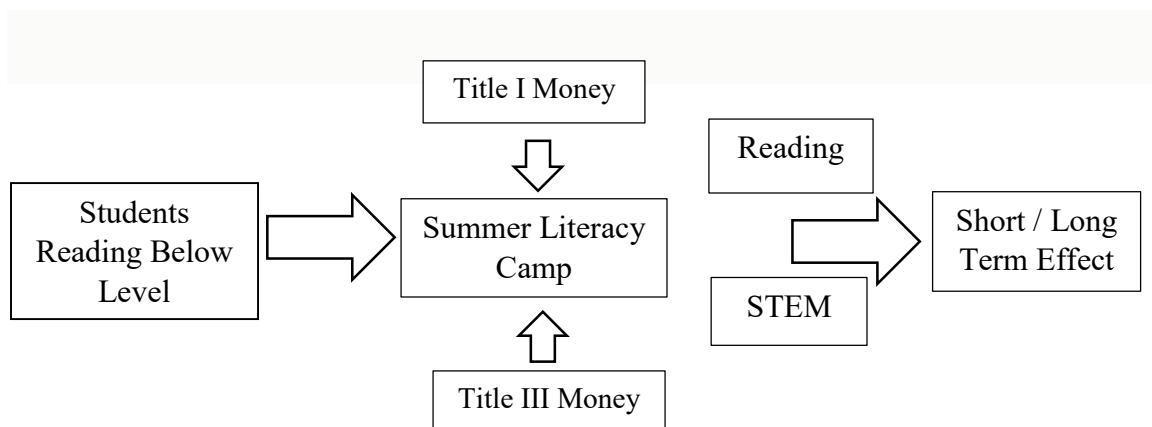
Figure 6. Vygotsky's social theory model.



Calkins also believes that it is important for students to work in the Zone of Proximal (ZPD), which is one of Vygotsky's themes of constructivism. The ZPD is the distance between a learner's ability to perform a task under adult guidance and/or with peer collaboration and their ability to solve the problem independently. This is why Calkins promotes the importance of students reading at their independent reading level and teachers teaching students at their instructional level, which is in the Zone of Proximal Development. Reading workshop, including reading independently at the independent reading level, guided reading at the instructional level, reading aloud, social interaction and student choice are all part of the balanced literacy approach that was utilized in the summer literacy camp that falls in line with Vygotsky's three major themes of constructivism. In addition to the increase in reading scores on aimswebPlus for those who attended the camp, the researcher believes that the students also benefitted from the social interactions they had, the teachers who supported them, and being instructed at their instructional level which in falls within the Zone of Proximal Development.

In addition to the impact on reading scores for those who attended, the researcher also believes that the camp had a positive impact on students for other reasons as well. Students who attended the camp received meals, books to keep at home, and social interaction that they would not have received had they not attended the camp. Further research needs to be done in order to see if there are long term effects for students who attend a summer literacy camp intervention.

Figure 7. Conceptual framework for summer literacy camp intervention.



Relationship to Prior Research

The data show that there was statistical significance to prove that students who attended the summer literacy benefitted more than those who did not. The aimswebPlus scores for those who attended the camp were higher in the fall than those who did not attend. When looking at reading levels, students who attended the camp did not have an increase in reading levels as shown by their benchmark assessments, but they did not decrease either, showing that there was no summer learning loss. Summer learning loss refers to the loss of knowledge and academic skills over summer months when students are out of school, and is widely recognized as a pervasive and significant problem in United States education (Zaromb et al., 2014). Students who attended the summer literacy camp grew on their aimswebPlus reading scores and mostly remained on the same reading level from spring to fall. The researcher believes that this shows that the summer camp did have an impact and if continued can help in closing the gap for students who attend. Zaromb et al. (2014) found that the negative effects of summer increase with increases in students' grade levels thus compounding the issue each year

and never giving students the time they need to close their achievement gap. It is important for students to have opportunities like this early on in order to give them the support and that they need to help close the achievement gap.

Summer learning loss varies with respect to grade level, subject matter, and socioeconomic status (Alexander et al., 2007; Cooper et al., 1996). While the data show that there was no significant growth for economically disadvantaged students, it also shows that there was no loss either. Research on summer learning loss has provided reliable evidence that the reading achievement of economically disadvantaged students slides back a few months every summer (Allington et al., 2010). Students who participated in the camp received books to take home and keep in order to give them access to books over the summer. A small set of studies reports that simply supplying poor students with books over the summer results in improved reading achievement (Allington et al., 2010). The researcher believes that students who are economically disadvantaged benefitted from attending the camp by having the opportunity to read in school and then had access to books to take home to continue reading over the summer. Students who attended the camp also received breakfast and lunch in school, which the researcher believes had a positive impact on the students.

While the reading levels did not grow for ELLs over the summer, they did remain the same. aimswebPlus levels grew for ELLS but did not prove to be statistically significant. A study done by Michael Kieffer showed that children who entered kindergarten with limited proficiency in English continued to demonstrate reading achievement below that of their monolingual English speaking peers through fifth grade (Kieffer, 2010). These findings suggest that students who enter school with limited

English proficiency or score low on early literacy measures never catch up. Research shows that it is possible to predict in early childhood who is at risk for later reading difficulties (Lesaux, 2012). This is why it is crucial to intervene as early as possible in order to close the gap for ELLs. Attending the summer literacy camp allowed all of the students to maintain the reading skills that they left school with in the spring. These students did not have to spend the first two months of the next school year making up lost ground. They were able to start the new school year where they left off, which over time can help to close the gap, and at the very least prevent the gap from widening for these students.

Limitations of the Study

Limitations of the study included the sample size and the length of the study. Ultimately, to get a more robust dataset and be able to make better generalizations, this study should be replicated in multiple schools and across several school districts.

Two possible threats to internal validity can be history and instrumentation. Differences among student experiences over the summer can influence reading levels. Students who read at home over the summer are more likely to not experience summer learning loss than students who did not read at home over the summer. The quality of the classroom experience that students had over the summer is also a variable as each pair of teachers created their own lesson plans.

During the school year, each classroom teacher administers their own reading benchmark assessment to obtain a student's independent reading level. Although there are specific protocols in place to administer these benchmark assessments, 27 different testers leave room for error. It should also be noted that there are two different testers

from spring to fall as the students change grade levels and teachers. Furthermore, teachers administer benchmark reading assessments earlier in the spring in order to give students the opportunity to receive instruction and practice with their independent reading level before summer break. Students are then given time to get back into their reading routine once school starts again in September. Benchmark assessments are not given until the end of September. This could account for the lack of movement in either direction for the reading levels.

Recommendations for Future Practice

The impetus for this research was to examine the effectiveness of a summer literacy camp intervention in order to help mitigate summer learning loss. In future, other school districts may want to consider realigning use of their Title I and Title III funds in order to create a summer literacy camp for their students. The summer literacy camp was effective for ELLs who benefitted from the additional support. The researcher believes the camp also benefitted economically disadvantaged students as it provided books at home and two meals a day.

While the intervention for this study focused on literacy, it could be beneficial to add mathematics to a summer program since there is research that summer learning loss has a greater effect on mathematics. Students who attend a summer literacy camp can benefit academically, but equally as important, they can benefit socially and emotionally through social interactions, consistent meals, and books to read at home. School leaders are urged to consider partnering with organizations like Long Island Harvest and KPMG in order to help support their most vulnerable students. It is important for interventions

like this to start early in order to mitigate summer learning loss and help close the gap for struggling students.

Recommendations for Future Research

The conclusions of this study can form a foundation for other studies that more deeply examine interventions that mitigate summer learning loss. Future work should include more schools across multiple school districts. This study should be replicated with a larger sample that spans geographic areas including rural, urban, and suburban school districts across the US in which there is an extended summer break.

In order to generalize findings to all elementary grade levels and students of varying economic statuses, the intervention should expand to include mathematics and this study should be replicated with analysis of mathematics scores. In addition, a qualitative piece should be added to examine the relationship between attending a summer literacy camp intervention and students' attitudes towards school. There is research that supports the notion that students who have a positive attitude toward school do better in school. Attending a summer literacy camp intervention that promotes social interaction, provides steady meals and books to read at home should have a positive effect on how students feel about school.

Future researchers should examine the relationship between attending a summer literacy camp and academic achievement over time in order to determine if summer programs can help to close the achievement gap for struggling students. A longitudinal study tracking students over time would give a more accurate picture of overall gains and losses than a one-time analysis of student data. Students who participate in a summer

literacy camp should be tracked using the same assessments given on the same dates in the spring and fall from kindergarten through fifth grade.

Lastly, future researchers should examine the effect the summer literacy camp had on academic vocabulary, specifically in the area of science. This summer literacy camp incorporated the NGSS because they elevate expectations for students' language and literacy development across the content areas and raised the bar linguistically and academically for all learners, especially ELLs. The NGSS were also used because of the explicitness of crosscutting concepts that connect interrelated ideas across science disciplines allowing students to make connections among science ideas. The topics were carefully chosen to help build students' prior knowledge in order to better prepare them for the upcoming school year. Future research should examine the impact an intervention like this has on students' achievement in science.

Conclusion

Districts need to provide for their struggling students over the summer to help mitigate summer learning loss. The Title I school in which the summer literacy camp took place recognized a need to make changes to its summer program in order to mitigate summer learning loss and close the gap for some of its most vulnerable students. Title I and Title III monies were reallocated and a new summer literacy camp was implemented in the summer of 2019. The summer literacy camp had classroom teachers and ENL teachers teamed together to create small teacher to student ratios. There was a STEAM theme each week and a STEAM coordinator and library media specialist who worked together to create meaningful and engaging hands-on science experiments that would prepare students with the academic vocabulary needed for upcoming science units in their

September grade level. A social worker was also on-site to continue the support that many of the students received during the school year. Students who participated received breakfast and lunch each day as well as books to take home to help build a home library through generous donations or organizations with which the school partnered. Students worked together and played together building relationships with each other and their teachers. The researcher believes that students who attended the summer literacy camp benefitted in even more ways than what was shown through the data.

Since the data that were analyzed did not have all of the expected results, the process of looking more closely at the data points and the benchmark assessments in reading added information that can help shape future studies to better determine the impact the camp had. In future studies, it would be more helpful to use only one benchmark reading assessment instead of the two different ones that were used for the different reading levels. The researcher recommends using the Fountas and Pinnell benchmark reading assessments for all reading levels instead of the using the Complete Comprehension Benchmark Assessment for levels K and above. Giving the assessment at the end of June and again at the beginning of September would give the researcher more accurate data to look at in conjunction with the aimswebPlus data. It also might be even more effective to give the benchmark by the same tester, preferable a trained reading specialist. These steps could provide more reliable data points in order to truly assess the impact the intervention had.

The data that were analyzed showed that the summer literacy camp intervention did not impact the reading levels of those who attended. Although the levels did not show growth, they also did not show loss. Most students remained on the same reading level in

the fall as where they had left off in the spring showing that there was no summer loss. The researcher believes that if the benchmarking was done differently the results may look different and show a greater impact. The data show that aimswebPlus scores grew significantly for all who attended the summer literacy camp. Furthermore, the data showed that ELLs who attended the camp grew more than ELLs who did not.

The researcher also believes that the students further benefitted from the books and meals that they received. Many students suffer from food insecurity over the summer. Students who attended the camp ate two meals and many brought leftovers home. Students who attended the camp received about 10 books altogether that were theirs to keep at the end of the program, giving them access to books at home. Finally, students benefitted from the support they received from their teachers, the social interactions that took place, and the academic support that they received in science to help prepare them for the next school year.

The summer literacy camp became virtual in the summer of 2020. We are hopeful that it will take place in 2021 so that we can continue to study and refine. Going through the process of this study validated the researcher's belief in the importance of a summer literacy camp intervention, especially for ELLs. Research must continue to identify causes and possible solutions to the achievement gaps we see in our most vulnerable students. School and district leaders must continue to look at the funds we are given for these students to initiate systemic reform practices in order to help close these gaps for good.

APPENDIX A

Institutional Review Board Approval Memo



Federal Wide Assurance: FWA00009066

Apr 15, 2020 11:34 AM EDT

PI: Patricia O'Regan
 CO-PI: Anthony Annunziato
 Dept: Ed Admin & Instruc Leadership

Re: Initial - IRB-FY2020-419 A QUANTITATIVE STUDY ON THE EFFECTS OF A SUMMER LITERACY CAMP TO HELP MITIGATE SUMMER LEARNING LOSS FOR STUDENTS ENTERING GRADES 1-5

Dear Patricia O'Regan:

The St John's University Institutional Review Board has rendered the decision below for A QUANTITATIVE STUDY ON THE EFFECTS OF A SUMMER LITERACY CAMP TO HELP MITIGATE SUMMER LEARNING LOSS FOR STUDENTS ENTERING GRADES 1-5.

Decision: Exempt

PLEASE NOTE: If you have collected any data prior to this approval date, the data must be discarded.

Selected Category: Category 1. Research, conducted in established or commonly accepted educational settings, that specifically involves normal educational practices that are not likely to adversely impact students' opportunity to learn required educational content or the assessment of educators who provide instruction. This includes most research on regular and special education instructional strategies, and research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

Sincerely,

Raymond DiGiuseppe, PhD, ABPP
 Chair, Institutional Review Board
 Professor of Psychology

Marie Nitopi, Ed.D.
 IRB Coordinator

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