

**THE EFFECTIVENESS OF A SUMMER REMEDIATION PROGRAM ON THE
ACADEMIC GROWTH OF ELEMENTARY STUDENTS**

A Doctoral Capstone Project

Submitted to the School of Graduate Studies and Research

Department of Education

In Partial Fulfillment of the
Requirements for the Degree of
Doctor of Education

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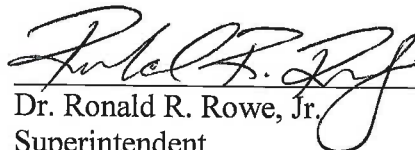
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Dedication

To my wife, Anne, and my two children, Carolin and Noah. Thank you for providing me the reason to push myself to be a better person each day. I love you all.

Acknowledgements

I would like to express my sincere gratitude to all of the individuals that helped contribute to this research study. Without the strong connection that has been developed between the faculty and staff of the Mercer Area School District and the families of the students that they work with each day I would not have had the opportunity to complete this research as part of my doctoral program.

To the Mercer Area School District Board of Directors, thank you for giving me the opportunity to conduct my research within the school district and to pursue a doctoral degree. I have thoroughly enjoyed working within the district and look forward to continuing to work to create an environment that provides opportunities for the students, faculty, and staff to experience success in all of the different avenues that they pursue.

To my faculty committee chair, Dr. Mary Wolf, thank you for your unwavering support throughout this process. You were always there to answer all my questions and to provide me the suggestions and feedback that allowed me to successfully complete this study.

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To Anne, Carolin and Noah, thank you for your continued support and encouragement. You continue to inspire me to be a better husband, father, and educator.

Finally, to my mother, Linda. You are the reason I chose to be an educator. Thank you for putting me on this path and providing unwavering support while you were with us.

Table of Contents

Dedication	iv
Acknowledgements	v
List of Tables	x
List of Figures	xi
Abstract	xiii
CHAPTER I. Introduction	1
Background & Identification of Capstone Focus	1
Research Questions	3
Expected Outcomes	3
Fiscal Implications	4
Summary	5
CHAPTER II. Literature Review	7
Introduction	7
Historical and Chronological Perspective of Previous Studies	8
<i>Baltimore Beginnings Study (BBSS)</i>	9
<i>Chicago Summer Bridge Program</i>	11
<i>Summer School 2000 and 2001</i>	13
<i>Meta-Analysis of Summer Learning Loss Research</i>	16
Subject Specific Learning Loss	20
<i>Loss in Mathematic Skills</i>	20
<i>English/Language Arts and Reading Learning Loss</i>	23
Factors That Influence Learning Loss	29
<i>Socioeconomic Status</i>	29

<i>Ethnicity</i>	31
<i>Special Education Services</i>	33
COVID-19 and its Impact on Learning Loss	36
<i>Response to COVID-19 Pandemic</i>	37
<i>Measurement of Learning Loss</i>	38
<i>Resources and Supports</i>	40
<i>Instructional Models and Practices</i>	41
Structure for Programming – School Calendar	46
<i>History of School Calendar in the United States</i>	46
<i>Year-Around School Calendar</i>	47
<i>Lengthening the School Day</i>	51
<i>Modified School Calendar and its Impact on Student Achievement</i>	53
Summary	54
CHAPTER III. Methodology	56
Introduction	56
Purpose	56
Setting	58
Participants	62
Research Plan	65
Fiscal Implications	67
Research Design, Methods, and Data Collection	71
Validity	75
Limitations	77

Summary	78
CHAPTER IV: Data Analysis and Results	79
Data Analysis	80
Results	85
Quantitative Data Analysis – Research Question 1	86
Quantitative Data Analysis – Research Question 2	92
Quantitative Data Analysis – Research Question 3	99
Qualitative Data Analysis – Parent/Family Survey and Summer Staff Survey	105
Verification of Data	127
Discussion	128
Summary	134
CHAPTER V: Conclusions and Recommendations	136
Conclusions	137
Research Question 1	139
Research Question 2	141
Research Question 3	143
Financial Implications	144
Limitations	149
Recommendations for Future Research	150
Summary	153
References	156
Appendices	174

Appendix A: Budget Overview – Elementary Summer Program & After-School Program	175
Appendix B: Mercer Elementary School Summer Program Parent/Family Survey	177
Appendix C: Mercer Elementary Summer School Program Staff Survey	181
Appendix D: Institutional Review Board (IRB) Approval Confirmation	185
Appendix E: Collaborative Institutional Training Initiative (CITI) Certifications	186

List of Tables

Table 1: Mercer Elementary School Total Student Enrollment for the 2020-2021 School Year	85
Table 2: Mercer Elementary School Summer Program Enrollment (Summer 2021)	86
Table 3: Average Change in RIT Math Scores for Students in Grades 2-6 (2020-2021 School Year)	87
Table 4: Average Change in RIT Reading Scores for Students in Grades 2-6 (2020-2021 School Year)	90
Table 5: Mercer Elementary School Summer Program Enrollment - Special Education Status	92
Table 6: Average Change in RIT Math Scores for Students in Grades 2-6 (2020-2021 School Year)	94
Table 7: Average Change in RIT Reading Scores for Students in Grades 2-6 (2020-2021 School Year)	97
Table 8: Mercer Elementary School Summer Program Enrollment - Socioeconomic Status	99
Table 9: Average Change in RIT Math Scores for Students in Grades 2-6 (2020-2021 School Year)	100
Table 10: Average Change in RIT Reading Scores for Students in Grades 2-6 (2020-2021 School Year)	103

List of Figures

Figure 1: Parent/Family Survey Question 1	106
Figure 2: Parent/Family Survey Question 2	107
Figure 3: Parent/Family Survey Question 3	107
Figure 4: Parent/Family Survey Question 4	108
Figure 5: Parent/Family Survey Question 5	109
Figure 6: Parent/Family Survey Question 6	109
Figure 7: Parent/Family Survey Question 7	110
Figure 8: Parent/Family Survey Question 8	111
Figure 9: Parent/Family Survey Question 11	111
Figure 10: Parent/Family Survey Question 12	112
Figure 11: Parent/Family Survey Question 13	113
Figure 12: Summer Program Staff Survey Question 1	116
Figure 13: Summer Program Staff Survey Question 2	117
Figure 14: Summer Program Staff Survey Question 3	117
Figure 15: Summer Program Staff Survey Question 4	118
Figure 16: Summer Program Staff Survey Question 5	119
Figure 17: Summer Program Staff Survey Question 6	119
Figure 18: Summer Program Staff Survey Question 7	120
Figure 19: Summer Program Staff Survey Question 8	121
Figure 20: Summer Program Staff Survey Question 9	122
Figure 21: Summer Program Staff Survey Question 10	123
Figure 22: Summer Program Staff Survey Question 11	123
Figure 23: Summer Program Staff Survey Question 12	124

Figure 24: Summer Program Staff Survey Question 14

125

Abstract

School districts are always exploring different ways to develop programs and activities for students in an attempt to provide opportunities for academic growth and achievement. One area of particular focus has been programs offered during the summer months to try to minimize and/or eliminate the “summer slide” that some students experience with the retention of the concepts and skills that they learned in the previous school year. The purpose of this study was to determine whether or not the implementation of a summer learning program within an elementary school has an impact on the academic growth of students. Comparisons were made between students that did and did not participate in the program, specifically students that have been identified to receive support services through an individualized education plan (IEP) versus those in a regular education setting and students that come from different socioeconomic backgrounds. A mixed-methods approach was utilized as the format for this study. Benchmark assessment data from a three-year period was analyzed as part of the quantitative portion of this action research project. Qualitative data was collected through surveys that were provided to both the families of students that participated in the summer program and the individuals that served as both instructors and assistants in the program during the summer of 2021. Findings from this study will be utilized during the planning for programming that will take place within the school district in subsequent years as part of a continued effort to provide opportunities for students to grow and develop academically.

CHAPTER I

Introduction

The COVID-19 pandemic has had a significant impact on the education of students at all levels (preschool, elementary, secondary, postsecondary, etc.) for nearly two years. While the Mercer Area School District was fortunate to return to in-person instruction at the beginning of the 2020-2021 school year and remained in-person for a majority of the year (elementary students had to transition to remote learning for a total of thirteen days and middle-high school students had to transition for a total of eighteen days, both during the first semester of the year), the potential exists for a gap in learning based on the mandated school closure that took place during the fourth marking period of the 2019-2020 school year. Programming needs to be established during both the summer months and after-school during the academic year in order to provide opportunities for students to eliminate any learning loss and make up for a regression in skills, behavior patterns, and/or a lack of progress through the curriculum that began with the period of school closure at the end of the 2019-2020 school year and continued through the 2020-2021 school year.

Background and Identification of Capstone Focus

As part of the researcher's position as assistant superintendent of the Mercer Area School District, one of tasks was to conduct a review of the practices at both the elementary and middle-high school in order to develop a system that fully ensures students who are academically at risk are identified early and are supported through a process that provides interventions based on individual student needs and includes protocols and procedures for monitoring the effectiveness of the program. This topic came to light during the process of reviewing and updating the comprehensive plan for

the school district, which will be submitted to the Pennsylvania Department of Education during the summer of 2022. Additionally, the school district implemented a summer program following the 2020-2021 school year in an effort to reduce and eliminate the learning losses experienced by all students in grades K-12 due to the COVID-19 pandemic. After-school programming was established during the 2021-2022 school year at both the elementary and middle-high school buildings to provide additional opportunities for remediation and support. Both the summer and after-school programs will continue throughout a two-year period following the study. The goal is for our administration, faculty, and staff to work collaboratively to ensure that best practices associated with instructional strategies, forms of assessment, supports, and interventions are being implemented within the classroom to facilitate the academic growth of students.

The American Rescue Plan – Elementary and Secondary Schools Emergency Relief Fund (ARP-ESSER) provided school districts with funding that is earmarked to address the impact of lost instructional time due to the COVID-19 pandemic. School districts must take a pre-determined portion of the funds to implement evidence-based interventions (i.e. summer learning and enrichment, extended school day, comprehensive after-school programs, extended school year programs, etc.). The presence of this funding stream has allowed the district to move forward with the planning to provide additional programming and activities for students, specifically in the summer months, in an effort to reduce and eliminate any gaps in learning that may exist due to the period of school closure that took place at the end of the 2019-2020 school year. This capstone research project will determine what impact these programs and activities have on the academic growth and achievement of elementary students.

Research Questions

The following questions will be used to provide the framework for this action research study:

- 1) What is the rate of academic growth of students that participate in an elementary summer remediation program (grades 2-6)?
- 2) What impact does a summer remediation program have on the academic growth of regular education students vs special education/learning support students at the elementary level (grades 2-6)?
- 3) What impact does a summer remediation program have on the academic growth of low socioeconomic status students vs non-low socioeconomic status students at the elementary level (grades 2-6)?

Expected Outcomes

The different forms of data collected as part of this capstone research project will be utilized to gain a better understanding of the impact that additional summer programming has on the academic growth and achievement of students and assist in the development and planning for programs in subsequent years. NWEA Measure of Academic Progress (MAP) testing in both Mathematics and Reading from a three-year timespan (2019-2020, 2020-2021, and 2021-2022) will provide benchmark assessment data that can be used to determine if participation in the summer program improved the academic growth and achievement of students in different subgroups (i.e. learning support/special education and socioeconomic status). Additionally, surveys completed by the families of students that were enrolled in the remediation sessions that were part of the summer program and by the instructors and assistants that worked with the students

during these sessions will allow for the collection of both demographic information and their impressions on the first year of the implementation of the program through responses to several different types of questions (closed-ended, open-ended, checklists, and Likert questions).

Fiscal Implications

Staffing for the summer program constitutes a significant portion of the funding that is needed to operate the program. A minimum of one classroom per grade level was established for the program (i.e. pre-kindergarten, kindergarten transitioning to 1st grade, 1st grade transitioning to 2nd grade, etc.). One teacher and additional staff (1-2 college students and/or aides/paraprofessionals serving as assistants) were assigned to each class to provide instruction and supervise the different activities that would take place each day. Both the classroom teachers and the assistants were paid a stipend for working with students in the summer program. The other cost associated with staffing involves the transportation of students. The district utilized van drivers to transport students whose families are unable to bring them or pick them up from the elementary school throughout the summer program. These employees were paid an hourly rate established within the classified salaries portion of the school district budget to assist with the transportation of students. The remaining portion of the budget for each summer is earmarked for the materials and supplies that are needed for the program. This would include additional classroom supplies (i.e. notebook paper, pencils, crayons, construction paper, etc.), along with the licensing and subscription for both NWEA MAP testing and the Edmentum/Study Island program that were utilized by the classroom teachers and assistants. As stated earlier, school district must use a portion of the American Rescue

Plan – Elementary and Secondary Schools Emergency Relief Fund (ARP-ESSER) to address the impact of lost instructional time due to the COVID-19 pandemic. These set aside monies will be used for a three-year period (2020-2021, 2021-2022, and 2022-2023) to providing the funding necessary to operate the summer program each year. The results from this study and the data collected in subsequent years will help determine if the summer programming will continue within the district following the summer of 2023.

Summary

The purpose of this capstone research project is to determine whether or not the implementation of summer programming at the elementary level has an impact on the academic growth and achievement of students. The mixed-methods approach used to collect both quantitative and qualitative data will allow the researcher to determine whether or not the students enrolled in the program were able to display academic improvement in comparison to the students that elected not to participate in any programs or activities during the summer, and to examine the perception of the program from the perspectives of both the families of the students who were enrolled and the staff that worked with these same students each day throughout the months of June and July. This information will be useful in determining what modifications and/or changes, if any, need to be made to the format and structure of the summer program in future years and whether or not to continue providing programs and activities to students during the summer months. The next chapter of the study will provide a comprehensive review of the existing literature that examines the impact of summer learning loss, the factors that impact this loss, and how previous research can be applied to combat any learning loss

that is associated with the COVID-19 pandemic. Chapter III will examine the methodology that was utilized when designing this action research project and the process that was used to collect different forms of data from the individuals that were identified as the subjects for the study. Subsequent chapters will provide the results that were obtained after a detailed analysis of the data and the conclusions that were reached for each of the research questions based on this information. These conclusions will help drive the decision-making process that will be used to determine the effectiveness of the summer programming, the planning that would be associated with the implementation of future initiatives within the school district to address academic growth and achievement of students, and recommendations for additional research moving forward.

CHAPTER II

Literature Review

It is easy to make the assumption that any breaks or interruptions to instruction could potentially create a gap in learning and achievement for students. The concept of summer learning loss has been researched and discussed for well over 125 years, dating back to the study conducted by William F. White in 1906 that examined a small population of 2nd grade and 7th grade students and their performance in mathematics. This was one of the first documented examinations of whether learning might have regressed during the summer months when students were not in a structured school setting (White, 1906). While the number of students within the study (19 total students – 7 in 2nd grade and 12 in 7th grade) was very small in size, the general findings have caused researchers and educators to continue to explore the concept of summer learning loss and its effects on student achievement. These efforts have been magnified given the current situation associated with the COVID-19 pandemic. Schools across the United States closed their doors during the spring of the 2019-2020 school year. This left educators across the country scrambling to find ways to provide instruction to students through online platforms, paper packets that were mailed or delivered to homes, or simple phone conversations between teachers and students. Unfortunately, interruptions in instruction and learning continued into the 2020-2021 school year. School districts across the country implemented different educational models, which included online learning, hybrid schedules, in-person instruction, or a combination of any of the three, in an effort to provide education to students on a daily basis. These interruptions and different learning models have the potential to widen the gaps in learning that exists for

different groups of students, but also bring loss in physical health, mental health and well-being, and college and career opportunities for years to come (Dorn et al., 2020).

The review of the literature will begin with an analysis of the historical and chronological perspective of previous research studies that examined summer learning loss and the different factors that influence this loss. A deeper examination into specific learning loss in mathematics and reading and the impact of socioeconomic status, ethnicity, and qualification for special education services will provide background information into best practices that can be implemented as part of additional programming that would take place outside the standard instructional day. The review will also include a discussion of how previous research on summer learning loss can apply to the strategies and interventions that school district across the country are implementing in an effort to combat learning loss associated with the COVID-19 pandemic. Finally, a discussion on the effects of instituting a modified school calendar or an extension of the school day as a tool to combat learning loss will conclude the review of literature. A better understanding of the interconnectedness of these different components will assist in the development of a blueprint to provide effective programming to students moving forward.

Historical & Chronological Perspective of Previous Studies

As previously stated, White (1906) was one of the first to conduct research that examined the effects of the summer break on student achievement. A multitude of studies (Alexander et al., 2001; Alexander et al., 2007a; Borman et al., 2005; Burkham et al., 2004; Cooper et al., 1996; Downey et al., 2004a; Downey et al., 2004b; Heyns, 1978) were reviewed to determine the relationship between programs and activities that

take place during the summer months and what impact, if any, they have on the academic achievement of students.

Baltimore Beginnings School Study (BBSS)

The Baltimore Beginnings School Study (BBSS), which began in the fall of 1982, consisted of a sample of Baltimore school students whose education progress was monitored over a period of 16 years from first grade through the age of 22 who were randomly selected from 20 public elementary schools (Alexander et al., 2001; Alexander et al., 2007a; Alexander et al., 2007b). The schools selected for the study were based on racial composition and the socioeconomic levels of students. Six schools had enrollments that were predominantly African American students. Six schools were predominantly White and eight other schools that were selected for the study were considered integrated. Fourteen of the schools were considered inner city/urban areas and six were middle-class neighborhood schools.

Scores on the Reading Comprehension subtest (CAT-V) and the Mathematics Concepts and Applications subtest (CAT-M) of the California Achievement Test (CAT) battery were used in the analysis, providing the researchers nationally normed results two times per year for a four-year period and one time per year for seven additional years (Alexander et al., 2001). Parent questionnaire results were combined with data collected from school records in order to determine the educational level and the socioeconomic status for each family for classification purposes. The descriptors used within the study were limited to “low”, “middle”, and “upper” socioeconomic status (SES) due to the fact that a majority of the sample population came from a large urban, low income area and there were “few genuinely wealthy families that were part of the BSS study” (p. 175).

When reviewing the results from the Baltimore Beginnings School Study (BBSS), a handful of conclusions can be reached. First, all of the students who were tested progressed at a much slower rate during the months of summer vacation as they did during the school year. This data falls in line with the research conducted by Heyns (1978) that examined reading and word recognition of students. Second, students with a low socioeconomic status display a loss in mathematical skills and achievement over the summer and, at best, maintain their reading achievement and skills. This pattern in the difference of achievement begins for students at the elementary level and accumulates over time as they progress into high school. The path that is followed by students from different socioeconomic status varies significantly for those that complete high school. When examining survey results for whether or not students that participated in the study had completed high school or attended college, the researchers found a difference of 133 points existed between the ninth-grade scores of students that were in the low SES group and did not complete high school and the scores of students in the high SES group that graduated and pursued a degree from a four-year college/university (Alexander et al., 2007b).

The inequality that is created at an early age can be traced back to the experiences of these youth prior to enrolling in kindergarten. Alexander et al. (2007b) reported that “children’s lives outside school over the preschool years and during the elementary grades account for almost all of the achievement gap that separates low and high-SES children at the start of high school” (p. 22). The preschool experience for students can be significantly different across social and socioeconomic lines (Hart & Risley, 1995). This lends support to the concept that disadvantaged youth start kindergarten and/or first grade

behind their higher socioeconomic peers (Lee & Burkam, 2002) and why they can continue to fall behind in subsequent years (Farkas & Beron, 2004; Phillips et al., 1998). Early interventions need to be put into place in order to limit the size of the achievement gap that could potentially develop in the first place. Different preschool education initiatives have been introduced throughout the years and have proven effective (Ramey et al., 1998; Schweinhart & Weikart, 1998; Reynolds & Temple, 1998). Once students have started formal education within the school system, year-around, supplemental programming should be established for disadvantaged youth in an effort to offset family and community conditions that hold them back (Alexander et al., 2007b). The final conclusion shared within the study discussed the need for an accountability system that would appropriately determine the school's effectiveness and assist with the identification of the needs of the students in an effort to provide appropriate programming and interventions. This process would provide opportunities for reflection by administration, faculty & staff, and students to determine the best approach to provide not only remediation for lost and deficient skills, but opportunities for enrichment and activities that address physical and social emotional wellness.

Chicago Summer Bridge Program

The Chicago Public Schools (CPS) began a national trend in 1996 by including a required summer program, Summer Bridge, as a key component in their efforts to end social promotion within their school system. By 1999, New York, Detroit, Boston, and Washington, D.C., as well as many other states, began to implement large mandatory summer programs for students (Johnston, 2000; Mathews, 2000). From the onset, the Summer Bridge program was considered innovative in comparison to previous

documented efforts to end social promotion based on test scores that were considered ineffective and unsuccessful (House, 1998; Roderick et al., 1999). The basis of the program was to set test-score cutoffs for third, sixth, and eighth grade students who were determine promotion to the next grade level. Students in each of these grades must achieve a minimum score on the Iowa Test of Basic Skills (ITBS) in mathematics and reading to move on to the next grade level. Those students who do not meet these minimum standards are required to participate in the Summer Bridge program and retest at the end of the summer. Students that still do not meet the criteria established from promotion are retained or, if they are age 15 or older, are sent to alternative schools called Transition Centers.

The results from the Chicago Summer Bridge Program study were unique in that they did not follow the trends of summer learning gains among older students. Prior evaluations of summer school showed that remedial summer programs tailored to students within the primary grades have a larger impact than those designed to serve middle-school age students (Cooper et al., 2000). Several different theories related to the larger than average gains by older students were presented by the researchers. One hypothesis suggested the focus of the curriculum on basic mathematics and reading skills led to the large test-scores gains for eighth grade students. The analysis conducted by Cooper et al. (2000) found that teachers in early-grade/primary programs tend to report using the summer to provide more individualized and creative instruction to students, while teachers at the middle-school level tend to focus more on general study skills within specific content areas. This would lead to the notion that the age difference observed in the analysis of previous studies may be driven more by instructional content

provided and the main focus of the program versus the age-related differences in the effect of the program. Another theory for the larger effect amongst older students relates to the motivation of the students to meet the established criteria for grade level promotion. The eighth-grade students had a larger consequence to face if they did not achieve the established cut score on the ITBS, which was not moving on to high school. These older students were much more sensitive to grade retention, have the ability to shape their own learning, and have a great capacity to self-motivate and put forth effort.

The overall results of the analysis of the first three years of the Summer Bridge program within the Chicago Public School (CPS) show a positive effect across gender, ethnicity, socioeconomic status, and grade level. Several programmatic components (small class sizes, instructional support, and prescribed curriculum) have all been supported by prior research as keys to a successful summer program. Small class sizes historically produce more long-term benefits for students, especially those that are categorized as low performing (Finn & Achilles, 1999; Nye et al., 1999). Additionally, there were fewer noninstructional demands on the teaching staff during the summer, allowing for a greater focus on instruction and assessment. The combination of these two items would lend themselves to the positive results that are associated with student growth and achievement within the program. Sustaining these gains long-term is an area where future research on specific protocols and procedures can be conducted moving forward.

Summer School 2000 and 2001

The Massachusetts Education Reform Act, adopted in 1993, was a systemic initiative that examined all aspects of public-school education from Kindergarten through

twelfth grade. One component of this legislation was the creation of the Massachusetts Comprehensive Assessment System (MCAS), a series of criterion-referenced tests that are used to evaluate student knowledge within the framework of the established curriculum. The MCAS tests are mandatory for all public-school students and serve as the key component for the evaluation of the performance of both students and schools in the state of Massachusetts. In 2001, the MCAS tests in English/Language Arts and Mathematics became high-stakes assessments for all 10th grade students with the requirement of a proficient/passing score on each exam in order to graduate from high school, similar to the requirements for proficiency on Keystone exams in Algebra I, Biology, and Literature within the state of Pennsylvania that will go into effect during the 2022-2023 school year. Students that did not successfully complete one or both exams at the end of their 10th grade year were given four additional opportunities to take the test and achieve the required passing score. In order to meet the challenges of improving test scores and proficiency at all grade levels, the Boston Public Schools (BPS) along with other districts across the state of Massachusetts began developing both summer programs and school-year programs to improve student achievement.

The Transition Services Program is the key initiative in the efforts of the Boston Public Schools (BPS) to improve student learning, specifically academically at-risk students in grades 3, 6, and 9. These grade levels were determined to be crucial years in the education of students. Students in the third grade are transitioning from “learning to read” to “reading to learn” (Portz, 2004). Students in sixth grade and ninth grade are transitioning to middle school and high school. Students should not be promoted to these grades if they are not able to read grade-level text, communicate their understanding of

content in writing, and master grade-level content. Both a school-year program and summer program were established to provide additional learning opportunities for students in mathematics and reading. This included additional instructional time, a targeted curriculum, and support services before and/or after-school. The second component of the program was summer school. The program lasted four weeks with students attending four hours per day for four days per week.

The successes that were achieved in the second year of the program could be related to the use of the following components that were reviewed and discussed by school personnel prior to planning for the summer of 2001 (Portz, 2004):

- Design of summer curriculum – A prescribed, detailed curriculum needs to be provided to all staff members.
- Relating the summer curriculum to school year curriculum, specifically in mathematics.
- Educating all students in a diverse classroom and the lack of teacher training to meet the needs of all students.
- Preparation of teachers for summer program – appropriate certification, experience in grade level/content area.
- Professional Development opportunities – Workshops were made available to teachers but no compensation was provided.
- Providing materials within classrooms – ensuring that they arrive on time and are available from the first day of instruction.
- Maximizing student participation – find a way to convince students and their families that participation is critical to their education.

All of these components identified throughout the two years of the program are similar to many that are reviewed and discussed by school district personnel when establishing a new program or making changes to an existing initiative. The challenges that still

remained relate specifically to finding ways to educate all students with different needs and learning styles within the classroom and findings ways to promote participation in the program. Active participation in any type of programming is essential to the success of the initiative and to the success that the students achieve by engaging in the lessons and activities created by the faculty and staff.

Meta-Analysis of Summer Learning Loss Research

The 1996 meta-analysis conducted by Cooper et al. (1996) was a compilation of the empirical studies that had been completed up to that point that examined the impact of summer vacation on the retention and acquisition of academic skills and material by children. The research was completed to determine the overall effect of summer vacation, as well as “the differential effect for different subject matters and for students with different personal and familial characteristics” (p. 229). The research review that was conducted identified 39 research reports that contained descriptions of empirical studies that tested the effect of summer vacation on the achievement of students. A majority of these studies (26) were completed prior to 1975, more than twenty years prior to the meta-analysis, and did not rely on statistical testing and data. The interpretation of these early studies showed a loss of mathematical computation and spelling skills over the summer vacation, but no loss in the other categories (math concepts; problem solving or reasoning; reading comprehension) used in the vote-count synthesis.

Thirteen studies that measured the impact of summer vacation on the achievement of students conducted after 1975 were also used within this meta-analysis. One particular piece of research, the Sustaining Effects Study (SES), was reviewed independently due to the size of the study and varying interpretations that had been established by a number of

researchers. Data was collected on 120,000 students as part of a nationally representative sample of elementary schools for three consecutive years, beginning in the fall of 1976 (Carter, 1984). Ginsberg et al. (1981) were the first to use data from the Sustaining Effects Study (SES) to examine the impact of summer vacation on student achievement. The purpose of their study was to retest the results that were reported by Heyns (1978). They used a nonrepresentative subsample of 2,500 students in their analysis from a broad geographical area. The database used by Heyns (1978) only included children from the Atlanta area. A summary of their findings stated that “any relationship between achievement change and socioeconomic status is, at best, tenuous” (p. 21) when examining summer learning and the economic background of the student. Klibanoff and Haggart (1981) analysis using the same SES data but with a larger sample size (39,000) led to the following conclusion:

With the exception of the declines in math [vertical scale scores] for [Grades] 3-4 and 4-5, the results...do not provide much support for the notion of an absolute loss over the summer...It is also clear from the data, however, that the gains made during the summer by CE students are somewhat smaller than those made by non-CE students...This relative loss is clearly more evident in reading than in math. (pp. xxiv-xxvi)

Heyns (1987) conducted a follow-up study, noting that the less advantaged group of students achieved gains at a much slower rate. Bryk and Radenbush (1988) analysis focused on the relationships of both student poverty and school poverty concentration and the impact that each had on mathematics and reading scores. Working with a smaller subset of SES data (618 students from 86 schools from grades 1-3), their results showed a

significant drop in summer learning for both subjects. It is not surprising that each of these different researchers came to different conclusions with their findings given the varying subsets of data that were utilized within each study. Cooper et al. (1996) noted that sample sizes were an issue with all of the studies that they reviewed, beginning with the White study (1906) of 19 students to Hayes and Grether (1969) that used a population of 370,000. This was one of the main reasons why data from the Sustaining Effects Study (SES) was weighted differently during the meta-analysis that was conducted on studies completed after 1975.

The meta-analysis completed by Cooper et al. (1996) also looked at the number of days within a summer interval, with the average number of days in the spring-to-fall testing interval being 131, “equivalent to the number of days in the months of June, July, August, and September, plus the first 10 days of October” (p. 259). This would indicate that the periods of instructional time, both at the end of the year and the beginning of the subsequent year, are typically included when analyzing testing data to determine summer learning loss. If summer learning were truly measured from the last day of school to the first day that students return the following year, the effect of summer vacation could, in fact, be more detrimental than previously measured in any study. Cooper et al. (1996) found that the average student’s fall score was one tenth of a standard deviation below where it had been in the spring ($d = -.09$), which is roughly a loss of one month on a difference in grade-level equivalent (DGLE = $-.09$). Losses were larger in mathematics ($d = -.14$), specifically mathematical computations, than in reading and language-related subjects ($d = -.05$). These conclusions are similar to those of Murnane (1975), who suggested that reading and language skills are learned both at home and in school, while

practice and learning in mathematics typically takes place more in a formal school setting.

Cooper et al. (1996) examined the influence of grade level and reported that students in grades four and above showed a significant loss in achievement while first and second grade students showed nonsignificant gains in achievement over the same period of time. One possible explanation for these influences is called the “floor effect in scaling” (p. 263). This concept states that student scores in lower grade levels may show less variances from national norms due to the amount of time that the student has spent in school up to that point. It is important to remember that while the summer effects may be small when considering the “floor effect”, the learning that takes place in these first years of schooling have a direct impact on future learning for students moving forward.

Cooper et al. (1996) concluded their study by looking at the implications that their research on summer learning loss in the context of potential changes in how the school calendar is developed. Educational policymakers need to weigh the idea of increasing the amount of instructional time for students versus finding ways to improve the use of the time that currently exists within a daily school’s schedule (Karweit, 1985). Additionally, programs aimed at math instruction for all groups and reading instruction for low socioeconomic status student should be a focus when planning for remedial instruction and summer programming.

Several suggestions for future research are provided by Cooper et al. (1996). The first is additional research on the effect of summer breaks at both early grade levels and high school levels to continue to investigate the long-term impact of interventions and programs that are put into place to combat summer learning loss. Determining the length

of programs each summer and whether or not continued participation in this type of programming is needed to sustain the academic gains achieved by students is necessary for school personnel to plan appropriately and address the needs of their student population. Additionally, the researchers reference the need for studies that “estimate the “pure” effect of summer vacation by employing test dates that more accurately capture the vacation interval” (p. 264). When diagnostic testing is completed at both the end of the school year and at the beginning of the subsequent year has a significant impact of how the results of these tests are interpreted. Finally, the impact of how much time passes between instruction and testing before there is an overall negative influence on student achievement is an area worth further exploration.

Subject Specific Learning Loss

As you can see, a significant amount of research has been conducted to determine why children’s skills, specifically in mathematics and reading, regress over the summer months. Losses by students with a low socioeconomic status designation are well documented and pose a challenge for school leaders as they look for ways to level the playing field and provide equity for all students in the opportunities that relate to academic achievement. Interventions and programming can and should be put into place in order to negate this summer slide for students of varying backgrounds in both mathematics and reading.

Loss in Mathematic Skills

Lynch and Kim (2017) conducted a study that examined the effects of an online, home-based summer math program for low socioeconomic status students in an attempt to determine if a program with this structure could be a cost-effective alternative for

schools that do not have the resources to provide in-person instruction during the summer months. Three groups were created with the random assignment of students from the sample: control group, a treatment-only group that received access to the Tenmarks online mathematics program, and treatment group that received access to the Tenmarks program plus the use of a free laptop computer. Results showed that students who were offered an intervention (programming and/or programming + laptop) scored higher on the measure of summer home and family mathematical engagement than their peers in the control group. In contrast, students in the control group had higher fall national assessment-based math scores than both intervention groups. The study showed that there was an increase in student engagement with regards to mathematics throughout the summer months with the offering of the Tenmarks online mathematics program and the program with a free laptop computer for access, but there is a lack of evidence that shows these increases equated to positive results in student achievement.

Partnerships with community organizations can provide the resources that are necessary to offer summer programming to students. Tuft and Bachler (2016) conducted research in conjunction with the United Way, using K-6 students, many of which were low socioeconomic status and non-white in ethnicity. The limitations of this study include the number of students that were enrolled within the program (61 total) and the voluntary nature of participation and attendance by these students (54 attended two or more times; 35 attended twenty or more days). Despite these limitations, participation in summer programming did have a positive impact on mathematical skills of students at all grade levels, reinforcing that summer school programs can lessen the decreases in

academic achievement that take place over a summer break (Borman & Dowling, 2006; Cann et al., 2014; Lauer et al., 2006).

The mathematical performance of second grade students and the relationship to activities that took place during the summer months was the basis for a study conducted by Wright (2011). The Group Mathematics Assessment and Diagnostic Evaluation (GMADE) and a parent survey were used as the instruments within the study, which included a total of 57 students and their families. The parent survey, which was an adaptation of the survey used by Heyns (1978), was developed to identify different summer activities for each participant within the study. Testing data from the three subtests showed an average decline in test scores from the spring to the fall of 2010 for the total test and each of the subtests within the GMADE (Concepts and Communication = -6.49 points, Operations and Computation = -5.42 points, Process and Application = -2.12 points, and Total Test = -4.789 points). Results from the survey should significant differences in the participation of students in summer school (3 out of 56), summer vacations (49 out of 57), independent reading (55 out of 56), video games (42 out of 57), and educational games (45 out of 57) (Wright, 2011). The data did show that a summer learning loss is present regardless of the activities or programs that students participate in during the summer month, which has been established in previous research that has been conducted (Borman et al., 2005; Carter, 1984). Similar to the other studies referenced in this review, recommendations for future research included a determination as to what period of time between instruction and testing creates a decline in skills, especially in mathematics. Additionally, examination of the structure of the school calendar and its impact on instruction should be part of the conversation when

looking at eliminating the learning loss of students. This will be examined in greater detail later within this literature review.

English/Language Arts and Reading Learning Loss

The gap in the academic achievement of low socioeconomic and high socioeconomic students has been documented throughout this literature review and has been a concern of educators and policymakers for a significant period of time. The passage of the first Elementary and Secondary Education Act (ESEA) and the accompanying Title I legislation in 1964 assured funding to support and improve reading programs for students across all socioeconomic lines (Mraz & Rasinski, 2007).

Continued revisions to ESEA over the next forty years provided equitable resources for students, including the creation of programs that assisted limited English proficiency students, migrants, and neglected youth. The No Child Left Behind Act of 2001 (2002), which included the Reading First and Early Reading First programs in 2001, created pressure associated with accountability and achievement and how it relates to literacy education.

Mraz and Rasinski (2007) conducted a review of 13 empirical studies that represented approximately 40,000 student and found that students from lower socioeconomic status families experience a decline in literacy skills over the summer months while students from middle-income level families show a slight improvement. Measured over one year, this gap in achievement is estimated to be close to three months between these two groups of students. Accumulated over the length of elementary school (grades 1-6), the potential loss in reaching achievement over the summer months could equate to 1.5 years (Copper et al., 1996). Several reasons are discussed within the study

as to why summer learning loss in reading can occur. The first is the amount of time that students spend reading outside of school. The amount of time that a child spends reading is the best predictor of achievement – the more a student reads, the better reader they become (Allington, 2006; Anderson et al., 1988). Unfortunately, students do not always have opportunities to read outside of the classroom (Coats & Taylor-Clark, 2001), perpetuating the lack of development of these important skills. Additionally, the lack of awareness of a child's parents to the benefits of reading to their child and/or their lack of confidence in their own reading skills lead to an insufficient amount of time spent strengthening literacy skills outside of the classroom. Mraz and Rasinski (2007) did outline several recommendations for interventions that could assist in the efforts to prevent summer reading loss:

- Workshops provided by school personnel for parents to reinforce the importance of summer reading and provide suggestions for summer engagement.
- Implementation of a summer reading program (i.e. Reading Millionaires) to encourage participation by students throughout the summer months with incentives/rewards and recognition for reaching pre-established milestones (Rasinski and Padak, 2004).
- Find and utilize reading materials that connect to student's interests.
- Make connections between movies/TV shows that students watch with their families and other daily activities to different books and other reading sources (i.e. magazines, newspapers, internet, directions, etc.).

Neuman et al. (1998) identified the following elements for successful literacy programs that engage and encourage family participation:

- Establishment of a sense of community
- Effective interpersonal skills displayed by teachers
- Ongoing and varied communication

- Consistent recruitment efforts to encourage family participation
- Suggesting a variety of literacy activities that can be completed within the home
- Teachers understanding of family challenges (Mraz & Rasinski, 2007, p. 787)

Deshommes (2013) examined the effects of summer reading programs, as well as the public perception of these programs. Parent/guardian surveys, standardized test scores, and an informational interview of a school employee constituted the data collected and analyzed from the elementary school. NWEA Measures of Academic Progress (MAP) test results from a random sample of 24 students who participated in the summer reading program and 24 students who did not participate in any summer programming were used as the standardized test scores within the study. MAP test are computerized tests that are adaptive, with the difficulty of each question increasing or decreasing based on the student's answer to the previous questions within the assessment (Northwest Evaluation Association, 2011). The significance of this particular study is the format that was utilized to gather data for interpretation. The MAP Benchmark assessments for both Mathematics and Reading are the same diagnostic tool will be used as a key source of achievement data for elementary students that will be the subjects for this capstone research project. Additionally, survey results from parents/guardians of students that participated in summer programming within the district and from the instructors and assistants that facilitated the program were analyzed as part of the study.

In the conclusions that were included as part of the discussions with the study, Deshommes (2013) suggested that a more effective way to determine the effectiveness of a summer reading program would be to use quarterly assessments administered at the end of the fourth quarter of the school year and in the first quarter of the subsequent school

year to more accurately determine gains or losses in relation to participation or non-participation. This follows a similar mindset that has been expressed by numerous researchers that have examined summer learning loss and its impact on student achievement. Survey and questionnaire results showed that both parents/guardians and teachers felt summer programming would be beneficial for students, but potential barriers that exist (i.e. funding, transportation, attendance and participation, etc.) would need to be addressed in order to successfully implement any type of summer reading program. The researcher recommendation to expand summer reading programs was a partnership between a non-profit entity and the school district. This collaboration would provide access for students to school district curriculum and resources throughout the summer months and provide proper funding to maintain and expand the programming being offered to youth.

Zvoch and Stevens (2015) conducted an analysis using three consecutive cohorts (2008-09, 2009-10, and 2010-11) of first grade students in a moderately-sized Pacific Northwest school district that were invited to and participated in the school district's summer school program. The five-week program took place in the middle of the summer vacation period, with four weeks windows existing on both ends of program (i.e. program starts four weeks after the end of the school year and ends four weeks prior to the start of the next school year). The significance of the timeline used within this study provides an opportunity to collect data specific to instruction during the school year and to the instruction that is provided as part of the summer program. Two different models were used to interrupt results from the Test of Oral Reading Fluency (TORF) that was completed both during the school year and as part of the summer school program. The

three-segment model group test results for participants into three groups: three tests during first grade; three tests conducted in the summer; three tests in second grade. The five-segment model reconfigured TORF results into five different categories: growth over three tests in first grade; change between end of first grade and beginning of summer school; growth during summer school; change between end of summer school and the start of second grade, growth over three tests in second grade.

Results from the three-segment model revealed students increased fluency during all three period of time measures, with the greatest gains occurring throughout the second-grade school year. The only subgroup that experienced any difference were those students identified to receive special education services, who grew at a slower rate than that of their general education peers. Analysis using the five-segment model showed that during the times of direct instruction (i.e. first grade school year, summer school, and second grade school year) yielded growth in fluency levels for all student groups. The two additional periods of time within this model (i.e. time between end of first grade/start of summer school and end of summer school/start of second grade) showed rates of fluency that were either flat or negative in nature, reinforcing the importance of continued instruction with students on a regular basis.

Patton and Reschly (2013) examined the use of curriculum-based measures to examine summer learning loss in reading for elementary students. In order to better determine the difference in student achievement and growth over a period of time (i.e. fall to spring), the measure must be “sensitive to small changes over short intervals, a characteristic that most published, standardized norm-referenced tests do not possess” (p. 740). While the school collects DIBELS oral reading fluency (ORF) data three times

per year, benchmarking testing data from both the spring and fall was used for all participants (317 total) in order to measure summer learning loss. This testing took place in the first week of May (two weeks prior to the end of school) and during the second week of school in August.

When comparing results from the spring and fall DIBELS ORF without increase in the passage level (i.e. using the same passage when assessing students in the spring and again in the fall), Patton and Reschly (2013) determined that second and third grade students displayed loss in reading skills while students in fourth and fifth grade did not have a significant difference in their scores from the spring to the fall. The examination of socioeconomic status and its impact on summer learning loss, second grade students that qualify for free and reduced lunch had the greatest loss for any group. While this was the only grade-level group that showed a loss based on family income, it is important to note that this differential loss, accumulated over multiple summers and combined with common differences in the initial status of students from low-income situations, can amount to a two to three year gap in reading skills by the time that they reach middle school in comparison to their peers who come from middle to upper class backgrounds (Allington & McGill-Franzen, 2003). Areas suggested for future research based on this study include the process of recoupment and the growth patterns of students. How quickly students recoup reading skills and whether this rate varies based on grade level and/or subgroup warrants additional examination. Additionally, what are the growth rate patterns of students throughout the school year? Research conducted by Ardoin and Christ (2008) suggests greater growth taking place between the fall and winter compared to the winter and spring, while analysis by Graney et al. (2009) implies the opposite.

These questions will help better determine the types of interventions and programming that is implemented with different groups of students.

Factors That Influence Learning Loss

There are multiple factors that can potentially contribute to any learning loss that is experienced by students. Socioeconomic status, ethnicity, and the qualification for special education services can all have an impact on the academic achievement and growth of students starting prior to their formal education in elementary school, throughout the primary grades, and continuing to the secondary level in middle and high school. Understanding how different groups of students learn and developing programs and activities that will support these different learning styles is imperative to curbing any learning loss experienced by students and closing the achievement gap that may exist.

Socioeconomic Status

A multitude of studies have been conducted across the country that examine the achievement gap that exists between different socioeconomic groups and how it grows more during the summer months than during the school year (Downey et al., 2004a; Entwisle & Alexander, 1992; Heyns, 1978). This data in combination with findings that show achievement gaps based on socioeconomic status develop prior to students entering kindergarten (Brooks-Gunn et al., 2006; Duncan & Magnuson, 2011) reinforce the impact that time in school has on children. The seasonal comparison research that has been conducted has yet to answer the question of why students with a lower socioeconomic status learn at approximately the same rate as their peers from a higher socioeconomic status during the school year.

Entwisle et al. (1997) introduced the idea of the “faucet theory” when it comes to the learning of students of different socioeconomic status:

When school is in session, the faucet is turned on for all children, the resources children need for learning are available to everyone, so all children gain. When school is not in session, children whose families are poor stop gaining because for them the faucet is turned off. The resources available to them in summer (mainly family resources) are not sufficient to promote their continued growth. (p. 37)

When examining the “faucet theory” concept, one must understand that there are two faucet systems for each student, a school faucet and a home faucet. The school faucet provides the same resources and opportunities for all students, regardless of their socioeconomic status, creating a level playing field for children to learn during the school day. The home faucet is where the differences exist and create the achievement gap for students from a lower socioeconomic status. The resources that are available to these families do not compare to those for higher socioeconomic status children. Because students only spend a portion of their day in school over the nine-months that it is in session, the impact of the home faucet has a lasting effect on academic growth of children and the learning loss that takes place during the summer break. This reinforces the need for summer programming within schools for students. By keeping the school faucet on in the summer months, children would continue to have access to all of the resources available and can work with staff members to not only eliminate any gaps in learning, but also potentially experience opportunities for enrichment that will allow them to grow academically.

Ethnicity

Researchers have examined the differences in the achievement of students along social divides like socioeconomic status and race since the 1960s (Neal, 2006; Reardon, 2011). Many of the studies focused specifically on achievement differences between African American students and White students. Because of the ever-changing make-up of student populations across the country, it is beneficial to expand the research to other groups when possible to determine whether the ethnicity of a student and their family directly impacts their achievement levels and academic growth.

Atteberry and McEachin (2016) conducted a study using data from NWEA Measures of Academic Progress (MAP) within a school district in a southern state that administered the assessment in both the fall and spring to students in grades two through nine over a five-year period. When making comparisons based on ethnicity and grade level spans (African American and White students in grades 2-5 and 6-9, Latino and White student in grades 2-5 and 6-9), African American students and Latino students experienced less of a gain academically during the school year and also had a larger loss in learning over the summer period. Given that all students, regardless of ethnicity, experienced some level of loss during the summer months, the development of summer programming as a way to provide interventions and remediations was recommended.

Kim (2001) examined achievement data for students for Lake County Public Schools, a large, suburban school district over a three-year span in three grade level cohorts (grade 3-4, grade 5-6, and grade 8-9). Based on predictions for the 2000 Census (U.S. Census Bureau, 1989), minorities groups accounted for nearly one third of the population within Lake County (Asian – 13%, Latinos – 11%, and African American – 8.6%). Because of this diverse sample of students, the four major ethnic groups were

represented in the analysis of student achievement. The analysis of the data gathered for this study showed that students from each of the groups experienced a reading loss at both the low and middle socioeconomic levels within all three grade level cohorts over the three-year period. One potential explanation for the reading loss for the Asian and Latino student population is that a large portion of these students make up the English as a Second Language population within the school district. The lack of any instruction during the summer months, in combination with home environments that potentially utilize multiple languages for communication, could be a contributing factor for lower assessment scores. There were several groups (middle-income Asian students at all three grade level cohorts and low-income African American students in the grade 3-4 and grade 8-9 cohorts) that experienced gains in math achievement, contradicting previous research that had been conducted on summer learning loss and math skills. Because a list of the summer activities that students participated in (i.e. summer school, summer camps, etc.) was not collected, it is unclear if there were any activities that would have impacted the gains that students experienced academically over the summer break.

As stated earlier, student populations continue to change and become more diverse on a daily basis. Examining the impact of a student's ethnic background and home environment on student achievement is another piece of information that can be utilized by school personnel to determine what types of programming and activities need to be put into place to provide opportunities to eliminate any gaps in learning and also promote academic growth both during the school year and over the summer break.

Special Education Services

Students with disabilities typically experience more regression over the summer break than students without disabilities (Barnard-Brak & Stevens, 2019; Celano & Neuman, 2008; Kim & Quin, 2013, Slates et al., 2012). Because of this, extended school year services (ESY) can be put into place for students with an individualized education plan (IEP) in order to reduced or eliminate any potential learning loss over the summer. One of the issues that currently exists with this process is determining the eligibility of students for ESY services. In order to qualify for services, students must be considered at risk of “substantial regression” (Queenan, 2015) without ready recoupment (i.e. within the first six weeks of school) (*Armstrong v. Kline*, 1979; *Battle v. Pennsylvania*, 1978; *Reusch v. Fountain*, 1994). Based on a study conducted by Barnard-Brak and Stevens (2019), roughly six percent of students with disabilities across the country are receiving ESY services. Using a standard of twenty percent or more regression in reading and mathematics achievement scores over a summer break that are not recouped over the first six weeks of the next school year, Barnard-Bark and Stevens (2019) estimate that approximately fifteen percent of students should qualify and receive ESY services. Because individual school districts use varying methods and criteria for determine the eligibility of students for ESY services, there has not been substantial research completed to determine best practices for making these decisions. The development of a valid and reliable screening instrument, utilized in conjunction with other measures of student progress through the school year, would assist in the determination of what students need to participate in ESY or summer programs to avoid potential learning loss and gaps in achievement.

The social emotional skills of students can serve as either an academic enabler or an academic disabler when it comes to student achievement and growth (DiPerna & Elliott, 2002). Incorporating social emotional learning opportunities into the instruction that takes place, whether during the school day or as part of summer programming that is implemented within the school, increases the likelihood of improved academic performance of students (Durlak et al., 2011). The National Summer Learning Association (2008) recommended that summer learning programs should integrate academic instruction with different enrichment activities (i.e. physical, recreational, cultural). This combination of both academic and enrichment activities may increase student attendance and motivation to participate in the program, while, at the same time, provide structured social emotional learning opportunities for this at-risk population (Klem & Connell, 2004). Zeng et al. (2016) conducted a study to examine the impact of incorporating social emotional learning opportunities into a summer learning program. A control group (47 students) received literacy instruction over a five-week period in the summer, while the treatment group (45 students) received a combination of the literacy instruction and enrichment activities provided by the local Boys & Girls Club. Both groups of students showed improvement in their literacy skills based on the instruction that was provided. The treatment group displayed significant increases in their social emotional skills, while the control group digressed in several areas of social emotional learning (i.e. emotional symptoms and peer problems). This data supports the idea of developing a more holistic approach to summer programming, providing both an academic and social emotional component, in an effort to meet the needs of the students.

One of the student populations that receives special services that is often overlooked when discussing summer programming are twice exceptional children. These students, identified as gifted and learning disabled, have unique learning and socialization issues (Coleman & Cross, 2001). This is due to the potential need for both gifted programming in areas of strength and remedial instruction in areas associated with their disability. Yssel et al. (2005) completed a project where a one-week camp for twice-exceptional students was held that provided a combination of gifted programming, social emotional skill development, and sessions focused on the development of organizational skills. Observations and feedback from post-camp surveys confirmed several of the characteristics outlined in previous literature. Students that participated in the camp performed well on tasks that required abstract thinking (Silverman, 1989) and had excellent oral vocabulary skills (Vaughn, 1989). Frustration levels and a fear of embarrassment when confronting an area of weakness reinforced the idea of incorporating activities geared towards working with the whole child when developing any type of programming for students.

As stated earlier, students that have been identified with a disability (academic, social emotional, behavioral, physical, etc.) are more likely to experience some level of learning loss due to the summer break. Extended school year services (ESY) is one option that can be utilized to provide the instruction necessary to mitigate any loss that could occur over the summer. Additional programming should be put into place for those students that do not meet the thresholds established for ESY services that will address identified academic deficiencies and, at the same time, provide opportunities for other

activities (i.e. field trips, physical activities, etc.) that will enrich and strengthen the social emotional skills that are necessary to achieve student growth.

COVID-19 and its Impact on Learning Loss

The COVID-19 pandemic has intensified the discussion surrounding the examination of learning loss for students at all levels. While all of the studies referenced up to this point have focused on summer learning loss, the application of the research to the current climate can be utilized to shape the response of school district personnel as they continue to look for ways to work with students and their families to close any gaps in learning that were created starting in the spring of 2020 with the closure of school across the country and continuing into the 2020-21 school year with the implementation of various instructional models (i.e. hybrid learning, remote learning, and/or in-person instruction). Dorn et al. (2020) estimated that of the 13,000 public school districts across the country, roughly 60 percent of students began the 2020-21 school year participating in remote/online instruction, 20 percent in a hybrid model of both remote and in-person instruction, and 20 percent returning to full in-person instruction in the classroom. With 80 percent of students participating in instruction outside the classroom in some way or form, discussions about best practices must remain an essential component of the decision-making process for school district personnel. These best practices must include how to effectively and accurately calculate the learning loss incurred by students, the resources and supports that are available for students and their families, and the effectiveness of different instructional models that are implemented to remediate loss in learning and, at the same time, also provide opportunities for enrichment and acceleration when applicable.

Response to COVID-19 Pandemic

The main focus throughout the COVID-19 pandemic has been the health and safety of all individuals, both in school and at home. Because COVID-19 is transmitted through respiratory droplets, aerosols, and to a lesser extent, surfaces that have been infected (Centers for Disease Control and Prevention [CDC], 2020a), school personnel have implemented strategies and practices within school buildings in an effort to reduce opportunities for exposure to the respiratory droplets and aerosols and mitigate the spread of the virus. Physical or social distancing has been the most utilized strategy to contain the spread of the virus (Centers for Disease Control and Prevention [CDC], 2020b). The amount of distance between individuals has varied between three feet and six feet depending on the situation. Chu et al. (2020) conducted a review and meta-analysis of 172 observational studies across 16 countries and found that social distancing of at least three feet (1 meter) or more led to an 80 percent reduction in the likelihood of exposure to the virus. While there can be challenges to maintain three to six feet of distance within the classroom on a regular basis, school personnel have become creative in their use of space both inside and outside of school buildings to create additional space to use during the school day.

Cleaning protocols within schools have also been modified and increased in order to sanitize high-touch areas and surfaces to reduce the transmission. Ries (2020) provided evidence that transmission from surfaces is not as significant of a threat as the spread of the virus through the exchange of respiratory droplets with person-to-person contact. School personnel have still put procedures in place to clean high-traffic areas and classrooms within their buildings more frequently and with greater efficiency.

The practice that have created the most conversation and, in a significant number of school districts, the most backlash from families and community members is the use of face coverings. Various studies (Chu et al., 2020; Mitze et al., 2020; Zhang et al., 2020) provide data supporting the use of face coverings to both decrease the likelihood of exposure to and reduce the spread of the virus between individuals. School personnel need to ensure that they implement proper protocols and procedures for the use of face coverings within school buildings, as well as the steps that need to be followed in the event that their child is unable to wear a face covering due to a medical condition. Engaging different stakeholder groups (i.e. students and their families, community members, school board members, faculty and staff, etc.) when creating the health and safety plan will also allow individuals to provide input throughout the process. While everyone may not agree with the parameters that are outlined in the plan, they will have an opportunity to have their voice be part of the conversation. Clearly defining the practices to be implemented in order to mitigate the spread of COVID-19 will allow faculty and staff to maintain their focus on providing quality instruction within the classroom on a daily basis.

Measurement of Learning Loss

A variety of assessment tools and testing strategies can be implemented to try to determine the gap in learning that exists for a student or a group of students. In order to do this effectively and truly determine the loss that has occurred, several different factors need to be considered by school personnel prior to engaging in the assessment of students. The first idea to consider the difference between “learning loss” and being “rusty” (Educational Endowment Foundation, 2020). The distinction between the two

determines the amount of time that students need to regain the different concepts and skills. If a student has not used a specific procedures or practice for an extended period of time (i.e. summer break or COVID-19 shutdown), then it is not likely that they will be able to perform this task with any fluency upon their return to school. If, however, they mastered the skill and have just not used it recently, the amount of time needed for recoupment may be reduced.

The type of assessments that are used to measure whether or not a student has experienced learning loss can impact how this gap in achievement is measured. If the test that is administered at the end of the school year is designed for a specific grade level and the test administered at the beginning of the subsequent year is for the next grade level, measuring the amount of learning lost may create problems for the individual gathering the data due to the varying difficulty levels for each of the assessments. Without using proper vertical scaling to standardize the tests, the gap may appear wider than what actually exists for a student or group of students (Bielinski et al., 2020; von Hippel & Hamrock, 2019). A computer-adaptive test (CAT) is one model that can be utilized to achieve this result. Scores are converted to values that represent a continuum of skills, regardless of the grade level of the student, providing a better way to compare the learning of students both during and between school years.

The impact of different instructional models enacted during the COVID-19 pandemic are a key component in measuring the levels of achievement and determining if any gaps exist for a student or group of students. Most studies that have been conducted on remote learning are based on cyber charter schools and do not represent the larger public-school population (Dorn et al., 2020). Studies on the impact of a hybrid model on

student learning, as well as, social emotional health and the reducing in the spread of the COVID-19 virus would assist in the implementation of assessment strategies to determine the effective of instruction during both the periods of school closure and the instructional time that students spent outside of the classroom within the hybrid model.

Resources and Supports

With all of the different aspects of the COVID-19 pandemic that we have discussed (i.e. periods of school closure and disruptions to instruction, structure of instructional model, new policies and procedures for daily operations in school buildings, etc.), a structure needs to be put into place to provide resources and supports for all individuals involved in order to maintain the daily instruction that needs to take place to foster student learning and closing any gaps that exist in student achievement. The Center on Positive Behavioral Interventions and Supports et al. (2020) outlined several key areas as part of the critical system needed to consider when developing an action plan to utilize when working with different stakeholder groups prior to the start of school and at periodic points throughout the school year:

- **Leadership team** – Members of the team should come from different departments (administration, faculty, guidance, health services, technology, etc.) at both the district level and building level to maintain a clear action plan centered on data-drive decisions to promote both academic and physical health of all individuals within the building.
- **Engagement of Stakeholders** – Regular communication should take place through various platforms (i.e. social media, school district website, newsletters, phone calls, etc.) to gather input and to keep different groups (families,

community members, school board, medical professionals, etc.) informed of changes that may take place throughout the school year.

- **Training** – Opportunities to provide professional development and training to faculty and staff members with the district should be explored and scheduled prior to and throughout the school year. Activities should be based on best practices and relate directly to the situations that exist within the district and/or school building.
- **Evaluation** – The collection of data for both academic needs and social emotional health should occur on a regular basis to 1) identify students that need additional support and interventions and 2) determine the effectiveness of the program that is currently in place and what changes, if any, need to be made to address the needs of the students and the staff.

These different components allow school district to remain connected to the different groups, identify areas of needs, enact the supports necessary both academically and physically, implement best practices for instruction in multiple platforms, and monitor the progress of students at designated points throughout the school year. Successful implementation of each component will assist in the creation of a positive and effective school climate that is focused on the health and safety of all individuals involved on a daily basis and will allow for the management of disruptions and changes that needs to take place when necessary.

Instructional Models and Practices

The instruction that is provided to students through different methods and models has improved throughout the COVID-19 pandemic. Teachers are better prepared to meet

the challenge of providing daily lessons and activities for students utilizing different materials and platforms. The key is to keep student involved, regardless of the model of instruction that is provided. Hurwitz and Malick (2020) found that the engagement level of students is the single greatest challenge to overcome when attempting to develop effective remote learning practices. Studies conducted on asynchronous learning versus synchronous learning show that, on average, instruction with little or no interaction with a teacher yields worse academic achievement than that of the traditional classroom setting (CREDO, 2015; Fitzpatrick et al, 2020; Gill et al., 2015). Feedback and support provided by classroom teachers increases student participation and also fosters the development of stronger teacher-student relationships.

Good instruction, whether it is virtual, hybrid, or in-person, requires proper planning and preparation. Modifications and adaptations can be made to fit the model that is going to be utilized to provide lessons and activities to the students when needed. Online instruction, whether in synchronous or asynchronous in nature, requires additional planning and preparation by the teacher. In both instances, a strong working knowledge of the platform being utilized is imperative. Eliminating any issues or glitches in the use of technology will allow for the focus to remain on student learning. In a synchronous model, the teacher is still providing daily instruction in a framework similar to the one that they would utilize if all of the students were sitting in the classroom. The only difference is that the students are in their homes using an electronic device (i.e. laptop computer, Chromebook, tablet, smartphone, etc.) to participate in the lesson. When instruction is provided through an asynchronous model, there are additional variables that teacher need to account for in their planning and preparation. Because the students are

not engaged in face-to-face instruction within this format, teachers need to map out several days or the entire week and determine how much materials is required each day, what assignments need to be completed and when they need to be submitted, how the lesson is presented to the students (i.e. reading the textbook, videos uploaded by the teacher, etc.), and what type of interaction, if any, is available for the students with the teacher. These additional parameters can create additional stress on both the teacher and the students if proper training is not provided to everyone involved. Professional development opportunities should be provided to faculty and staff prior to implementing any form of online instruction. Additionally, students that are going to participate in any form of virtual instruction, whether through a complete online model or in a hybrid schedule, should work with a teacher or staff member from the school prior to become familiar with the format prior to complete implementation of the program.

Once the teacher has determined what they want the students to learn and the way they are going to provide the instruction, the next step is to develop the assessment that will be used to measure whether or not the students have acquired the desired skills and knowledge (Kimmel et al., 2011; Kimmel, 2019). These assessments should be created to not only measure the mastery of content and skills through the use of specific performance indicators, but also provide feedback to both the students and the teacher in the identification of strengths and weaknesses for the individual and/or the entire class. This becomes even more important when implementing different platforms for both instruction and assessment. All teachers are equipped to assess students within an in-person setting (face to face instruction within a school building). The transition to remote learning requires them to potentially use different methods or platforms to modify

their assessments in order to collect the necessary data to accurately measure student achievement and make information decisions regarding any changes that may be required to instructional delivery and/or resources. As stated earlier, proper training for the teachers in the development of online assessments and for the students that will be completing them must be scheduled prior to implementation of these practices to ensure that everyone has a proper understanding of the process and the format(s) that will be utilized.

Additional instruction, whether remediation or enrichment, must be developed and work in concert with the planning for the lessons and activities that take place on a daily basis. These additional supports when put into place should provide opportunities for application of material taught in class or to reinforce defined areas of deficiency in order to fill gaps in learning that may exist and provide students the opportunity to get back on track with the content area and/or grade level. J-PAL Evidence Review (2020) involved a meta-analysis of 96 different studies that were conducted on tutoring or intervention programs that have been implemented since 1980 and provide a list of components to consider when developing any programs that would provide additional interventions for students:

- **Type of Tutoring/Enrichment** – Most successful programming involves classroom teachers providing the instruction to the students. Non-teaching professionals (i.e. paraprofessionals, college students, members of the community, etc.) and families can also be utilized to provide additional support to students outside of the classroom.

- **Characteristics of the Curriculum** – The material that is used in supplemental instruction should have a connection to the content area and/or grade level of the student. Most programs focus on additional instruction in either English/Language Arts and/or Mathematics, but opportunities in other content areas (History, Science, etc.) can be connected to both ELA and Math in order to provide remediation and/or enrichment in a cross curricular model.
- **Format** – Programming that is provided during the school day typically has more of an impact than those provided after-school due to the participation of students. Additionally, the group size can vary based on the availability of staffing to provide the support. Small group and one-on-one interactions typically provide stronger results than those of a large group setting.
- **Frequency** – The frequency of the sessions provided will depend on whether or not they take place during the school day or after-school. Typical sessions last 30-60 minutes, whether in-school or after-school, and can take place 1-5 days per week. Younger students (grades K-2) showed a stronger benefit from additional sessions each week due to increased repetition in the skills that were being developed and practiced. (J-PAL Evidence Review, 2020, p. 4)

Monies allotted to school districts through different phases of the Elementary and Secondary School Emergency Relief Fund (ESSERS FUND) have provided them with the resources necessary to implement these types of programs to address learning loss associated with the COVID-19 pandemic. The key is to develop a structure that will provide the supports necessary to allow all students to participate and benefit from the program, regardless of whether or not it is providing remediation or enrichment.

Structure for Programming – School Calendar

Discussions regarding the structure and format for the school calendar has been a by-product of the research associated with the learning loss experienced by students. Adding time to the existing school day and/or increasing the number of days that students are in school are options that have been discussed as ways to improve the academic achievement of students within the United States (Brown et al., 2005). The implementation of different models at both the state and district levels have led to little agreement regarding 1) the relationship between the academic achievement of students and the length of the school day and 2) whether extending the amount of time that students are in school or lengthening the school year is an effective intervention strategy for improving student achievement (Patall et al., 2010). Understanding how the current school calendar was created, the different options that are available, and the barriers that potentially exist with making any type of change are important components for any school community that is potentially going to make any changes to the length of the school day or adding additional days to the school calendar.

History of School Calendar in the United States

School calendars that were created during the early years of formal school in the United States varied based on the individual needs of each community (Gold, 2002). Students in rural and agricultural areas typically only attended school for five to six months and spent the remainder of the year helping their family with work that needed to be completed on the farm. It was common for the schools in these communities to have long summer breaks and extended time off in both the spring and the fall to allow for the students to assist with both planting and harvesting crops. At the same time, schools in

urban areas had a very different format, operating on a school calendar that had students in schools eleven or twelve months of the year. In 1840, schools in the cities of Buffalo, Detroit, and Philadelphia had school calendars that ranged from 251 to 260 days on instruction, and school in New York City were open twelve months of the year with a two-week break in August (Johnson & Spradlin, 2007; Weiss & Brown, 2003). Changes occurred throughout the early part of the 20th century with rural schools slowly adding more days to their school calendar and urban schools creating longer summer breaks for students. An increase in mobility of families led to additional efforts to create a calendar that would facilitate the implementation of a standardized curriculum for students.

Families that were transitioning from one community to another wanted to ensure that children of similar age groups were learning the same concepts and skills in both their new community and the one that they just left behind. By the 1960s, the school calendar that exists today for most districts (i.e. 9 months of the year, 180 days, 5 days a week, 6.5 to 7.5 hours per day) became the standard for schools throughout the country (Silva, 2007). While a majority of schools across the country continue to utilize this format, many states began to explore other options and alternatives for structuring the amount of time that students are in school.

Year-Around School Calendar

The number of schools that utilize a year-around calendar increased from 410 in 1985 to 3,700 in 2011-2012 (Skinner, 2014). This equates to over 2 million students attending school year-around in the United States. Despite this significant increase, there is little to no attention given to this concept when looking at different interventions that can be implemented within a school district to increase student achievement and

academic growth. Typically, the conversations that occur are centered around offering summer school sessions and programming to remediate deficiencies in skills and/or provide opportunities for credit recovery that will allow students to move to the next grade level. The issue with these types of strategies is that administrators and teachers are waiting the entire school year to put a program into place. A year-around school calendar allows for the creation of smaller breaks throughout the school year (i.e. three to four weeks) that could be utilized to provide opportunities for supplemental instruction and additional activities following the completion of either a marking period or semester. Remediation and interventions can be put into place that would focus on the specific skills and/or concepts that students struggled with over the last six to nine weeks of school rather than trying to address multiple issues that have compounded over the nine-month period that exists in a traditional school calendar. Additionally, opportunities for both enrichment activities that expand upon the concepts taught in the previous marking period and acceleration through the curriculum can also be made available to students. Exposure to these opportunities on a regular basis during these breaks, often referred to as intersessions (Ballinger, 1995) can lead to reduction in the number of students that need continued remediation over an extended period of time.

In addition to programming and activities that would take place during the periodic breaks in the school year, O'Sullivan (2013) identified five different reasons why schools should consider the transition to a year-around calendar:

- **Globalism** – In order for our country to compete globally with an adequately prepared workforce, steps need to be taken to effective use of time and minimize the learning loss of students during extend breaks in instruction.

- **Decreasing the Achievement Gap** – Year-around schooling allows all students regardless of socioeconomic status, ethnicity, etc. to take advantage of the instruction provided within the school. Additionally, the stigma of having to attend summer school is eliminated with instruction taking place over a twelve-month period for all students.
- **Family Benefits** – The elimination of the long summer break will decrease the need for families to find arrangements for child care while school is not in session in the summer.
- **Increased Teacher Professionalism** – The implementation of a year-around calendar would provide additional opportunities for professional development and training during the school year. A teacher’s position would no longer be considered a ten-month position, while would alter the view of many outside of the school system of teachers having the summer off. This increase in the respect for the position and the responsibility of planning for instruction and activities that would occur over a twelve-month period could create better, highly qualified candidates for teaching positions.
- **Combating Child Labor** – A change to the school calendar would reduce the number of students that take summer jobs, specifically in the agricultural industry. An estimated 400,000 children work in agriculture in some shape or form during the summer months (Boyd, 2010). This has led to abuse of child labor laws, with children receiving fewer wages and being exposed to dangerous situations given the nature of this type of work.

While there are potential benefits associated with modifying the school calendar, several obstacles and opponents to this type of change would also exist. The tourism industry thrives on students being out of school during the months of June, July, and August. Amusement parks and summer vacation destinations help support the local economy in many communities with the influx of money generated by families that travels to these different cities during the summer months. Many of these groups also rely on students to fill positions and work throughout the summer, continuing the previous arguments outlined regarding child labor. Arguments are also made regarding the learning that takes place outside of the classroom during the summer months. Students participating in internships or job shadowing experiences, summer camps designed to explore the performing arts, athletics, or academic fields, and traveling to different places both in and out of the country are opportunities that families engage in during the long summer break. Schools would need to develop activities that would take place during the break that would occur during the school year that would provide opportunities to connect the learning that takes place within the classroom to these enrichment experiences. Finally, the funding needed to operate a school twelve months of the year would need to be addressed as part of any change to the school calendar. The impact on the salaries of school personnel and the change in the operating procedures for the facilities are two of the most significant financial hurdles associated with this type of change. Negotiations with each of the different bargaining units that exist within a school district (i.e. administration, faculty, support staff, facilities, cafeteria, transportation, etc.) would have to take place to discuss what changes, if any, would occur to the salary structures for each of these groups with the increase in the number of

days they would work in a given year. Potential upgrades to each of the building within the district due to having students in school during the summer months (i.e. air conditioning, increase use of utilities, etc.) would also need to be examined to determine the additional monies needed to keep the facilities open year-around and how that would impact the operating budget of the school district.

Lengthening the School Day

Increasing or providing additional time during the school day is another option that school personnel have explored as possible way to address learning loss experienced by students during the school year. A key factor when considering this option as a possibility is the relationship between the amount of time allocated during the day and the amount of time students are engaged and receiving instruction in the classroom (Denham & Lieberman, 1980; Karweit & Slavin, 1981). If students have periods of “down time” throughout the day and the scheduled time within the classroom is not being used effectively by the teacher, increasing the length of the school day would have little to no effect of the achievement of the students (Funkhouser et al., 1995, Karweit, 1985; Levin, 1984). Administrators must work collaboratively with the faculty and staff to examine how the time periods allotted within the current master schedule are used and what changes, if any, needed to be made to this structure before exploring adding more time to the existing school day. This would involve discussing instructional practices, assessment strategies, classroom management techniques, and all other aspects of the day-to-day operations of a classroom within a school building. Once it has been determined that the students and staff are effectively using the time within the current schedule, discussions and planning that involve lengthening the school day can begin.

Increasing the amount of time students spend in school, whether adding days to the school calendar or adding more time to each day, can potentially cause backlash if the proper communication does not take place with each of the stakeholder groups within the school district (i.e. students and families, faculty & staff, school board members, community members, etc.). How the additional time in school would be utilized, the impact that extending the school day has on the different extracurricular activities for students, and the financial implications of a change to the daily schedule for staff are all aspects of the process that would need to be clearly defined in any plan for increasing the amount of time in the school day. As stated earlier, just adding more time to each class during the school day will not directly impact student achievement and growth if it is not used effectively. The use of evidence-based instructional practices and structured activities that provide remediation and/or enrichment and their impact on student achievement are needed to justify the extension of the school day (McDonald et al., 2009; Meier, 2009; Ross et al., 2007). Additionally, ensure that students will still have the same opportunities to participate in athletics, performing arts, and other activities that they have in the current structure is necessary to have the support and buy-in necessary to implement the change. There is valuable learning that takes place outside of the classroom when students engage in different activities and an effort needs to be made to ensure that they are still available when changes are made to the school day. Finally, the financial implications associated with adding time to the school day for each of the different bargaining groups must be examined by school personnel in order to determine the impact that potential increases in salary, additional training for staff, and the

resources necessary to effectively implement programs and activities have on the operating budget for the school district.

Modified School Calendar and its Impact on Student Achievement

As stated previously, Patall et al. (2010) conducted a systemic review of previous research to examine 1) the relationship between the academic achievement of students and the length of the school day and 2) whether extending the amount of time that students are in school or lengthening the school year is an effective intervention strategy for improving student achievement. In their analysis of fifteen studies, all conducted after 1985, the researchers found that extending school time has a neutral to small positive effect on achievement and is particularly beneficial for students at risk for failure (i.e. low socioeconomic status, minorities, English language learners, low achieving students, etc.). Winters (1995) reviewed nineteen studies of schools that transitioned from a traditional school calendar to a year-round model and identified forty-one areas of school performance (i.e. math assessment scores, progress levels in reading, etc.) that were examined within these studies. Thirty-six areas of performance, showed an improvement in student achievement results based on the changes to the school calendar and none of the other areas measured showed a decline.

Cooper et al. (2003) conducted a meta-analysis of forty-seven studies from forty different school districts. All of the studies examined within this analysis included some program comparison of students that attended school with a modified calendar and students that attended school with a traditional calendar. Similar to both Patall et al. (2010) and Winters (1995), this meta-analysis found that a modified school calendar does have a small impact on student achievement and there were no student groups that

digressed because of additional time spent in school. One additional component of this analysis that was significant was the examination of survey results provided by different stakeholder groups (i.e. students & families, faculty & staff, and administrators) and their reactions following the implementation of a modified school calendar within their schools. More than 80% of responses within the surveys from the 50 different school districts described positive attitudes and experiences based on the new structure for the school calendar.

Future research on modifications to the school calendar and/or the length of time in the instructional day should examine the long-term effect of extended school time on student achievement. Tracking the same group of students over a defined period of time would provide valuable data regarding the effect of extended school time and whether or not it is cumulative in nature. Additionally, measuring the effectiveness on the amount of time a school day is extended and/or the number of days added to the school calendar and its impact on student achievement would provide school personnel the information necessary to determine how much additional time, if any, should be added to maximize student growth.

Summary

There are a multitude of factors that can be examined and reviewed when trying to determine what caused learning loss, whether over the summer break or during a period of school closure. Students at all grade levels come from extremely diverse backgrounds and home situations that put them at either an advantage or disadvantage when they walk through the doors into the school building each day. School personnel have to determine what type of programs and activities need to be put into place to

provide remediation to close any gaps in learning and, at the same time, also provide opportunities for students to receive enrichment and potentially accelerate in an effort to promote the academic growth of students.

The COVID-19 pandemic and the periods of school closure during both the last marking period of the 2019-2020 school year and periodically throughout the 2020-2021 school year have brought to light the impact that daily instruction has on students and the need to “keep the school faucet running” as long as possible (Entwisle et al., 1997). The implementation of after-school programs and summer programs can help students from all different backgrounds (socioeconomic status, ethnicities, and special education services) receive the instruction that is necessary to close any gaps that currently exist, at the same time, participate in activities that address other areas that impact student learning (i.e. social emotional health and physical health). The goal of this study is to determine if the implementation of a summer learning program with elementary students will eliminate any gaps in learning that were created due to school closures associated with the COVID-19 pandemic and what practices should be incorporated into the summer program to provide long-term success and academic growth for all students.

CHAPTER III

Methodology

The COVID-19 pandemic and its impact on students at all levels (preschool, elementary, secondary, postsecondary, etc.) had reinforced the need for school districts to establish programming for students in an effort to provide remediation that will reduce or eliminate any learning gaps that exists and, at the same time, provide opportunities for enrichment and growth to promote the continued academic development of students. Programs and activities that take place throughout the school year (after-school, weekends, etc.) can be used to reinforce the instruction that is taking place within the classroom each day. Summer programming can be put into place to avoid a regression in skills, behavior patterns, and/or a lack of progress through the curriculum from one school year to the next. Funds earmarked within both the American Rescue Plan – Elementary and Secondary Schools Emergency Relief Fund (ARP-ESSER) and the ESSER (ARP-ESSER) 7% Set Asides Consolidated Fund will assist school district in developing and implementing these types of programs and activities in an effort to provide opportunities that will reinforce the continued academic growth and development of students.

Purpose

The purpose of this action research study is to determine what impact the implementation of and participation in a summer learning program has on elementary students, specifically in grades 2-6. Quantitative data in the form of NWEA Measure of Academic Progress (MAP) testing results in both Reading and Mathematics for students that participated in the summer learning program during the summer of 2021 and for students that chose not to participate will be examined for a three-year time period.

Qualitative data will be gathered through the use of surveys provided to the families of students that participate in the program, as well as the instructors and assistants that worked with these students. The use of both quantitative and qualitative data will provide valuable information to the school district to determine best practices that should be implemented within the programs that are established to both assist in the elimination of any learning gaps that may exist for students and to provide opportunities for long-term academic growth and development.

The review of literature reinforced the notion that there are a multitude of factors that contribute to whether or not a student experiences a loss in learning. Gaining a historical perspective through the review of numerous studies (Alexander et al., 2001; Alexander et al., 2007a; Borman et al., 2005; Burkham et al., 2004; Cooper et al., 1996; Downey, et al., 2004a; Downey, et al., 2004b; Heyns, 1978) allowed the researcher to better understand the relationship between summer programs and their potential impact that they have on the academic achievement of students, specifically in the areas of Mathematics, English/Language Arts, and Reading. Entwisle et al. (1997) discussed the concept of the “faucet theory” and how the creation of summer learning programs within schools allows students to continue to access the resources that are necessary to not only eliminate gaps in learning that exist, but to also provide opportunities to experience enrichment activities that will foster continued growth academically, socially, and emotionally.

Numerous studies have been conducted that show students with disabilities typically experience more regression over the summer months than their regular education peers (Barnard-Brak & Stevens, 2019; Celano & Neuman, 2008; Kim & Quin,

2013, Slates et al., 2012). While extended school year services (ESY) can be put into place for students with individualized education plans (IEPs), the barriers that currently exist within this program limit the number of opportunities that are available for students to take advantage of throughout the summer months. The implementation of programming for all students, regardless of their academic and/or socioeconomic status, allows all youth to participate in various activities and lessons that will help reduce and/or eliminate any loss in learning that would be experienced during the summer.

Setting

The Mercer Area School District, which is comprised of the Borough of Mercer, Coolspring Township, East Lackawannock Township, Findley Township, and Jefferson Township, is located in the south-central portion of Mercer County and encompasses ninety-one (91) square miles. Situated halfway between the cities of Erie and Pittsburgh, Mercer is home to the County Seat and serves a student population of approximately 1,031 students in a primarily rural setting. The two (2) school buildings within the district, Mercer Elementary School, which houses students in grades K-6 and Mercer Middle-High School, which houses students in grades 7-12, has approximately 45.2% of its students classified as economically disadvantaged and 26.3% of the population receiving learning support services. The predominant ethnicity within the district is White/Caucasian (93.11%), with the remaining population being made up of Multiracial (3.98%), Hispanic (1.55%), African-American (0.78%), and Asian (0.58%) students. The school district partners with the Mercer County Career Center, offering opportunities for students in grades 10-12 to participate in fifteen (15) different career programs in preparation for post-secondary education and employment. Additionally, the

high school offers a variety of Advanced Placement courses and currently partners with St. Francis University to offer college credits in 10 courses across a variety of disciplines. Because the district exceeds the threshold of 40% or more students classified as economically disadvantaged, each building can be designated as a Title I school and all students are eligible to receive additional services during the school day. Currently, the elementary school provides supplemental instruction in both Mathematics and Reading to all students in grades K-6 using designed staff members assigned to specific grade levels (K-2, 3-4, and 5-6). The middle school (grades 7 & 8) is in the process of implementing plans to provide similar services in both Mathematics and English/Language Arts beginning in the 2022-2023 school year. An application will be completed by the district to initiate the process of providing services to students at the high school level (grades 9-12) beginning in the 2023-2024 school year.

The Mercer Area School District has received numerous accolades due to the success of our students and staff over the years and has been ranked in the top 25% of all school districts in Pennsylvania with respect to academic accomplishments. Additionally, a national study rated Mercer as one of the top 10 districts in the state with respect to spending and achievement. In 2015, the Mercer Area School District received a first place Magna Award from the National School Boards Association for "Best Practices" across the United States.

The study took place at Mercer Elementary School. According to the Pennsylvania Department of Education's Future Ready PA Index (2018a), 68.1% of students were advanced or proficient on Pennsylvania State Assessments (PSSAs) for English/Language Arts during the 2018-2019 school year, which was above the state

average of 62.1%. Additionally, 61.1% of students were either advanced or proficient in Mathematics, which was placed this group of students above the state average of 45.2%. The percentage of students that were advanced or proficient in Science (83.3%) was above both the state average (66.0%) and the statewide 2030 goal (83.0%). When examining whether or not elementary students meet the annual academic growth expectations through the testing data calculated in the Pennsylvania Value Added Assessment System (PVAAS), all student groups met the standard demonstrating growth in English/Language Arts (79.0%), which was greater than both the statewide average growth score (75.0%) and the meeting statewide growth standard (70.0%). All student groups did not meet the standard demonstrating growth in Mathematics based on the score of 56.0%. This score, which was a decrease from the previous school year, was below both the statewide average growth score (75.3%) and the meeting statewide growth standard (70.0%). All elementary student groups exceeded the standard demonstrating academic growth in Science with a score of 82.0%. This score exceeded both the statewide average growth score (75.1%) and the meeting statewide growth standard (70.0%). Finally, when reviewing additional measures calculated through the Future Ready PA Index, the attendance rate at the elementary school meets the performance standard established by the Pennsylvania Department of Education. The percentage of regular attendance for the 2018-2019 school year was 89.7%, which was above the statewide average of 85.8% but below the statewide 2030 goal of 94.1%. All student groups at the elementary school exceeded the Career Standards Benchmark with 100.0% score. This perfect score exceeded both the statewide average (89.8%) and the statewide 2030 goal (98.0%).

Because of the school closure that took place during the fourth marking period of the 2019-2020 school year due to the COVID-19 pandemic, students across Pennsylvania did not complete state assessment testing (PSSAs and/or Keystone Exams) during the spring of 2020. With no new testing data and insufficient attendance records due to a reduction in the number of school days and students completing work through multiple avenues in the fourth marking period (i.e. paper/pencil packets, online learning, etc.), there were no updates made to the Future Ready PA Index for the 2019-2020 school year. Additionally, schools were given flexibility when scheduling and completing state assessments with students during the 2020-2021 school year. This was due to the different types of schedules and instructional models that were implemented (i.e. online learning, hybrid model, and/or in-person instruction) and continued periods of school closure throughout the year due to positive cases of COVID-19. Schools had the option to administer the exams in either the spring of the 2020-2021 school year or in the fall of the 2021-2022 school year. The Mercer Area School District chose to have students complete the statewide assessments in the spring of 2021 due to the fact that both buildings maintained in-person instruction throughout the 2020-2021 school year for all students. The elementary school transitioned to remote/online learning for thirteen days in the fall semester, and conducted in-person learning for the remainder of the school year. Similarly, the middle-high school had eighteen days of remote learning in the fall and also maintained an in-person instructional model for the remainder of the second semester. Because school districts had the option to complete statewide testing during different time periods (Spring 2021 or Fall 2021), the Pennsylvania Department of

Education had to delay any updates to the Future Ready PA Index for the 2020-2021 school year.

The summer remediation program that took place at the elementary school during the summer of 2021 was twenty days in length with the sessions lasting three hours each day from 9:00 a.m. – 12:00 p.m. A total of ten groups were established based on grade levels (Pre-Kindergarten transitioning to Kindergarten, 1st grade transitioning to 2nd grade, etc.). There were two grade levels that had two groups (1st grade transitioning to 2nd grade and 2nd grade transitioning to 3rd grade) based on the number of students that enrolled within the program. All other grade levels had one group for the summer sessions. Each day, students had the opportunity to participate in lessons and activities that reinforced skills in reading, writing, and mathematics in an effort to reduce and eliminate any gaps in learning that may have been created due to the period of school closure during the fourth marking period of the 2019-2020 school year and for thirteen days during the first semester of the 2020-2021 school year. Additionally, activities that included time outside on the playground, the development of social skills, and preparation for the transition to the next grade level were also incorporated into the time that the students spent at school each day during the summer program. All students had the opportunity to pick up a lunch when they were dismissed at the end of each day due to the school lunch program that provided free lunches to all students (K-12) throughout the entire summer.

Participants

There was a total of 507 students enrolled at Mercer Elementary School during the 2020-2021 school year. This enrollment figure includes students that were enrolled

within the school district's cyber program. All students at the elementary school were eligible to participate in the summer program that was established by the school district. Additionally, information was provided to the early childhood education programs in the area (i.e. Head Start, local preschools, etc.) to allow for students that were going to transition into Kindergarten during the 2021-2022 school year to also attend if interested. Letters were sent home to parents & families in May 2021 to explain the purpose of the program and give parents/guardians the opportunity to enroll their child(ren) in the four-week program. A total of 106 students in grades PK-6 enrolled in the summer program during the summer of 2021. Families of these students were invited to participate in the study and provide feedback and information regarding their child(ren)'s experience in the summer program at the elementary school. Both a hard copy and an electronic survey was sent to each family by the researcher in December 2021. Included within the survey and in the email that was sent to each family was a detailed explanation outlining the purpose for the study and the data that would be collected. Follow-up emails were sent to all families in January 2022, February 2022, and March 2022 in order to maximize participation by families in the study. A reminder that completion of the survey (whether online or hard copy) and participation within the study was completely voluntary was included within each communication that was sent to the families.

A total of twenty-five individuals worked within the summer program at Mercer Elementary school during the summer of 2021. This group included six elementary teachers that are currently on staff within the school district, one aide/paraprofessional that works at the elementary school during the school year, and eighteen college students, ranging from freshman to recent college graduates. There was one classroom teacher and

either two or three assistants assigned to each group that was created for the summer program. College students that were designated as classroom instructors were recent graduates that had obtained their teaching certification through the state of Pennsylvania. All twenty-five individuals that worked within the summer program were invited to participate in the study and provide feedback and information regarding their experience working with the children in their classroom during the summer of 2021. Both a hard copy and an electronic survey was disseminated to each individual by the researcher in December 2021. Included within the survey and in the email that was sent was a detailed explanation outlining the purpose for the study and the data that would be collected. Follow-up emails were sent in January 2022, February 2022, and March 2022 in order to maximize participation by both the teachers and the college students that assisted with the program in the study. A reminder that completion of the survey (whether online or hard copy) and participation within the study was completely voluntary was included within each communication with the group.

The researcher has worked within the Mercer Area School District for twenty years as a middle-high school mathematics teacher and athletic director, middle-high school principal, and assistant superintendent. In his current role as assistant superintendent, the researcher is the director of special education, oversees curriculum and instruction, is the homelessness liaison, the English as a Second Language (ESL) coordinator, and oversees services that are provided by the school district's technology provider and the company that supplies both aides/paraprofessionals and substitute teachers for both the elementary and middle-high school buildings. The data collected through this study will be utilized by the researcher as he conducts a review of the

practices at both the elementary and middle-high school in order to develop a system that fully ensures students who are academically at risk are identified early and are supported through a process that provides interventions based on individual student needs and includes protocols and procedures for monitoring the effectiveness of the program.

Research Plan

There are three research questions that will be used within this action research study:

- 1) What is the rate of academic growth of students that participate in an elementary summer remediation program (grades 2-6)?
- 2) What impact does a summer remediation program have on the academic growth of regular education students vs special education/learning support students at the elementary level (grades 2-6)?
- 3) What impact does a summer remediation program have on the academic growth of low socioeconomic status students vs non-low socioeconomic status students at the elementary level (grades 2-6)?

The NWEA Measure of Academic Progress (MAP) in both Reading and Mathematics is the benchmark assessment that was used to gather quantitative data for this study. These computerized adaptive tests select and display a question that is appropriate for the student's grade level in either Reading or Mathematics. Once a student answers the initial question on the assessment, future questions will be selected specifically for the individual student depending upon how he/she performs on the previous question. A typical MAP Reading test has approximately forty to forty-two questions and a typical MAP Mathematics test has approximately fifty-two questions. There is no time limit to

complete either the Reading or Mathematics assessment. Students typically take forty-five to sixty minutes to complete each exam. Because of this, classes are typically assigned two days to complete each exam during each of the testing sessions throughout the school year. One of the unique features of the program is that it will alert the test proctor if students are randomly selecting responses or guessing. The test proctor (administrator, teacher, aide/paraprofessional, etc.) is then able to lock the student's test session and talk to the student to determine why they are rapidly moving through the exam. Once the issues are resolved, the test proctor can unlock the test and the student can continue answering questions.

Once the student reaches the end a MAP exam in either Reading or Mathematics, the score is calculated in a Rausch unit (RIT) and is available to the teacher and the student (Northwest Evaluation Association, 2009). Information related to specific goals and eligible content in Reading (Foundational Skills, Reading Informational Text, Reading Literature, Writing & Language, and Vocabulary Acquisition & Use) and in Mathematics (Algebraic Concepts, Numbers & Operations, Measurement & Data, Geometry, and Data & Probability) is also available to both teachers and administrators for individual students, specific classes, and/or a complete grade level. The NWEA database allows teachers and administrators to track the academic progress of students longitudinally in both Reading and Mathematics in an effort to provide opportunities for remediation in areas of deficiency, as well as enrichment activities that build upon areas of strength that have been identified for individual students.

Measure of Academic Progress (MAP) test results in both Reading and Mathematics for elementary students in grades 2-6 from a three-year period (2019-2020,

2020-2021, and 2022-2023) was examined for this study. Initial comparisons were made based upon whether or not a student participated in the summer program during the summer of 2021. Scores for specific subgroups of students (special education/learning support and socioeconomic status) were also be examined to determine impact of the summer program on these different student populations.

Qualitative data was gathered using two different surveys. One of the surveys was provided to the families of the students that participated in the summer learning program during the summer of 2021. The other survey was distributed to each of the twenty-five individuals that served as either an instructor or as an assistant during the summer program.

Fiscal Implications

The American Rescue Plan – Elementary and Secondary Schools Emergency Relief Fund (ARP-ESSER) had monies that were earmarked to address the impact of lost instructional time due to the COVID-19 pandemic. School districts were required to reserve twenty percent (20%) of the funds that they receive as part of this grant to implement evidence-based interventions (i.e. summer learning and enrichment, extended school day, comprehensive afterschool programs, extended school year programs, etc.) for a three-year period (2021-2022 to 2023-2024). Additionally, the ESSER (ARP-ESSER) 7% Set Asides Consolidated Fund included monies that were set aside specifically for summer programming during this same three-year period. A breakdown of the proposed budget for a summer program to be held at the elementary school over a three (3) year period (2021-2022 to 2023-2024) that would utilize the allocated funds provided to the school district in included in Appendix A.

The three (3) year budget outlines the different components that are necessary to provide the framework for the summer program that would take place within the elementary building. Staffing makes up a significant portion of the budget and the monies set aside within the American Rescue Plan – Elementary and Secondary School Emergency Relief Fund (ARP-ESSER) and the ESSER (ARP-ESSER) 7% Set Asides Consolidated Fund. Using the model that was implemented in the summer of 2021, the district established at least one (1) classroom for each grade level during the summer program (i.e. pre-kindergarten, Kindergarten transitioning to 1st grade, 1st grade transitioning to 2nd grade, etc.). Opportunities for the creation of additional classes at those grade levels where there is a larger enrollment of students for the summer program were examined when necessary. Classroom assistants were assigned to each group (1-2 individuals per group) to assist the lead instructor in providing instruction and supervising the different activities that would take place each day. These assistants were current college students and/or instructional aides/paraprofessionals that currently work within the school district. Both the classroom instructors and the assistants were paid a stipend for working with students in the summer program (\$3,000.00 for instructors and \$1,500.00 for assistants). The other portion of the budget associated with staffing involves the transportation of students. The district utilized four (4) van drivers to transport students whose families are unable to bring them to the elementary school for the summer program. The salary listed within the budget is based on an hourly rate for these employees (\$31.50/hour for 2 hours/day). The remaining portion of the budget for each year is earmarked for the materials and supplies for the programs. Additional classroom supplies (i.e. notebook paper, pencils, markers, crayons, construction paper,

etc.) are a small portion of the proposed budget for materials that will be used in the summer program.

The licensing and subscription for NWEA testing will provided the diagnostic tool that was utilized for benchmark testing with the students. The Measure of Academic Progress (MAP) testing that is completed in both Reading and Mathematics provides the faculty & staff valuable information as to the academic growth and progress that is being made by the students throughout the school year. Testing sessions were scheduled three times during the 2020-2021 school year (August/September, January/February, and April/May). The results from both the Reading and Mathematics assessments provide the teachers the information that they need to plan the instruction and activities that they will deliver to the students both during the school day and in the extra programming provided (after-school and/or summer). The costs associated with this diagnostic testing program are typically \$10,000.00 - \$10,900.00 per year based on a per-pupil pricing structure. This gives the administration and faculty access to student testing data for both the current school year and previous testing sessions, as well as access to a multitude of resources that will assist classroom teachers in providing both remediation and enrichment through different activities and lessons. Edmentum/Study Island is an instructional resource that offers lessons and activities that can be utilized by the teachers when working with students on specific standards and content in both Reading and Mathematics. One of the best features of the Edmentum/Study Island program is that NWEA MAP testing results can be uploaded into the platform to create individualized learning paths for each student. This allows the teacher to tailor the activities that are available to each student in order to provide remediation and/or enrichment for specific

standards within each content area. Similar to the NWEA MAP testing, the annual cost for the district to have this program in place is based on a per-pupil pricing model (\$10,000.000 - \$10,900.00). The final component of the budget, specific to the first year, is the purchase of a new school van. This purchase was necessary in order to meet the transportation needs that the district encountered during the implementation of programming in the summer of 2021.

The indirect costs associated with the implementation of the summer program are related to time and job completion. The school district maintenance and custodial staff members have had to work additional hours this summer. This increase in the scheduled time for these employees is necessary to clean the classrooms each day when students are dismissed and also complete the tasks that they normally work on throughout the summer when the buildings are empty (i.e. move furniture in and out of classrooms, strip and wax floors, scrub carpets, change air filters, etc.). Additionally, the transportation of students whose families cannot bring their child(ren) into school for the program created other additional costs for the district. School vans that typically are not utilized in the summer were transporting students to and from school, creating the need for additional fuel and potential maintenance on these vehicles. This also delayed the scheduled inspections and regular maintenance of these vehicles that typically takes place in the months of June and July. These additional costs in custodial time and transportation could also occur with the implementation of after-school programming during the school year. Custodians may need additional time to clean classrooms and other areas of the building utilized for after-school activities when they take place. Students whose families are unable to transport them home after school will need to ride either a school van or a bus, creating

additional runs in the afternoon each day. It will take a full year of implementing both summer and after-school programs to determine how much additional time may be needed in both the maintenance/custodial and transportation department and, if possible, whether or not alternate schedules and plans can be developed in an effort to maintain normal operating costs.

Examining the costs that are associated with the summer program was necessary to determine how to spend grant monies within both the American Rescue Plan – Elementary and Secondary School Emergency Relief Fund (ARP-ESSER) and the ESSER (ARP-ESSER) 7% Set Asides Consolidated Fund. Results and findings from this action research study will provide the information and data necessary for the administration and staff to examine the effectiveness of the summer programming. If it is determined that the school district should continue providing these opportunities to students in future years, funds will need to be earmarked within the school district's operating budget or other sources of revenues will need to be secured by the district to offset the costs associated with these types of program.

Research Design, Methods, and Data Collection

Kurt Lewin, the researcher that is credited with creating the term “action research” in 1934 believed “research conducted specifically within the context in which a problem existed was the key to arriving at a solution to that problem, or to institute some degree of change, and that more traditional forms of research could not accomplish this” (Mertler, 2019, pg. 134). The COVID-19 pandemic that began in the spring of 2020 and forced periods of school closure for school districts across the country has reinforced the need for the implementation of programming for students throughout the school year and

during the summer months in order to provide opportunities for remediation to combat any regression in skills, behavior patterns, and/or a lack of progress that students made throughout the curriculum during the period of school closure at the end of the 2019-2020 school year and during the 2020-2021 school year. Analysis of the data collected as part of this study will provide information that will assist school district administration and staff in determining what instructional strategies and assessment practices will best meet the needs of elementary students moving forward.

A mixed-methods approach was selected for this action research study. Cresswell and Plano Clark (2011) describe mixed-methods research studies as “studies that include at least one quantitative strand and at least one qualitative strand” (Mertler, 2019, p. 120). Utilizing both quantitative and qualitative data within the study allowed the researcher to examine the research questions from different perspectives and create a complete picture that measured the impact that participation within the summer learning program during the summer of 2021 had on different groups of elementary students. Quantitative data was gathered through the review of NWEA Measure of Academic Progress (MAP) Growth assessment results in both Reading and Mathematics for students in kindergarten through sixth grade for a three-year period (2019-2020, 2020-2021, and 2021-2022). Elementary students completed two testing sessions during the 2019-2020 school year (August/September and January/February). The third testing session that typically occurs in the spring (April/May) was cancelled due to the school closure that took place in the spring of 2020 at the beginning of the COVID-19 pandemic. There were three testing sessions scheduled for elementary school to complete both the NWEA MAP Reading and Mathematics exams during the 2020-2021 and 2021-2022

school year. Testing data for each student within the school district is stored on the NWEA website. The researcher and all building-level administrators within the school district have access to the database of results for each test (Reading and/or Mathematics) that has been completed by students since the district because using this benchmark assessment software during the 2013-2014 school year. Individual classroom teachers are provided access to the results for students in their classes during the given school year to allow them to utilize this testing data to assist in the planning and preparation of specific instructional lessons and activities that will provide opportunities for remediation and/or enrichment with students based on their individual needs.

Two different surveys were used to gather qualitative data for the study. The first survey was sent to the families of students that were enrolled within the summer program that took place at Mercer Elementary School during the summer of 2021 and can be found in Appendix B. A total of fourteen questions were included within the survey, eleven that were multiple choice/checkboxes and three short answer questions. A hard copy of the survey, including a detailed explanation of the reasons and rationale for the research project, was mailed home to each family of the 106 students that participated in the summer program in December 2021. Additionally, an online version of the same survey was created using Google Forms to provide the option for the families to submit their responses electronically if they desired. A specific URL that allowed access to the online survey was created and sent to each family using the email address that was on file within the school district in January 2022. Follow-up communications were sent out in both February 2022 and March 2022 in order to maximize participating by families. In both cases (hard copy survey or online survey), families were not required to provide any

personal identifiable information if they chose to participate in the study. Return envelopes were provided with the hard copy surveys and the electronic survey did not require participants to enter their name and/or email address to submit a response electronically. A total of 51 responses were collected, accounting for 72 students that were enrolled in the summer program during the summer of 2021. Results from the responses that were provided through both the hard copy and online surveys will be analyzed and further examined in Chapter IV of this study.

The second survey that was created was used to collect responses from the instructor and assistants that worked with the elementary students in the summer program and can be found in Appendix C. Fifteen questions were included within this survey, nine that were multiple choice/checkboxes and six short answer questions. Similar to the survey that was created for families to complete, a hard copy of the survey that included a detailed explanation of the reasons and rationale for the research project was disseminated in December 2021 to each of the twenty-five individuals (six classroom teachers, one aide/paraprofessional, and eighteen college students) that worked in the summer program. An online version of the survey was also created using Google Forms to allow the instructors and assistants to submit their responses electronically. A specific URL that allowed access to the online survey was created and sent to each individual in January 2022 using either their school district email account (classroom teachers and aide/paraprofessional) or the email account that was provided when they applied for a position in the summer program (college students). Follow-up communications were sent in both February 2022 and March 2022 in order to maximize participating by the individuals that worked with the students in the summer program. In both cases

(hard copy survey or online survey), instructors and assistants from the program were not required to provide any personal identifiable information if they chose to participate in the study. Return envelopes were provided with the hard copy surveys and the electronic survey did not require participants to enter their name and/or email address to submit a response electronically. A total of 14 responses were collected from the individuals that served as either an instructor or as an assistant in the summer program during the summer of 2021. Results from the responses that were provided by these individuals through both the hard copy and online surveys will be analyzed and further examined in the next chapter of this study.

Validity

A concern for all researchers is the ability to provide valid and reliable information when conducting a research study (Merriam & Tisdell, 2016). Ethical issues can potentially take place “prior to conducting the study, at the beginning of the study, during data collection, in conducting data analysis, in reporting the data, and in publishing a study” (Cresswell & Poth, 2018, pg. 54). Careful attention needs to be taken by documenting each component of the process used to collect and analyze data, following ethical guidelines and procedures in order to protect the identities of the participants within the study, and enacting proper security measures to store and maintain the data that is collected for the study (Brinkman & Kvale, 2015; Creswell & Poth, 2018).

Documentation was submitted to the Institutional Review Board (IRB) at California University of Pennsylvania in order to gain confirmation that all human subject protection guidelines were followed as part of this action research study. This documentation protects all participants within the study and also outlines potential

research bias, conflicts of interest, and any risks or benefits that a participant may be exposed to base upon their association with the study. A request was made to IRB to review and approve the proposal for the research study. A follow-up email was received granting approval to move forward with this action research project (Proposal #20-046) and is included in Appendix D. Additionally, the researcher completed all of the web-based courses through the Collaborative Institutional Training Initiative (CITI) required for the research study. Copies of these certifications are included within Appendix E of the study.

The extent to which an action research project reaches a specific standard of quality, validity, accuracy, and credibility is directly related to the usefulness that the findings of the research has for its intended audience (Mertler, 2019). Melrose (2001) stated that “rigor is typically associated with the terms validity and reliability in quantitative studies and with accuracy, credibility, and dependability in qualitative studies” (Mertler, 2019, pg. 144). Validity is related to the data collection process and occurs when this process accurately reports what it was intended to measure (Suter, 2012). The reliability of a study refers to “the process of the study being consistent, reasonably stable over time, and across researchers and methods” (Miles, et al., 2020, p. 305). Credibility, dependability, and confirmability are established through the triangulations of data (Hendricks, 2017). Rossman and Rallis (2012) explained that the collection and analysis of multiple forms of data “helps ensure that you have not studied only a fraction of the complexity that you seek to understand” (p. 65). The triangulation of data within this study came from the collection of benchmark assessment data in Reading and Mathematics over a three-year period, in combination with the survey

results that were collected from both the families of students that participated in the summer program during the summer of 2021 and from the individuals (instructors and assistants) that worked with these students. The qualitative data that was collected through the surveying process was used to clarify and support the benchmark assessment data that was available for the students that participated in the summer program.

Limitations

There are limitations to every study that is conducted by a researcher or a group of researchers. One potential limitation within this study is the size of the school district and the researcher's familiarity with the subjects of the study. Serving as a teacher, coach, and administrator within the same school district for twenty years provides opportunities to develop relationships and get to know the families within the community very well. While the necessary steps were implemented to ensure the privacy of all of the individuals that submitted responses to the surveys that were disseminated, the participation rate of the families of students that were enrolled in the summer program, as well as the instructors and assistants that worked in the program, may have been higher if the researcher did not work within the school district.

The small sample size of students that participated in the summer program during the summer of 2021 (106 students) and the overall response rate to the surveys that were distributed to the families (67.9%) could be considered a limitation for this study. Additionally, the number of responses that were provided by both instructors and assistants (56.0%) that participated in the program should be considered when drawing conclusions regarding this qualitative data. The information that was collected by both surveys is important and will provide both the administration and staff with valuable

input from stakeholders to use when planning for programming that will occur in the future, whether after-school or during the summer break.

Summary

This action research study was completed in an effort to determine whether the implementation and participation in a summer learning program has an impact on the academic achievement of elementary students, specifically in grades 2-6. The methodology for this project was outlined throughout this chapter. The setting and participants, as well as the rationale for conducting the research, were provided to establish a framework for the study. The process that was used for collecting the data for this mixed-methods project was described in detail to show both the quantitative (NWEA Measure of Academic Progress (MAP) testing data in Reading and Mathematics) and the qualitative (survey results from both the families of students enrolled in the summer program and the individuals that worked in the summer program) aspects of the study. The financial implications that are associated with the implementation of a summer learning program were reviewed to provide a context for how they relate to grant monies that the school district must utilize to combat learning loss associated with the COVID-19 pandemic (ARP-ESSERS III and ARP-ESSERS 7% Set Aside Funds) over a three-year period and what impact, if any, the program may have on the school district's operating budget in future years. Finally, limitations that could potentially exist for this project were discussed in order to establish a context for the results that were produced from this study. Chapter IV will focus on the analysis of the quantitative and qualitative data that was collected during the action research project and the results and interpretations of these findings by the researcher.

Chapter IV

Data Analysis and Results

Students at all levels of education have been impacted in one way or another by the COVID-19 pandemic that began in March 2020. Periods of school closures and quarantines, modified class schedules, and varying instructional models have reinforced the need for school district to examine what types of programming needs to be put into place in order to provide remediation that will reduce or eliminate any learning gaps that exists and, simultaneously, provide opportunities for enrichment and growth to promote the continued academic development of students. The purpose of this study is to examine the impact of the implementation of and participation in a summer learning program has on elementary students, specifically in grades 2-6.

This chapter will focus on the analysis of the data that was collected for this action research study. A detailed explanation of both the data collection and analysis process will be provided at the beginning of the chapter. Quantitative data in the form of NWEA Measure of Academic Progress (MAP) benchmark assessment results in both Reading and Mathematics for students that participated in the summer learning program during the summer of 2021 and for students that chose not to participate, and qualitative data gathered through the use of surveys provided to the families of students that participate in the program, as well as the instructors and assistants that worked with these students will be examined. Results will be provided in narrative form and displayed in both tables and graphs throughout the chapter. A discussion will follow that will provide an opportunity to elaborate further on the interpretation of the findings of this study. Finally, an overall summary of the data analysis process and the results will conclude this chapter.

Data Analysis

This action research study utilized a mixed-methods approach in order to examine each of the established research questions through both a quantitative and qualitative perspective. Quantitative data was gathered through the review of NWEA Measure of Academic Progress (MAP) Growth assessment results in both Reading and Mathematics for students in kindergarten through sixth grade for a three-year period (2019-2020, 2020-2021, and 2021-2022). Elementary students participated in two testing sessions during the 2019-2020 school year (August/September and January/February). The third testing session that typically occurs in the spring (April/May) was cancelled due to the school closure that took place in the spring of 2020 at the beginning of the COVID-19 pandemic. Three testing sessions took place for elementary students during both the 2020-2021 and 2021-2022 school year. Because there was not an equal number of testing sessions and results available for each year of the three-year span established for this study due to the period of school closure in the spring of 2020, direct comparisons were not made between each of the testing sessions within this timeframe. Analysis of MAP benchmark assessment results from Fall 2019 to Fall 2020 and from Winter 2020 to Winter 2021 in both Mathematics and Reading was completed for students that were enrolled in grades 2-6 at Mercer Elementary school during the 2020-2021 school year to establish baseline data. Additional analysis and comparison of assessment results from Fall 2020 to Fall 2021 and from Winter 2021 to Winter 2022 to the baseline data that was established for this study was completed for the same group of students to determine the levels of academic growth or regression by each student over the same established period

of time. These intervals are similar to ones that are utilized by NWEA when their organization completes MAP Growth Norms studies every five to seven years.

The testing data used for the quantitative analysis that was completed for this study was accessed through the NWEA website. Comprehensive data files were created and downloaded for each testing sessions that was examined (Fall 2019, Fall 2020, Fall 2021, Winter 2020, Winter 2021, and Winter 2022) for both the elementary school and the middle school. Middle school data was examined for the Fall 2021 and Winter 2022 testing sessions given that the students enrolled in seventh grade would have attended the elementary school as sixth grader during the 2020-2021 school year. Once the comprehensive data files were exported from the NWEA website, testing data was compiled into one Microsoft Excel file with a spreadsheet for each testing session and a spreadsheet with data from all of the testing sessions combined together on one page. Placing all of the data on one spreadsheet allowed the researcher to sort the testing data by student to determine which individuals that were enrolled in grades 2-6 at the elementary school during the 2020-2021 school year completed the NWEA Measure of Academic Progress (MAP) benchmark assessments in both Mathematics and Reading during each of the testing sessions that were examined for the study. The mean growth in the RIT score in both Mathematics and Reading across both the fall testing intervals (Fall 2019 to Fall 2020 and Fall 2020 to Fall 2021) and the winter testing intervals (Winter 2020 to Winter 2021 and Winter 2021 to Winter 2022) was calculated for each student that was included within this action research project.

A total of 507 were enrolled in Mercer Elementary School during the 2020-2021 school year, with 352 students in grades 2-6. This figure includes students that

participate in classes that were conducted in-person within the elementary school building and students that were enrolled within the school district's cyber program. Subjects within this study included those students that had NWEA MAP benchmark assessment results in both Mathematics and Reading for each of the testing sessions that were used within the data collection process (Fall 2019, Fall 2020, Fall 2021 and Winter 2020, Winter 2021, Winter 2022). Of the 352 students enrolled in grades 2-6, a total of 273 students met the criteria for inclusion within the study. All MAP benchmark assessment data in Mathematics and Reading that was collected for the subjects of this study was categorized by individual school district student identification numbers in order to maintain anonymity. Assessment results were also categorized by 1) whether or not a student participated in the summer program offered to students in the summer of 2021, 2) whether or not the students that participated in the summer program received special education services during the 2020-2021 school year, and 3) the socioeconomic status of the students that participated in the summer program. Additional columns were added to each spreadsheet to allow for the placement of identification symbols and notations that represented each of the categories next to the assessment results for each student. Once all of the columns were created, the data was again sorted using each of these categories to determine the average RIT growth in both Mathematics and Reading across both the fall testing intervals (Fall 2019 to Fall 2020 and Fall 2020 to Fall 2021) and the winter testing intervals (Winter 2020 to Winter 2021 and Winter 2021 to Winter 2022) for the students based on each of the subgroups created by the categorization of the assessment results.

Both the NWEA MAP Mathematics and Reading assessments are broken down into specific goals and eligible content, but the goals and eligible content assigned to each of the categories is different for each of the assessments based on the grade level of the student when they complete the exam. The Mathematics assessment has five different categories (Numbers & Operations, Algebraic Concepts, Geometry, Measurement & Data, and Data & Probability) that are utilized for each of the four goal areas that are measured with the MAP Mathematics assessment. There are five different categories (Foundational Skills, Reading Informational Text, Reading Literature, Writing & Language, and Vocabulary Acquisition & Use) that are used for each of the three goal areas within the MAP Reading assessment. Because there is variation between which category is utilized for the goals within each of the MAP Mathematics and Reading exams from one grade level to the next an analysis of the RIT score for each category in both Mathematics and Reading was not considered for this action research study.

Qualitative data was gathered using two different surveys. The first survey was sent to the families of students that were enrolled within the summer program that took place at Mercer Elementary School during the summer of 2021 (Appendix B). A total of fourteen questions were included within the survey, eleven that were multiple choice/checkboxes and three short answer questions. Of the 106 students in grades Pre-Kindergarten to 6th grade that participated in the summer program, a total of 51 responses were collected. These responses account for 72 students that were enrolled in the summer program during the summer of 2021, with 38 being enrolled in grades 2-6 during the 2020-2021 school year. Results from the survey were collected both electronically through Google forms and through hard copy submissions that were mailed

back to the researcher. A Microsoft Excel spreadsheet was created in order to compile the responses that were provided. This allowed the researcher to create graphs to display the results from the multiple-choice questions and a list of the responses submitted to the short answer questions to be used in the analysis of this qualitative data that appears later in this chapter.

The second survey was used to collect responses from the instructor and assistants that worked with the elementary students in the summer program (Appendix C). Fifteen questions were included within this survey, nine that were multiple choice/checkboxes and six short answer questions. Of the 25 individuals that worked as either an instructor or assistant in the summer program, a total of 14 responses were collected. Results from the staff survey were collected electronically through submissions to an established Google form. A Microsoft Excel spreadsheet was created in order to analyze the responses that were provided by the instructors and assistants from the summer program. Similar to the analysis that was completed with the responses to the parent/family survey, the results from the multiple-choice questions were converted into graphs and the responses to the short answer questions that were included in the survey were placed into a list in order to analyze the data gathered from this summer staff surveys.

The overall approach to the data collection process and analysis for this action research project was to determine the effectiveness of the implementation of programming for elementary students during the summer months and whether or not these opportunities were able to mitigate any regression in skills, behavior patterns, and/or a lack of progress that students made throughout the curriculum during the period

of school closure at the end of the 2019-2020 school year and during the 2020-2021 school year. Analysis of both the quantitative and qualitative data collected as part of this mixed-methods study provided information that will guide school district administration and staff in determining what instructional strategies and assessment practices will best meet the needs of elementary students moving forward in subsequent years.

Results

As stated earlier in this chapter, a total of 507 students were enrolled in Mercer Elementary School during the 2020-2021 school year. Table 1 provides a breakdown of the student enrollment at Mercer Elementary School for the 2020-2021 school year.

Table 1

Mercer Elementary School Total Student Enrollment for the 2020-2021 School Year

<i>Grade Level</i>	<i>Total Number of Students</i>	<i>Regular Education Students</i>	<i>Special Education Students</i>	<i>Low Socioeconomic Status (Free/Reduced)</i>	<i>High Socioeconomic Status (Neither)</i>
Kindergarten	70	53	17	11	59
1 st Grade	75	57	18	25	56
2 nd Grade	83	53	30	38	45
3 rd Grade	73	48	25	41	32
4 th Grade	69	51	18	27	38
5 th Grade	59	45	14	33	26
6 th Grade	78	54	24	29	47
TOTAL	507	361	146	204	303

Students in Kindergarten and first grade were included within the table to provide a complete picture of the enrollment at Mercer Elementary School during the 2020-2021 school year. Subjects within the study were enrolled in grades 2-6 during this academic year school year, thus excluding the students in Kindergarten and first grade from analysis. A total of 352 students were enrolled in grades 2-6, with 273 students meeting

the criteria of having NWEA MAP benchmark assessment results in both Mathematics and Reading for each of the testing sessions that were used within the data collection process (Fall 2019, Fall 2020, Fall 2021 and Winter 2020, Winter 2021, Winter 2022).

Quantitative Data Analysis – Research Question 1

The first research question within this action research projects asks “What is the rate of academic growth of students that participate in an elementary summer remediation program in grades 2-6?” Table 2 provides a breakdown of the participation in the summer program that was offered in the summer of 2021 for students that were enrolled in Mercer Elementary School during the 2020-2021 school year that had the required NWEA MAP benchmark assessment data in both Mathematics and Reading.

Table 2

Mercer Elementary School Summer Program Enrollment (Summer 2021)

<i>Grade Level</i>	<i>Number of Students</i>	<i>Number of Students that DID participate in Summer Program</i>	<i>Number of Students that DID NOT participate in Summer Program</i>
2 nd Grade	63	14	49
3 rd Grade	52	9	43
4 th Grade	56	12	44
5 th Grade	44	6	38
6 th Grade	58	5	53
TOTAL	273	46	227

There was a total of 106 students that participated in the summer program during the summer of 2021. Of these 106 students, 41 were Pre-Kindergarten (preschool age), Kindergarten, and 1st grade students and 65 students were enrolled in grades 2-6. As shown in Table 2, 46 out of these 65 students met the requirements that were established for the study. Table 3 provides the average increase in RIT score in Mathematics during

the established timeframes for this study (Fall 2019 to Fall 2020, Fall 2020 to Fall 2021, Winter 2020 to Winter 2021, and Winter 2021 to Winter 2022).

Table 3

Average Change in RIT Math Scores for Students in Grades 2-6 (2020-2021 School Year)

<i>Grade Level</i>	<i>Fall 2019 to Fall 2020</i>	<i>Fall 2020 to Fall 2021</i>	<i>Winter 2020 to Winter 2021</i>	<i>Winter 2021 to Winter 2022</i>
2 nd Grade (Summer)	13.86	16.71	9.93	16.86
2 nd Grade (Non-Summer)	7.47	18.67	8.18	16.43
3 rd Grade (Summer)	11.44	15.11	6.22	14.33
3 rd Grade (Non-Summer)	9.83	16.69	10.00	12.00
4 th Grade (Summer)	11.08	9.08	11.33	9.92
4 th Grade (Non-Summer)	10.61	12.93	8.64	10.66
5 th Grade (Summer)	8.00	4.83	5.50	5.83
5 th Grade (Non-Summer)	9.45	5.24	8.53	4.68
6 th Grade (Summer)	2.60	1.80	5.20	0.00
6 th Grade (Non-Summer)	1.24	8.87	4.44	4.41
Overall Grades 2-6 (Summer)	10.67	11.24	8.48	11.28
Overall Grades 2-6 (Non-Summer)	7.37	12.61	7.78	9.67

While all of the student groups experienced an increase in their RIT Mathematics scores throughout both fall comparison periods (Fall 2019 to Fall 2020 and Fall 2020 to Fall 2021), there were four student groups (4th grade summer, 5th grade summer, 5th grade non-summer, and 6th grade summer) whose improvement in RIT scores was not

as large when measuring growth between the Fall of 2020 and the Fall of 2021. When examining fall testing session measures, all other student groups showed continued improvement in their RIT scores. 2nd grade students that did not participate in the summer program (49 total) showed the most improvement with an additional 11.20-point increase in their academic growth, while 3rd grade students that did not participate in the program (43 total) showed an additional 7.63-point increase. Overall, students that participated in the summer program (46 students) did have continued growth when comparing the fall testing periods, increasing from a +10.67-point improvement to a +11.24-points improvement in their RIT Mathematics scores (+0.57-point difference). Students that did not participate in the summer program (227 total) displayed an increase from a +7.37-point improvement to a +12.61-point improvement in their RIT Mathematics scores (+5.24-point difference).

When examining the RIT scores for NWEA MAP Mathematics assessments completed during the established winter testing sessions, there were four groups of students (4th grade summer students, 5th grade non-summer students, 6th grade summer students, and 6th grade non-summer students) that did not show an increased improvement in RIT scores when comparing these winter testing sessions. The largest increases were achieved by both groups of 2nd grade students and by the 3rd grade students that participated in the summer program. Second grade students that participated in the summer program showed an additional 7.23-point increase, while 2nd grade students that did not participate in the program showed an additional 8.25-point increase. 3rd grade students that participated in the summer program (9 students) displayed an additional 8.11-point increase in their RIT Mathematics scores. Overall,

students that participated in the summer program did have an additional increase in growth between the winter testing periods, increasing from a +8.48-point improvement to a +11.28-point improvement (+2.80-point difference). In comparison, students that did not participate in the summer program saw their academic growth increase from a +7.78-point improvement to a +9.67-point improvement (+1.89-point difference).

Table 4 provides the average increase in RIT score in Reading for students that participated in the summer program and students that did not participate in the summer program during the timeframes that were established for this study (Fall 2019 to Fall 2020, Fall 2020 to Fall 2021, Winter 2020 to Winter 2021, and Winter 2021 to Winter 2022).

Table 4*Average Change in RIT Reading Scores for Students in Grades 2-6**(2020-2021 School Year)*

<i>Grade Level</i>	<i>Fall 2019 to Fall 2020</i>	<i>Fall 2020 to Fall 2021</i>	<i>Winter 2020 to Winter 2021</i>	<i>Winter 2021 to Winter 2022</i>
2 nd Grade (Summer)	16.07	9.71	8.14	11.14
2 nd Grade (Non-Summer)	10.45	15.59	11.61	11.73
3 rd Grade (Summer)	8.33	13.33	12.11	9.78
3 rd Grade (Non-Summer)	14.05	11.36	10.90	8.50
4 th Grade (Summer)	5.42	8.17	11.00	6.92
4 th Grade (Non-Summer)	10.91	5.48	9.20	7.36
5 th Grade (Summer)	7.33	1.83	4.67	-1.17
5 th Grade (Non-Summer)	6.87	6.37	7.63	1.89
6 th Grade (Summer)	9.00	4.40	8.20	-1.00
6 th Grade (Non-Summer)	5.91	1.57	2.24	0.67
Overall Grades 2-6 (Summer)	9.87	8.41	9.22	6.85
Overall Grades 2-6 (Non-Summer)	9.52	7.97	8.12	6.01

In contrast to the results collected for NWEA MAP Mathematics benchmark assessments, the improvement in RIT scores for Reading was not as large when measuring growth between the Fall of 2020 and the Fall of 2021. When examining fall testing session measures, there were three groups of students that showed continued improvement in their RIT scores (2nd grade non-summer students, 3rd grade summer

students, and 4th grade summer students). Students that did not participated in the summer program in 2nd grade (49 total) showed an additional 5.14-point increase in their academic growth. 3rd grade students (9 total) and 4th grade students (12 total) that participated in the summer program showed an additional 5.00-point increase (3rd grade) and a 2.75-point increase (4th grade) respectively. Overall, students that participated in the summer program did not have additional growth between the fall testing periods, decreasing from a +9.87-point increase to a +8.41-point increase in their RIT Reading score (-1.46-point difference). In comparison, students that did not participate in the summer program saw their academic growth decrease from a +9.52-point increase to a +7.97-point increase in their RIT Reading score (-1.55-point difference).

When examining the RIT scores for NWEA MAP Reading assessments completed during the established winter testing sessions, there were only two groups of students (2nd grade summer students and 2nd grade non-summer students) that displayed an increased improvement in RIT scores when comparing these winter testing sessions. 2nd grade students that participated in the summer program (14 students) had an additional 3.00-point increase, while 2nd grade students that did not participated in the summer program (49 total) showed an additional 0.14-point increase. Conversely, there were two groups of students (5th grade summer students and 6th grade summer students) that had a decrease in their RIT Reading score improvement from the Winter 2021 to the Winter 2022 testing sessions. The 5th grade students that participated in the summer program had a 1.17-point decrease in their RIT scores, while 6th grade students that participated in the summer program had a 1.00-point decrease in their RIT scores. Overall, students that participated in the summer program (46 students) did not have a

large increase growth when comparing the winter testing periods, decreasing from a +9.22-point increase to a +6.85-point increase (-2.37-point difference). Students that did not participate in the summer program (227 students) also saw their academic growth decrease from a +8.12-point increase to a +6.01-point increase (-2.11-point difference).

Quantitative Data Analysis – Research Question 2

The second research question within this action research projects asks “What impact does a summer remediation program have on the academic growth of regular education students vs special education/learning support students at the elementary level in grades 2-6)?” Table 5 provides a breakdown of the participation in the summer program that was offered in the summer of 2021 for both special education and non-special education students that were enrolled in Mercer Elementary School during the 2020-2021 school year that had the required NWEA MAP benchmark assessment data in both Mathematics and Reading.

Table 5

Mercer Elementary School Summer Program Enrollment – Special Education Status

Grade Level	Total Number of Students	Number of SPECIAL EDUCATION Students that participated in the Summer Program	Number of REGULAR EDUCATION Students that participated in the Summer Program
2 nd Grade	14	8	6
3 rd Grade	9	4	5
4 th Grade	12	5	7
5 th Grade	6	5	1
6 th Grade	5	4	1
TOTAL	46	26	20

There was a total of 46 students in grades 2-6 that participated in the summer program during the summer of 2021 and met the requirements that were established for this study. Of these 46 students, 26 have been identified as needing special education

services through an individualized education plan (IEP). Table 6 provides the average increase in RIT score in Mathematics for both special education students and regular education students during the established timeframes for this study (Fall 2019 to Fall 2020, Fall 2020 to Fall 2021, Winter 2020 to Winter 2021, and Winter 2021 to Winter 2022). While the sample size for students that participated in the summer program is much smaller (46 total students) than the overall elementary student population that was considered for this study (273 total students), it should also be noted that there are two student subgroups that participated in the summer program that have only one student (5th grade regular education students and 6th grade regular education students).

Table 6*Average Change in RIT Math Scores for Students Enrolled in Summer Program**(Summer 2021)*

<i>Grade Level</i>	<i>Fall 2019 to Fall 2020</i>	<i>Fall 2020 to Fall 2021</i>	<i>Winter 2020 to Winter 2021</i>	<i>Winter 2021 to Winter 2022</i>
2 nd Grade (Regular Ed)	14.50	16.50	4.50	16.83
2 nd Grade (Special Ed)	13.38	16.88	14.00	16.88
3 rd Grade (Regular Ed)	11.20	17.00	6.60	8.40
3 rd Grade (Special Ed)	11.75	12.75	5.75	21.75
4 th Grade (Regular Ed)	9.57	12.29	10.71	12.57
4 th Grade (Special Ed)	13.20	4.60	12.20	6.20
5 th Grade (Regular Ed)	12.00	-2.00	8.00	6.00
5 th Grade (Special Ed)	7.20	6.20	5.00	5.80
6 th Grade (Regular Ed)	3.00	-2.00	-3.00	5.00
6 th Grade (Special Ed)	2.50	2.75	7.25	-1.25
Overall Grades 2-6 (Regular Ed)	11.25	13.30	7.00	12.10
Overall Grades 2-6 (Special Ed)	10.23	9.65	9.62	10.65

Approximately one-half of the student groups (2nd grade regular education, 2nd grade special education, 3rd grade special education, 3rd grade regular education, and 4th grade special education) showed continued improvement in their RIT scores in Mathematics throughout both fall comparison periods (Fall 2019 to Fall 2020 and Fall 2020 to Fall 2021). 3rd grade regular education students (5 students) showed the

greatest improvement in RIT Mathematics scores with an additional 5.80-point increase in their academic growth. Overall, special education students that participated in the summer program (26 students) did not have additional growth in their RIT Mathematics scores between the fall testing periods, decreasing from a +10.23-point increase to a +9.65-point increase (-0.58-point difference). Regular education students that did participate in the summer program (20 students) saw their academic growth improve from a +11.25-point increase to a +13.30-point increase (+2.05-point difference).

When examining the RIT scores for NWEA MAP Mathematics assessments completed during the established winter testing sessions, there were four groups of students (4th grade special education, 5th grade regular education, 6th grade special education, and 6th grade regular education) that did not show an increased improvement in RIT scores when comparing these winter testing sessions. As stated earlier, the 5th grade and 6th grade regular education student groups only had one student in each group. The largest increases were achieved by 3rd grade special education students and 2nd grade regular education students. 3rd grade special education students that participated in the summer program (4 total) showed an additional 16.00-point increase, while 2nd grade regular education students (6 total) showed an additional 12.33-point increase. Overall, special education students that participated in the summer program (26 students) displayed additional growth in their RIT Mathematics scores when comparing the winter testing periods, increasing from a +7.00-point increase to a +12.10-point increase (+5.10-point difference). In comparison, regular education students that participated in the summer program (20 students) saw their academic

growth increase from a +9.62-point increase to a +10.65-point increase (+1.03-point difference).

Table 7 provides the average increase in RIT score in Reading for both special education students and regular education students during the established timeframes for this study (Fall 2019 to Fall 2020, Fall 2020 to Fall 2021, Winter 2020 to Winter 2021, and Winter 2021 to Winter 2022). As previously stated, the sample size for students that participated in the summer program is much smaller (46 total students) than the overall elementary student population that was considered for this study (273 total students). Within the group of students that participated in the summer program there are two student subgroups that have only one student (5th grade regular education students and 6th grade regular education students).

Table 7*Average Change in RIT Reading Scores for Students Enrolled in Summer Program**(Summer 2021)*

<i>Grade Level</i>	<i>Fall 2019 to Fall 2020</i>	<i>Fall 2020 to Fall 2021</i>	<i>Winter 2020 to Winter 2021</i>	<i>Winter 2021 to Winter 2022</i>
2 nd Grade (Regular Ed)	14.50	9.83	9.17	8.83
2 nd Grade (Special Ed)	17.25	9.63	7.38	12.88
3 rd Grade (Regular Ed)	8.80	14.20	7.20	12.20
3 rd Grade (Special Ed)	7.75	12.25	18.25	6.75
4 th Grade (Regular Ed)	3.57	9.29	7.71	8.29
4 th Grade (Special Ed)	8.00	6.60	15.60	5.00
5 th Grade (Regular Ed)	9.00	7.00	6.00	10.00
5 th Grade (Special Ed)	7.00	0.80	4.40	-3.40
6 th Grade (Regular Ed)	11.00	-1.00	-2.00	-3.00
6 th Grade (Special Ed)	8.50	5.75	10.75	-0.50
Overall Grades 2-6 (Regular Ed)	8.80	10.05	7.45	8.95
Overall Grades 2-6 (Special Ed)	10.69	7.15	10.58	5.23

When examining the NWEA MAP Reading benchmark assessments for both regular education and special education students that participated in the summer program during the summer of 2021 there were varying results when measuring growth between the Fall of 2020 and the Fall of 2021. There were three groups of students that showed continued improvement in their RIT Reading scores (3rd grade regular education,

3rd grade special education, and 4th grade regular education). 4th grade regular education students that participated in the summer program (7 total) displayed the largest improvement in their academic growth with an additional 5.72-point increase. 3rd grade regular education students (5 total) and 3rd grade special education students (4 total) that participated in the summer program showed an additional 5.40-point increase (3rd grade regular education) and a 4.50-point increase (3rd grade special education) respectively. Overall, special education students that participated in the summer program did not have additional growth in their RIT Reading scores between the fall testing periods, decreasing from a +10.69-point increase to a +7.15-point increase (-3.54-point difference). In comparison, regular education students that did participate in the summer program saw their academic growth increase from a +8.80-point increase to a +10.05-point increase (+1.25-point difference).

When examining the RIT scores for NWEA MAP Reading assessments completed during the established winter testing sessions, there were four groups of students (2nd grade special education, 3rd grade regular education, 4th grade regular education, and 5th grade regular education) that showed an increased improvement in RIT scores when comparing these winter testing sessions. The largest increases were achieved by 2nd grade special education students and 3rd grade regular education students. 2nd grade special education students that participated in the summer program (8 total) showed an additional 5.50-point increase, while 3rd grade regular students that participated in the program (5 total) showed an additional 5.00-point increase. Overall, regular education students that participated in the summer program (20 students) did have continued growth in their RIT Reading scores when comparing winter testing periods,

increasing from a +7.45-point increase to a +8.95-point increase (+1.50-point difference). Special education students that participated in the summer program (26 students) saw the academic growth decrease from a +10.58-point increase to a +5.23-point increase (-5.35-point difference).

Quantitative Data Analysis – Research Question 3

The third and final research question within this action research project asks “What impact does a summer remediation program have on the academic growth of low socioeconomic status students vs non-low socioeconomic status students at the elementary level in grades 2-6?” Table 8 provides a breakdown of the participation in the summer program that was offered in the summer of 2021 for students that were categorized as low-socioeconomic status and non-low socioeconomic status that were enrolled in Mercer Elementary School during the 2020-2021 school year that had the required NWEA MAP benchmark assessment data in both Mathematics and Reading.

Table 8

Mercer Elementary School Summer Program Enrollment – Socioeconomic Status

<i>Grade Level</i>	<i>Total Number of Students</i>	<i>Number of Low Socioeconomic Status Students that participated in Summer Program</i>	<i>Number of Non-Low Socioeconomic Status Students that participated in Summer Program</i>
2 nd Grade	14	8	6
3 rd Grade	9	3	6
4 th Grade	12	6	6
5 th Grade	6	3	3
6 th Grade	5	3	2
TOTAL	46	23	23

There was a total of 46 students in grades 2-6 that participated in the summer program during the summer of 2021 and met the requirements for this study. Of these 46

students, 23 have been identified as low socioeconomic status (free or reduced lunch) and 23 have been identified as high socioeconomic status (neither free or reduced lunch).

Table 9 provides the average increase in RIT score in Mathematics for each of these student groups during the established timeframes for this study (Fall 2019 to Fall 2020, Fall 2020 to Fall 2021, Winter 2020 to Winter 2021, and Winter 2021 to Winter 2022).

Table 9

Average Change in RIT Math Scores for Students Enrolled in Summer Program

(Summer 2021)

Grade Level	<i>Fall 2019 to Fall 2020</i>	<i>Fall 2020 to Fall 2021</i>	<i>Winter 2020 to Winter 2021</i>	<i>Winter 2021 to Winter 2022</i>
2 nd Grade (Free/Reduced)	10.88	18.38	9.13	17.38
2 nd Grade (Neither)	17.83	14.50	11.00	16.17
3 rd Grade (Free/Reduced)	8.67	18.00	5.00	24.67
3 rd Grade (Neither)	12.83	13.67	6.83	9.17
4 th Grade (Free/Reduced)	9.67	8.50	10.00	7.67
4 th Grade (Neither)	12.50	9.67	12.67	12.17
5 th Grade (Free/Reduced)	8.33	4.67	9.00	6.33
5 th Grade (Neither)	7.67	5.00	2.00	5.33
6 th Grade (Free/Reduced)	3.33	2.33	9.00	-2.33
6 th Grade (Neither)	1.50	1.00	-0.50	3.50
Overall (Free/Reduced)	8.96	11.87	8.78	11.78
Overall (Neither)	12.39	10.61	8.17	10.78

There were three student groups (2nd grade low-socioeconomic status, 3rd grade low-socioeconomic status, and 3rd grade non-low socioeconomic status) that showed continued improvement in their RIT scores in Mathematics throughout both fall comparison periods (Fall 2019 to Fall 2020 and Fall 2020 to Fall 2021). 3rd grade low-socioeconomic status students (3 students) showed the greatest improvement in RIT Mathematics scores with an additional 9.33-point increase in their academic growth. Overall, low-socioeconomic status students that participated in the summer program (23 students) did have continued growth in their RIT Mathematics scores between the fall testing periods, increasing from a +8.96-point increase to a +11.87-point increase (+2.91-point difference). In comparison, non-low socioeconomic status students that did participate in the summer program (23 students) saw their academic growth decrease from a +12.39-point increase to a +10.61-point increase (-1.78-point difference).

When examining the RIT scores for NWEA MAP Mathematics assessments completed during the established winter testing sessions, one half of the groups of students (2nd grade low-socioeconomic status, 2nd grade non-low socioeconomic status, 3rd grade low-socioeconomic status, 3rd grade non-low socioeconomic status, and 6th grade non-low socioeconomic status) showed an increased improvement in RIT scores when comparing these winter testing sessions. The largest increases were achieved by 3rd grade low-socioeconomic status students and 2nd grade low-socioeconomic status students. 3rd grade low-socioeconomic status students that participated in the summer program (3 total) showed an additional 19.67-point increase, while 2nd grade low-socioeconomic status students (8 total) showed an additional 8.25-point increase. There were two groups (6th grade low-socioeconomic status and 6th grade

non-low socioeconomic status) that had a decrease in their RIT Reading score improvement during one of the winter testing sessions. The 6th grade low-socioeconomic group had a decrease in their RIT Reading scores during the second winter testing session (Winter 2021 to Winter 2022), while the 6th grade non-low socioeconomic group experienced a decrease in their scores during the first winter testing session (Winter 2019 to Winter 2020). Overall, low-socioeconomic status students that participated in the summer program did have additional growth in their RIT Mathematics scores between the winter testing periods, increasing from a +8.78-point increase to a +11.78-point increase (+3.00-point difference). Non-low socioeconomic status students that participated in the summer program also saw the academic growth increase from a +8.17-point increase to a +10.78-point increase (+2.61-point difference).

Table 10 provides the average increase in RIT score in Reading for both low-socioeconomic students and non-low socioeconomic students that participated in the summer program during the timeframes that were established for this study (Fall 2019 to Fall 2020, Fall 2020 to Fall 2021, Winter 2020 to Winter 2021, and Winter 2021 to Winter 2022).

Table 10*Average Change in RIT Reading Scores for Students Enrolled in Summer Program**(Summer 2021)*

<i>Grade Level</i>	<i>Fall 2019 to Fall 2020</i>	<i>Fall 2020 to Fall 2021</i>	<i>Winter 2020 to Winter 2021</i>	<i>Winter 2021 to Winter 2022</i>
2 nd Grade (Free/Reduced)	13.88	11.75	1.88	14.38
2 nd Grade (Neither)	19.00	7.00	16.50	6.83
3 rd Grade (Free/Reduced)	15.00	17.33	18.67	11.33
3 rd Grade (Neither)	5.00	11.33	8.83	9.00
4 th Grade (Free/Reduced)	5.33	7.33	11.33	8.00
4 th Grade (Neither)	5.50	9.00	10.67	5.83
5 th Grade (Free/Reduced)	9.33	3.00	7.33	-0.67
5 th Grade (Neither)	5.33	0.67	2.00	-1.67
6 th Grade (Free/Reduced)	11.33	4.00	12.33	-1.67
6 th Grade (Neither)	5.50	5.00	2.00	0.00
Overall (Free/Reduced)	10.87	9.17	8.61	8.26
Overall (Neither)	8.87	7.65	9.83	5.43

When examining the NWEA MAP Reading benchmark assessments for both low-socioeconomic status and non-low socioeconomic status students that participated in the summer program during the summer of 2021 there were four groups of students that showed continued improvement in their RIT scores across the fall testing intervals (2nd grade low-socioeconomic status, 3rd grade low-socioeconomic status, 3rd grade non-low socioeconomic status, and 4th grade low-socioeconomic status). 3rd grade

non-low socioeconomic status students that participated in the summer program (6 total) showed their largest improvement in their academic growth with an additional 6.33-point increase. 3rd grade low-socioeconomic status students (3 total) and 4th grade low-socioeconomic status students (6 total) that participated in the summer program showed an additional 2.33-point increase (3rd grade low-socioeconomic status) and a 2.00-point increase (4th grade low-socioeconomic status) in their RIT Reading scores. Overall, low-socioeconomic status students that participated in the summer program (23 students) did not have additional growth between the fall testing periods, decreasing from a +10.87-point increase to a +9.17-point increase (-1.70-point difference). Similarly, non-low socioeconomic status students that did participate in the summer program saw the academic growth decrease from a +8.87-point increase to +7.65-point increase (-1.22-point difference).

When examining the RIT scores for NWEA MAP Reading assessments completed during the established winter testing sessions, there were only two groups of students (2nd grade low-socioeconomic status and 3rd grade non-low socioeconomic status) that showed an increased improvement in RIT scores when comparing these winter testing sessions. Second grade low-socioeconomic status students that participated in the summer program (8 total) showed an additional 12.50-point increase while 3rd grade non-low socioeconomic status students that participated in the summer program (6 total) showed an additional 0.17-point increase in their RIT Reading scores. Conversely, there were four groups (5th grade low-socioeconomic status, 5th grade non-low socioeconomic status, 6th grade low-socioeconomic status, and 6th grade non-low socioeconomic status) that had no change or a decrease in their RIT Reading scores from

the Winter 2021 to the Winter 2022 testing sessions. Similar to the results examined from the fall testing sessions, both low-socioeconomic status students and non-low socioeconomic status students that participated in the summer program did not have additional growth in their RIT Reading scores when comparing the winter testing periods. Low-socioeconomic status students that participate in the summer program (23 total) saw a decrease in their academic growth from a +8.61-point increase to a +8.26-point increase (-0.35-point difference). Non-low socioeconomic status students that participated in the summer program (23 total) saw a larger decrease in their RIT Reading score improvement from a +9.83-point increase to a +5.43-point increase (-4.40-point difference).

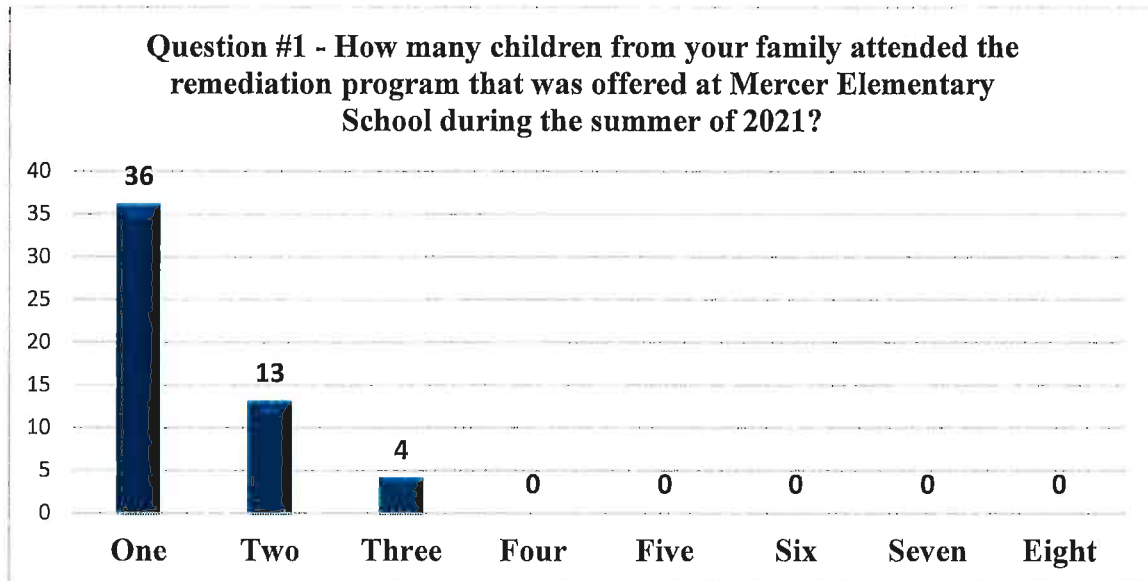
Qualitative Data – Parent/Family Survey and Summer Staff Survey

As stated earlier in this chapter, there were two surveys used to gather qualitative data for this mixed-methods action research project. The first survey was sent to the families of students that were enrolled within the summer program that took place at Mercer Elementary School during the summer of 2021 (Appendix B). A total of fourteen questions were included within the survey, eleven that were multiple choice/checkboxes and three short answer questions. There were four multiple choice questions (Question 2, 5, 7, and 11) that allowed individuals to enter multiple responses, which would account for the larger number of responses listed in each figure and in the analysis for each of these questions. Of the 106 students that participated in the summer program, a total of 51 responses were collected. These responses accounted for 72 students that were enrolled in the summer program during the summer of 2021, with 38 being enrolled in grades 2-6 during the 2020-2021 school year. Responses to the survey were submitted by

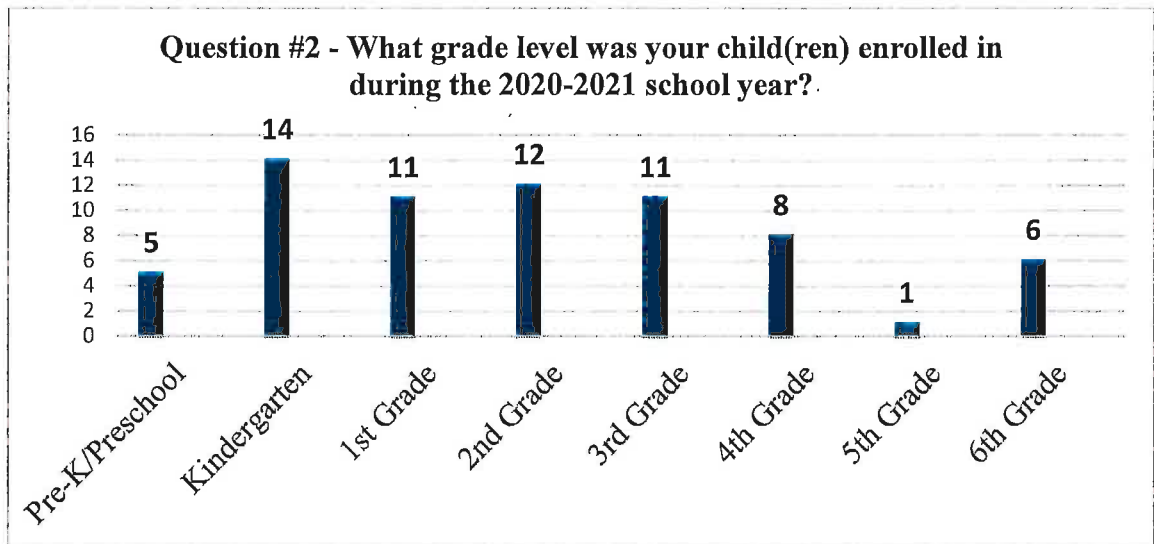
families both electronically through Google forms and in hard copy form that were mailed back to the researcher. Figures 1-11 contain the results of the multiple-choice questions (Questions 1-8, 11, 12, 13) that were part of the survey.

Figure 1

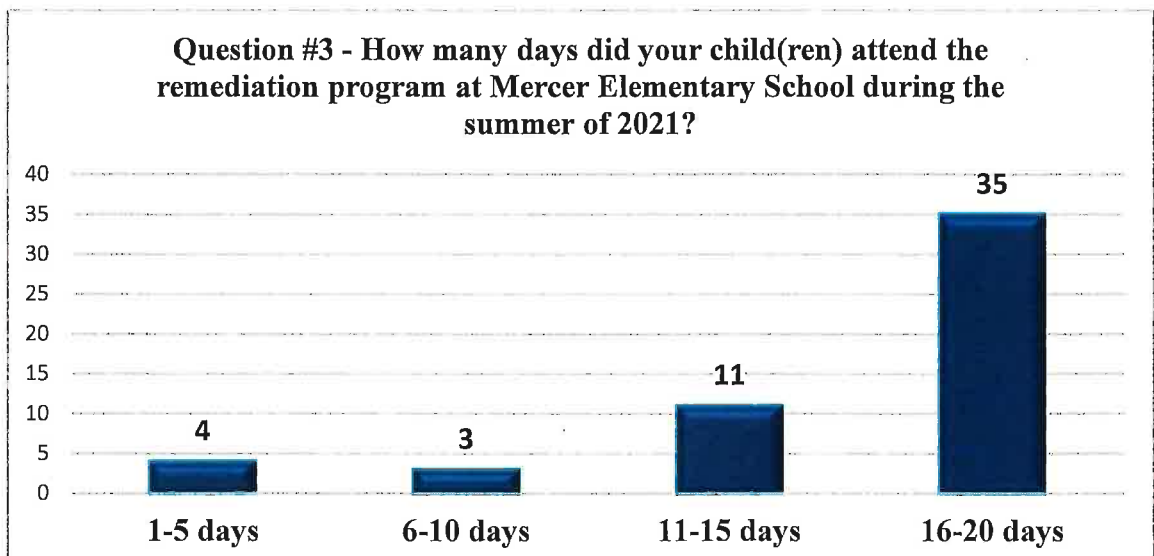
Parent/Family Survey Question 1



A total of 53 responses were tabulated for Question 1. 67.9% (36 total) of the families that responded had one student enrolled in the summer program during the summer of 2021. The other families that responded had either two students (24.5%) or three students enrolled in the program (7.5%).

Figure 2*Parent/Family Survey Question 2*

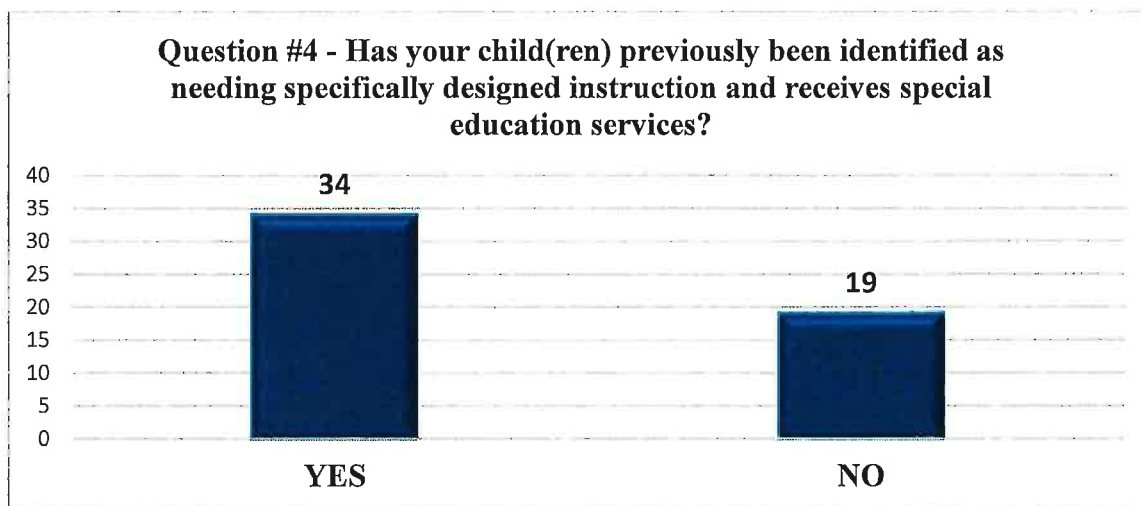
A total of 68 responses were recorded for Question 2. Each of the seven grade levels (Pre-K/Preschool to sixth grade) were represented, with Kindergarten (20.6%), second grade (17.6%), first grade (16.2%), and third grade (16.2%) making up the majority of the responses that were provided by the families.

Figure 3*Parent/Family Survey Question 3*

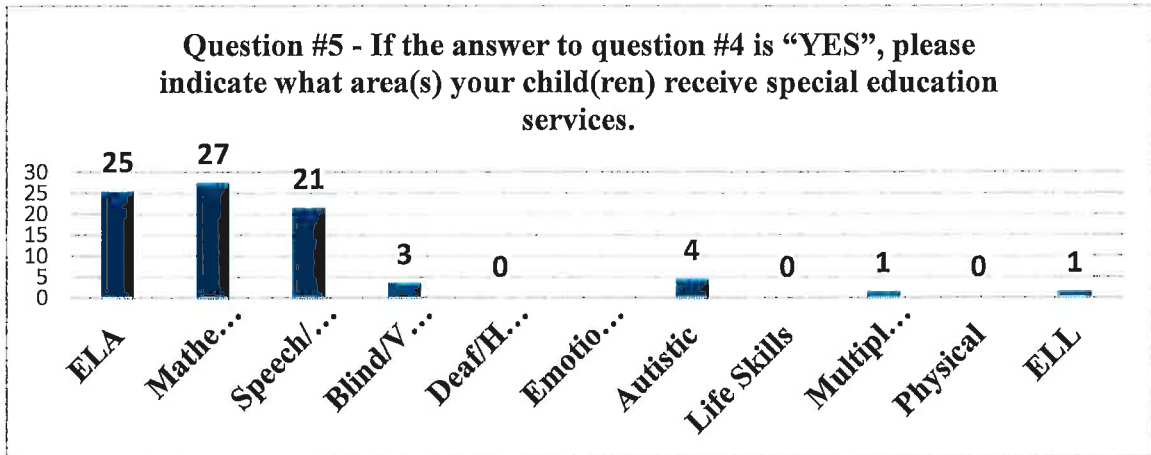
The summer program was held for approximately twenty days (June 21, 2021 – July 20, 2021) during the summer of 2021. Approximately 66.0% (35 total) of the families that responded to Question 3 reported that their student(s) attended between sixteen and twenty days during the summer program. An additional 20.8% (11 total) responses stated that students attended between eleven and fifteen days through the duration of the program.

Figure 4

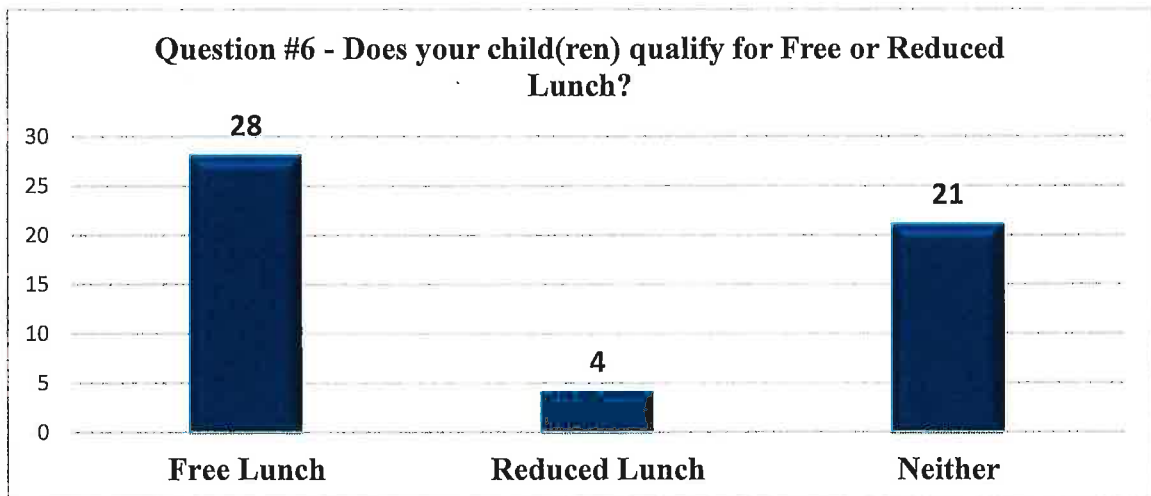
Parent/Family Survey Question 4



A total of 53 responses were recorded for Question 4 of the parent/family survey, with 64.2% of the families (34 total) responding that they have a student that has qualified for special education services and received specifically designed instruction through an individualized education plan (IEP) during the 2020-2021 school year. The remaining 35.8% that responded (19 total) have student that participate in regular education classes throughout the school day.

Figure 5*Parent/Family Survey Question 5*

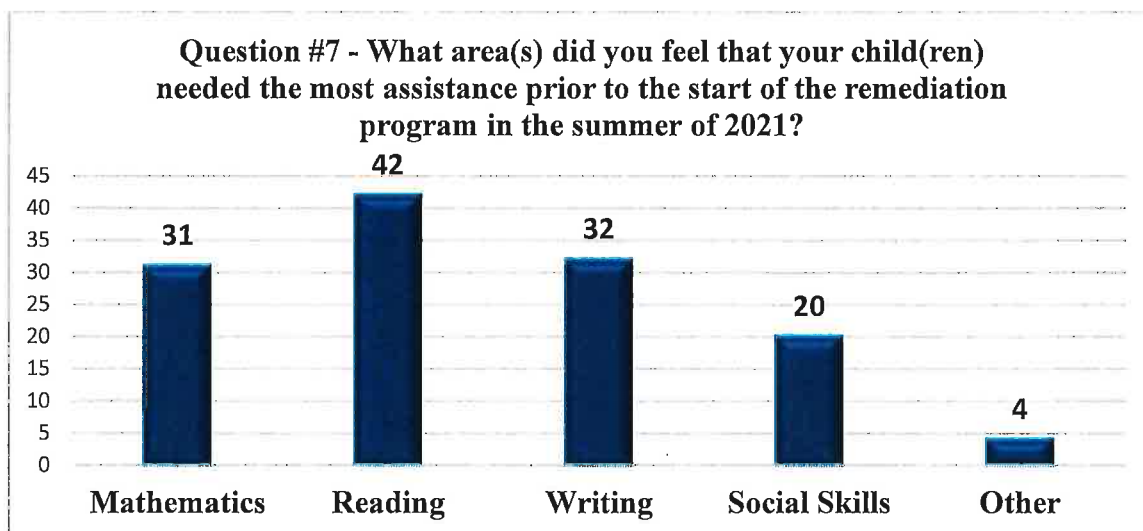
Of the families that answered "YES" to Question 4, a total of 85 responses were recorded indicating the different special education services that were provided for students that had an individualized education plan (IEP) during the 2020-2021 school year. Mathematics (31.8%), English/Language Arts (29.4%) and Speech/Language Support (24.7%) were the three largest categories for services provided to students that chose to participate in the summer program at the elementary school.

Figure 6*Parent/Family Survey Question 6*

A total of 53 responses to Question 6 in the parent/family survey, with 52.8% of the families (28 total) reporting that their student qualifies for free lunches, while 7.5% (4 total) reported that qualified for reduced lunches. These two groups make up the low socioeconomic group of students that is part of this action research study. The remaining 39.6% (21 total) of responses recorded represent the non-low socioeconomic group of students that participated in the summer program.

Figure 7

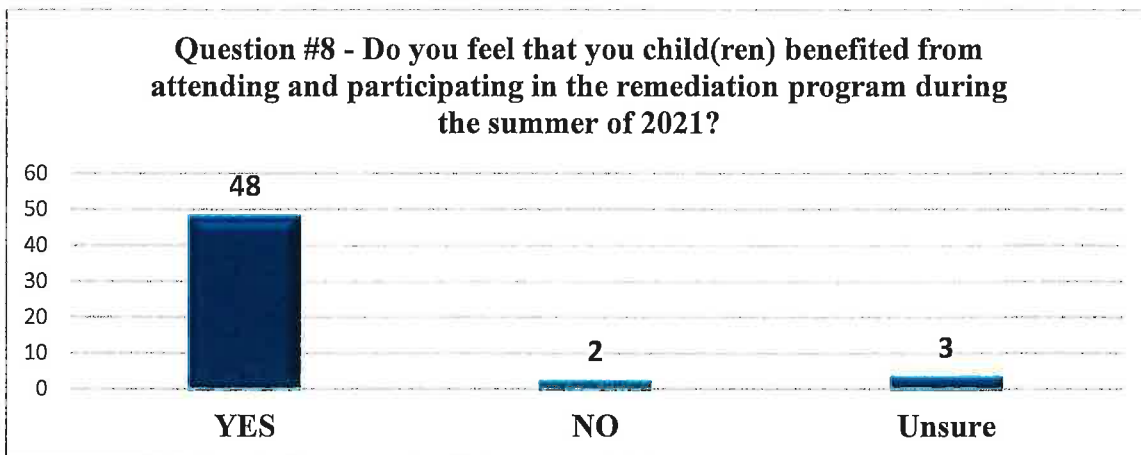
Parent/Family Survey Question 7



One hundred thirty responses were recorded for Question 7 of the parent/family survey. Reading (33.1%), Writing (24.6%), Mathematics (23.8%), and Social Skills (15.4%) made up all but four responses that were submitted. In the category of “Other”, there were a total of four responses (3.1%), with all listing “self-confidence” as the area that they felt their student needed the most assistance prior to the start of the summer program.

Figure 8

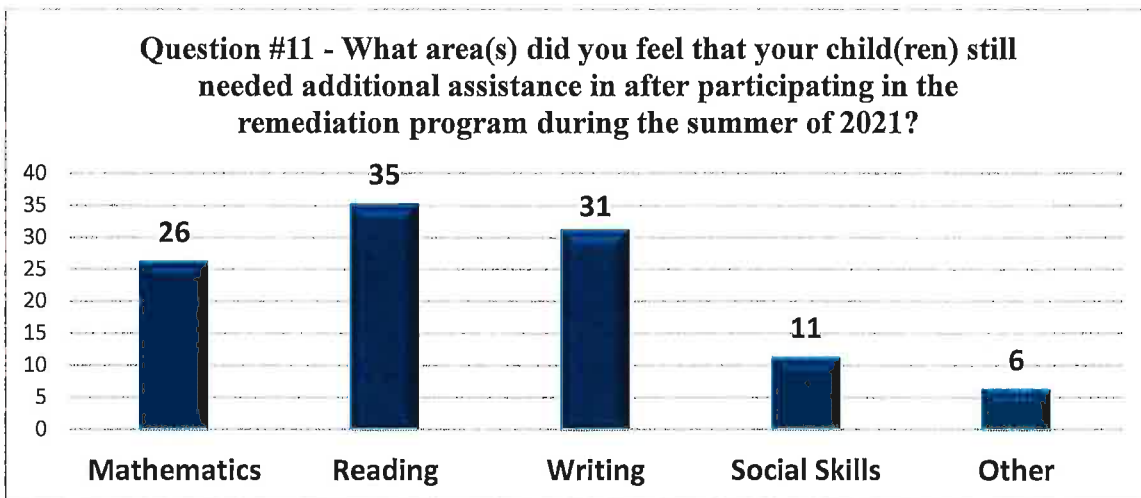
Parent/Family Survey Question 8



When examining responses to Question 8, 90.6% of the families (48 total) felt that their student benefited from attending and participating in the summer program that was provided at the elementary school during the summer of 2021. There were two families (3.8%) that did not believe that their child benefited from the program and three families (5.6%) that were unsure as to whether or not their child benefited from the summer program at the time that they completed the survey.

Figure 9

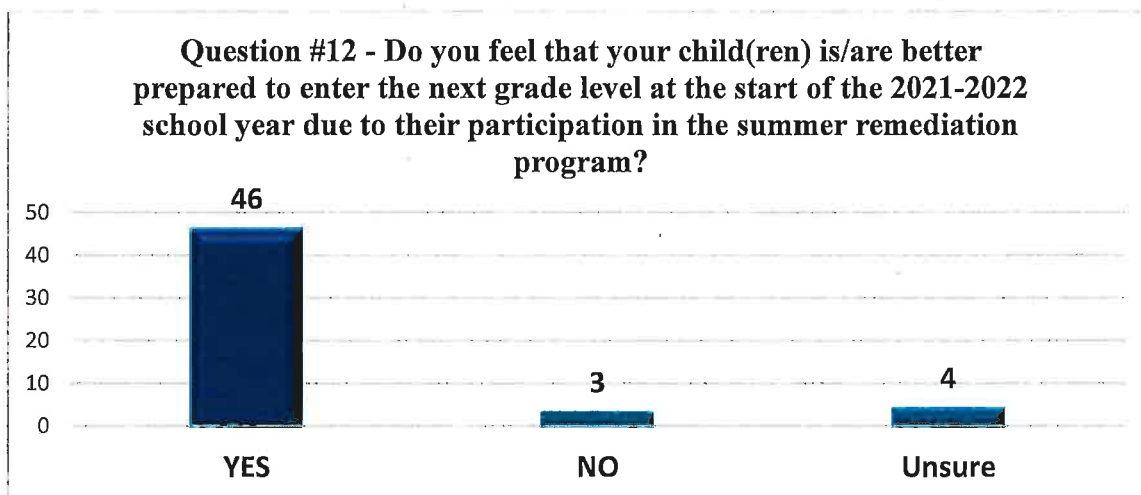
Parent/Family Survey Question 11



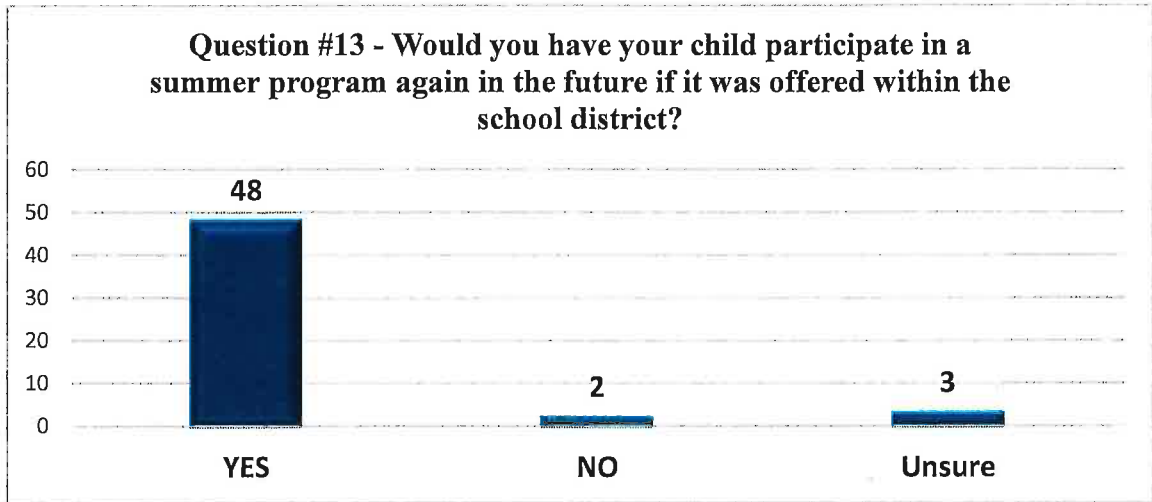
A total of 109 responses were recorded for Question 11 of the parent/family survey. Similar to Question #7, Reading (32.1%), Writing (28.4%), Mathematics (23.9%), and Social Skills (10.1%) made up the majority of the responses that were submitted. In the category of “Other”, there were a total of six responses (5.5%), with “spelling” and “building self-confidence” listed as the areas that families still felt their student needed additional assistance in after participating in the summer program.

Figure 10

Parent/Family Survey Question 12



Of the 53 responses that were submitted for Question 12, a total of 46 (86.8%) families stated that they felt their child was better prepared to enter the next grade level because of their participation in the summer program at the elementary school. An additional 5.7% (3 total) of the families did not believe that their child was better prepared moving forward and 7.5% (4 total) were unsure at the time that they completed the survey.

Figure 11*Parent/Family Survey Question 13*

The final multiple-choice question of the survey (Question 13) asked families whether or not they would have their child participate in the summer program in the future if was offered within the school district. A total of fifty-three responses were recorded for this question, with 90.6% (48 total) of families stating that they would have their child participate in the summer program in the future. Two families (3.8%) stated that they would not have their child participate in future summer programs and three families (5.6%) were unsure at the time that they completed the survey.

Question 9 within the survey that was disseminated to parents/families ask them to describe in their own words how their child(ren) benefited from participating in the summer remediation program. The statements listed below were provided in response to this question:

- Helped to stop the "summer information dump".
- She was able to get familiar with the building and be prepared for the next school year.

- Socialization and the retention of knowledge between grades.
- There was an improvement in his math skills along with reading.
- It provided them a chance to review the core subject content.
- With COVID, homeschooling, and just lack of proper instruction this program helped fill in the gaps to get them on track for the new year.
- Helped with socialization and confidence.
- We feel that the program greatly benefits both of are kids in various spectrums of all the subject.
- My child was able to greatly improve his writing ability over the summer.
- This program helped bridge the gap between school years.
- Consistent learning really helped in the transition back to school. He was able to have a less stressful environment which really helped his writing skills
- She can read better with understanding, improved in her math skills (addition & subtraction), and improved in her writing skills
- They were prepared for the next school year & learned things they would be working on in class the next year. It kept their minds fresh during the summer.
- She improved in mathematics, reading skills, & writing skills.
- Yes, not only did they receive instruction and review material, but they were able to maintain social interaction with their peers.
- He was able to learn more reading & writing skills and was given the opportunity to be around friends and socialize.
- Reintroduced concepts that could have been lost over the summer and restarted a schedule.

Question 10 asked families/parents to describe in their own words why they feel that their child(ren) did not benefit from the summer remediation program if they answered “NO” to Question 8 within the survey. While there was one “NO” response submitted for Question 8, no responses were provided for Question 10.

Question 14 asked parents/families to list what types of activities and/or lessons they would like to see as part of a summer program offered by the school district in the future. Listed below are the responses that were provided by the families for this question:

- Math, Reading, Writing, and Spelling activities
- More independent learning.
- More of a tutoring program that a parent/teacher could pick which areas each student needed.
- Maintain the same program as last year
- STEM Science to encourage participation in both reading & math
- Outdoor nature exploration would be neat.
- More reading, grammar, crafts, science, & social studies.
- Reading skill building & next grade-level prep.
- Loved the program. Truly helped him with confidence to talk to other kids & teachers. Very relaxed environment. His writing skills still need work, but he does not or has not had any behaviors when his teacher assigns writing tasks this year.
- Summer program was very nice balance of learning and social skills.

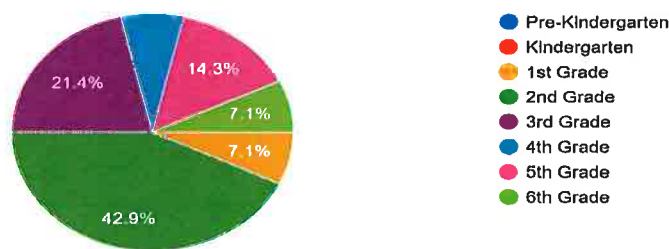
- An addition of brain development games such as chess would be a welcoming change.

The second survey that was created was used to collect responses from the instructor and assistants that worked with the elementary students in the summer program (Appendix C). Fifteen questions were included within this survey, nine that were multiple choice/checkboxes and six short answer questions. A total of fourteen responses were collected from the individuals that served as either an instructor or as an assistant in the summer program during the summer of 2021. Responses to the survey were all submitted electronically via a Google Form. Figures 12-24 contain the results of the multiple-choice questions (Questions 1-12 and Question 13) that were part of the survey.

Figure 12

Summer Program Staff Survey Question 1

1. What grade level did you work with during the remediation program in the summer of 2021?
14 responses



A total of 14 responses were recorded for Question 1 of the staff survey. Six instructors/assistants (42.9%) reported that they worked with students that were transitioning from second grade to third grade. An additional 21.4% (3 individuals) worked with third grade students transitioning to fourth grade and 14.3% (2 individuals)

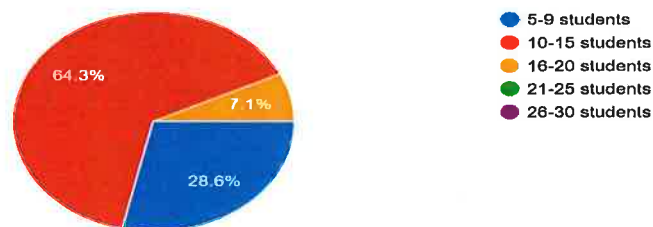
worked with fifth grade students that were transitioning to sixth grade the next school year.

Figure 13

Summer Program Staff Survey Question 2

2. How many students were enrolled in the group that you worked with during the remediation program in the summer of 2021?

14 responses



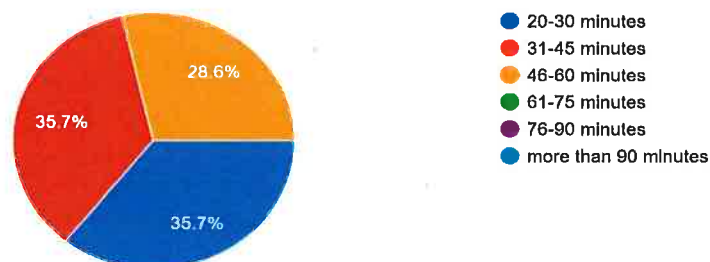
When examining responses to Question 2, 64.3% (9 individuals) reported that they worked with between 10-15 students in their group during the summer program. An additional 28.6% (4 individuals) responded that they had 5-9 students in their group, and 7.1% (1 individual) reported that they had between 16-20 elementary students in their group for the summer program

Figure 14

Summer Program Staff Survey Question 3

3. How much time did you spend on instruction/remediation in MATHEMATICS each day during the remediation program in the summer of 2021?

14 responses



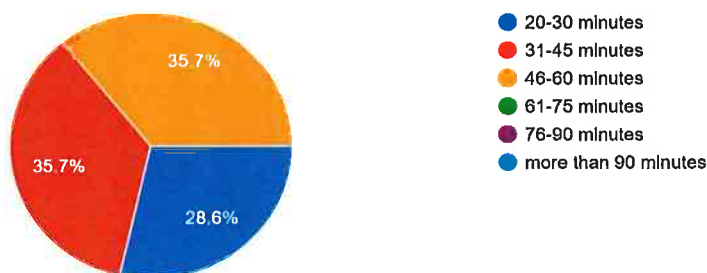
Question 3 asked the summer program staff to report how much time they spent on instruction in Mathematics during the summer program. Of the 14 responses that were recorded, 35.7% (5 individual) reported that they spent 20-30 minutes and 35.7% (5 individual) spent 31-45 minutes each day working through lessons and/or activities directly related to Mathematics. The remaining 28.6% (4 individuals) spent between 46-60 minutes on Mathematics instruction with their students each day throughout the summer program.

Figure 15

Summer Program Staff Survey Question 4

4. How much time did you spend on instruction/remediation in READING each day during the remediation program in the summer of 2021?

14 responses

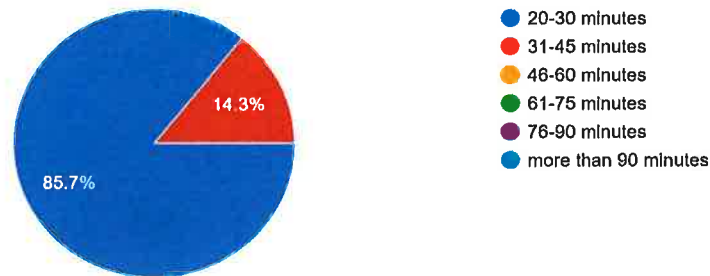


A total of 14 responses were recorded for Question 4, with 35.7% (5 individual) reporting that they spent 31-45 minutes and an additional 35.7% (5 individual) spending between 46-60 minutes each day working through lessons and/or activities directly related to Reading. The remaining 28.6% (4 individuals) spent between 20-30 minutes on Reading instruction with their students each day throughout the summer program.

Figure 16*Summer Program Staff Survey Question 5*

5. How much time did you spend on instruction/remediation in WRITING each day during the remediation program in the summer of 2021?

14 responses

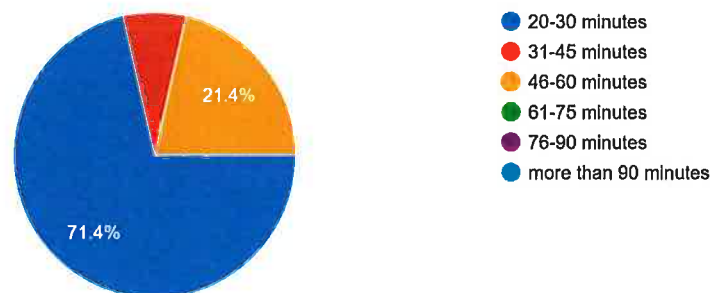


When examining responses to Question 5, 85.7% (12 individuals) reported that they spent between 20-30 minutes each day providing lessons and activities that were related to Writing to the students each day throughout the summer program. The remaining 14.3% (2 individuals) reported that they spent between 31-45 minutes each day on Writing instruction.

Figure 17*Summer Program Staff Survey Question 6*

6. How much time did you spend on instruction/remediation in SOCIAL SKILLS each day during the remediation program in the summer of 2021?

14 responses



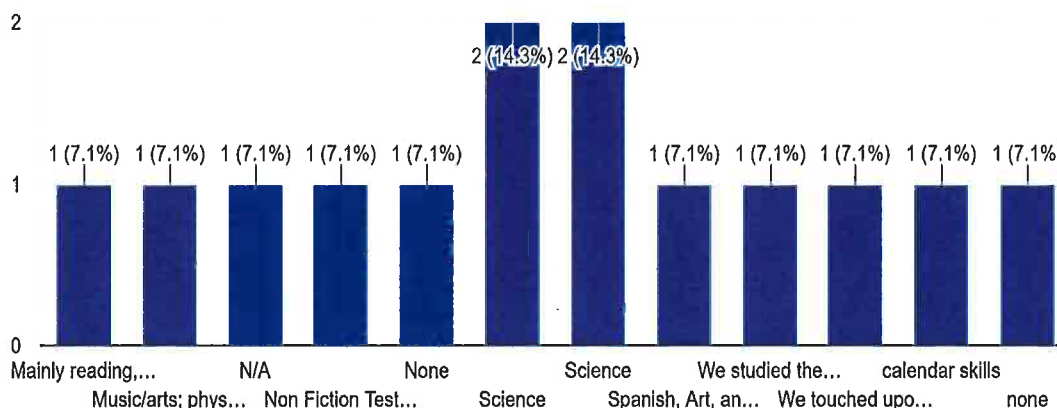
Of the 14 responses provided for Question 6, 71.4% (10 individuals) reported that they spent between 20-30 minutes with their students each day on lessons and activities that were related to the development of Social Skills. An additional 21.4% (3 individuals) spent between 46-60 minutes with their students and 7.1% (1 individual) spent 31-45 minutes on Social Skills development.

Figure 18

Summer Program Staff Survey Question 7

7. What other content areas did you dedicate time for instruction/remediation during the remediation program in the summer of 2021?

14 responses



A total of 4 responses (28.6%) provided for Question 7 listed Science as the other content area that was covered by instructors and assistants during the summer program. The other ten responses (7.1% each) listed the following topics and concepts that were covered during the summer program:

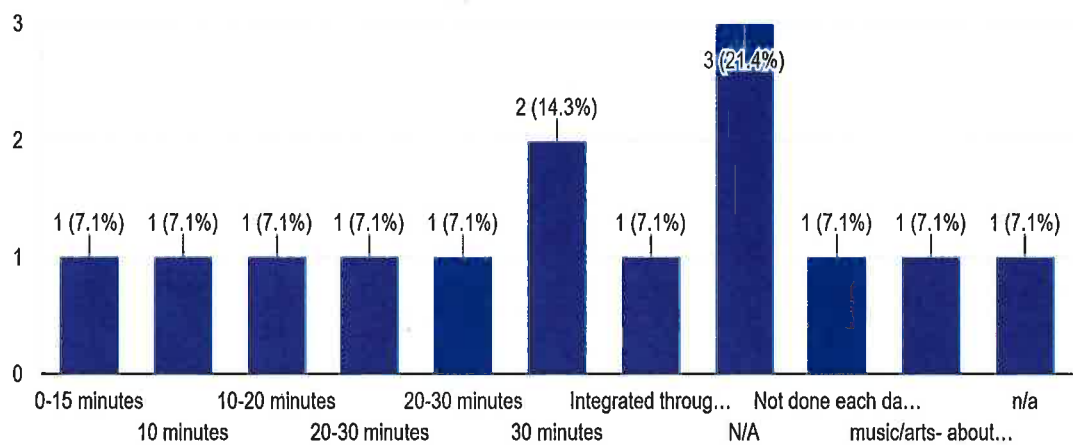
- Reading, Math, Writing
- Music, Art, and Physical Education
- Non-fiction text (Science and Social Studies) through Reading lessons

- Spanish, Art, and Music
- Summer Olympics (2 responses)
- Calendar skills
- None (3 responses)

Figure 19*Summer Program Staff Survey Question 8*

8. If you listed any additional content area(s) in Question #7 please list the amount of time that you dedicated for instruction/remediation each day d...g the remediation program in the summer of 2021.

14 responses



As a follow-up to Question 7, instructors and assistants were asked to list how much time they spent each day on the additional content areas that were covered with students during the summer program. Two individuals (14.3%) stated that they spent 30 minutes providing lessons and activities on additional content. Five individuals (35.7%) did not devote any time during the three hours that they worked with students each day on additional content areas outside of Mathematics, Reading, Writing, and Social Skills.

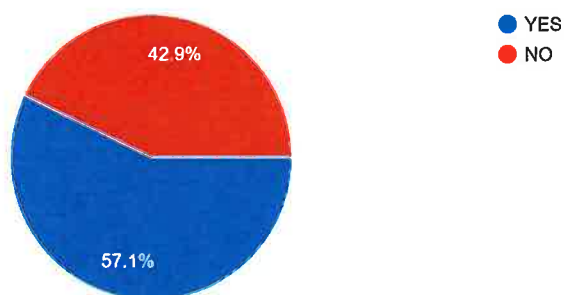
The other seven responses (7.1% each) provided a range of responses from 0-15 minutes to 20-30 minutes time periods for instruction in additional content areas.

Figure 20

Summer Program Staff Survey Question 9

9. Did you use Edmentum/Study Island with the students in your classroom during the remediation program in the summer of 2021?

14 responses

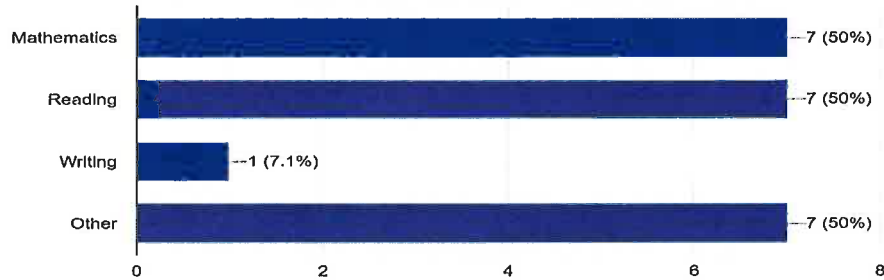


Of the 14 responses recorded for Question 9, 57.1% (8 individuals) stated that they used the Study Island/Edmentum program to provide Mathematics and/or Reading lessons and activities for their students each day. The remaining 42.9% (6 individuals) did not use the program while working with students during the summer program.

Figure 21*Summer Program Staff Survey Question 10*

10. If you answered "YES" to Question #9, which content area(s) did you use Edmentum/Study Island as a resource for remediation/instruction (check all that apply).

14 responses

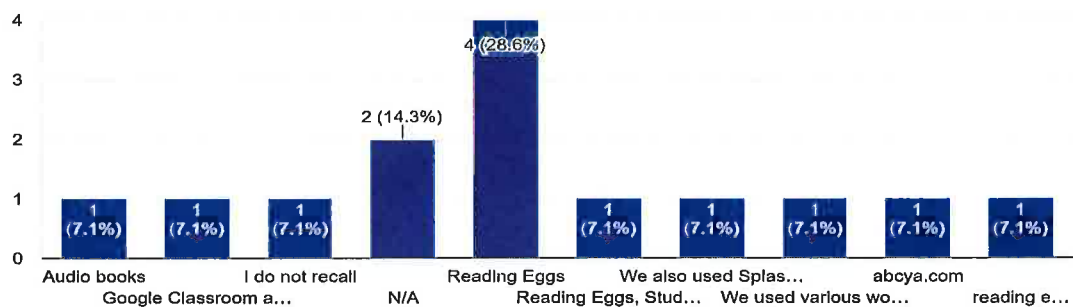


Eight individuals reported that they used the Edmentum/Study Island program with their students during the summer program. Mathematics (7 responses), Reading (7 responses), Writing (1 response), and Other (7 responses) were the different content areas that were addressed through the use of this online program. The "Other" responses stated that they used informational text to provide lessons and activities related to both Science and Social Studies.

Figure 22*Summer Program Staff Survey Question 11*

11. If you answered "NO" to Question #9, what other online resource(s)/program(s) did you use when working with the students in your classroom... the remediation program in the summer of 2021?

14 responses



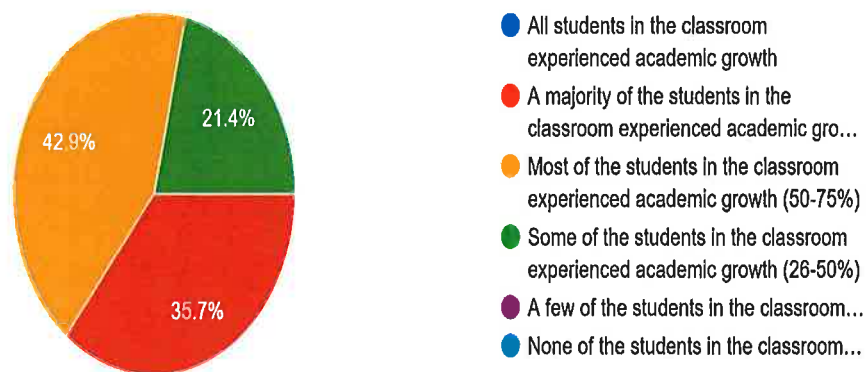
A total of 5 individuals (35.7%) reported that they had students complete lessons and activities through the Reading Eggs program. The Reading Eggs program is an extension of the Study Island/Edmentum program that is geared toward Reading remediation and instruction for students in Kindergarten, first grade, and second grade. Seven responses (7.1% each) reported use of a variety of online resources including audio books, Google classroom activities, Splash Learn, Timestable.com, and abcya.com

Figure 23

Summer Program Staff Survey Question 12

12. Did you witness academic growth/improvement in the students that you worked with in the remediation program during the summer of 2021?

14 responses



Fourteen responses were recorded for Question 12. Six individuals (42.9%) reported that most of the students in their group (50-75%) experienced academic growth and improvement by the end of the program. An additional 35.7% (5 individuals) reported that a majority (76-99%) experienced growth and improvement, and 21.4% of the instructors and assistants that completed the survey (3 total) reported that some

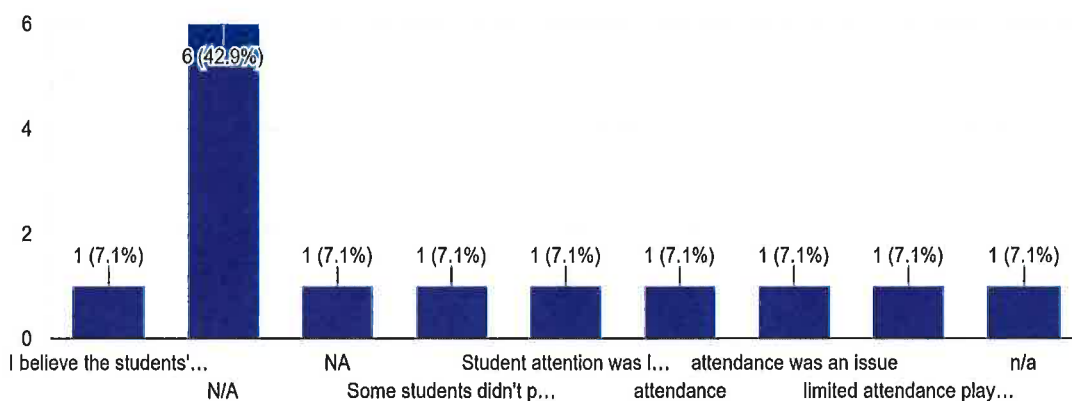
students (26-50%) experienced some form of academic growth and improvement by the end of the summer program.

Figure 24

Summer Program Staff Survey Question 14

14. If you answered "NO" to Question #12, what barrier(s) do you believe limited the academic growth of the students during the summer program?

14 responses



A total of 14 responses were recorded for Question 14 of the survey. Eight instructors/assistants (57.1%) did not believe that there were any barriers that limited the academic growth of students during the summer program. Three individuals (21.3%) listed the attendance of the students throughout the twenty days that the program was offered as a barrier that played a factor in whether or not they experienced academic growth. The remaining three responses (7.1% each) listed busy schedules with multiple activities, a lack of air conditioning in the elementary building, and a lack of effort as potential barriers that would not allow students to grow academically based on their participation in the summer program.

Question 13 asked instructors and assistants to list what factors they believe contributed to the academic growth of students that participate in the summer remediation program if they answered “YES” to Question 12. Listed below are the responses that were provided for this question:

- Small group instruction.
- Blend of songs, games, and crafts that accompanied the academic lessons. This made the students eager to learn and participate.
- Extra practice in math and reading.
- Consistent learning provided throughout the summer months.
- Number of individuals within the classroom assist in providing more individualized instruction.
- Development of personal relationships between teachers and students.
- Length of program and consistent attendance.

Question 15 asked instructors and assistants to list what diagnostic tools and/or resources they used to measure the academic growth of the students in their classroom during the summer remediation program. Listed below are the responses that were provided for this question:

- Study Island and Reading Eggs
- NWEA MAP assessments
- Fast Phonics
- TimesTables.com
- Sight word cards, quick math facts, daily practice
- Reading and Writing conferences

Verification of Data

The triangulation of data during this action research project was completed in order to eliminate any potential bias that may exist during the data collection process and to provide “evidence that results are accurate and are not a result of researcher bias” (Hendricks, 2017, p. 68). The reliability of the results produced within the study and the findings that are shared by the researcher can be validated when the triangulation of data occurs. This was done through the use of multiple methods to collect both NWEA Measure of Academic Progress (MAP) benchmark assessment results in both Mathematics and Reading (quantitative data) over a three-year period (2019-2020, 2020-2021, and 2021-2022) and results from surveys that were distributed to families of elementary students that participated in the summer program and by the instructors and assistants that worked with these students during the summer of 2021 (qualitative data).

The NWEA MAP benchmark assessment results in both Mathematics and Reading were compiled and reviewed for students that were enrolled in grades 2-6 at Mercer Elementary school during the 2020-2021 school year. Students that had valid RIT scores in both Mathematics and Reading for each of the designated testing sessions (Fall 2019, Fall 2020, Fall 2021 and Winter 2020, Winter 2021, Winter 2022) were included within the study. These RIT scores were compiled into a Microsoft Excel spreadsheet in order to calculate the average growth that took place in both Mathematics and Reading across the establish fall testing intervals (Fall 2019 to Fall 2020 and Fall 2020 to Fall 2021) and winter testing intervals (Winter 2020 to Winter 2021 and Winter 2021 to Winter 2022). Additional analysis of the average RIT score growth was completed for each of the subgroups that were created based upon the criteria outlined through each of the research questions that were established for this study.

The qualitative data that was gathered through the responses provide by both families of elementary students that participated in the summer program and by the instructors and assistants that worked with these students during the summer of 2021 was correlated with the average change in RIT Scores in both Mathematics and Reading that was calculated across both the fall and winter testing intervals and reinforced the positive gains that different subgroups of students experienced through participation in the program. Additional discussion regarding how the responses to each of the questions from the two surveys related to each of the research questions in included later in this chapter.

Discussion

This action research study employed a mixed-methods approach within the data collection process. Quantitative data included NWEA Measure of Academic Process (MAP) benchmark assessment data in both Mathematics and Reading for elementary students over a three-year period (2019-2020, 2020-2021, and 2021-2022). This assessment data was categorized into based upon the three research questions that were established for this study,

- 1) What is the rate of academic growth of students that participate in an elementary summer remediation program (grades 2-6)?
- 2) What impact does a summer remediation program have on the academic growth of regular education students vs special education/learning support students at the elementary level (grades 2-6)?

- 3) What impact does a summer remediation program have on the academic growth of low socioeconomic status students vs non-low socioeconomic status students at the elementary level (grades 2-6)?

Intervals were created during the analysis of MAP benchmark assessment results in both Mathematics and Reading in order to establish baseline data (Fall 2019 to Fall 2020 and from Winter 2020 to Winter 2021). The increase or decrease in the RIT Scores for both Mathematics and Reading during these established periods of time were compared to assessment results from Fall 2020 to Fall 2021 and from Winter 2021 to Winter 2022 to determine the level of academic growth or regression for each student that met the established criteria for this study. Continued academic growth would be defined as a continued increase in the average RIT Score for a student or group of students between the testing intervals. In a similar context, regression would be a decrease in the average RIT Score in Mathematics and/or Reading across the establish testing intervals.

Qualitative data was collected through surveys that were distributed to both the families of students that participated in the summer program at Mercer Elementary School during the summer of 2021 and the group of instructors and assistants that worked with these students. A combination of multiple-choice/checkbox questions and short answer responses were included within both surveys in order to gather demographic information and feedback on their experience participating in the summer program. The responses that were submitted for each question within both surveys were tabulated and visual representations of the results were created to illustrate the impact that participation in the summer program had on the different groups of elementary students.

Results for Research Question 1 indicated that students in grades 2-6 who participated in the summer program and students in grades 2-6 that did not participate in the summer program at Mercer Elementary school both demonstrated continued academic improvement based on the increases in their RIT scores in Mathematics between both the fall testing intervals and the winter testing intervals. Students that participated in the summer program (46 total) experienced a gain of an additional 0.57 points in their RIT Mathematics score over the fall testing sessions and an additional 2.80 points over the winter testing sessions. In comparison, students that did not participate in the summer program (273 total) experienced an overall larger gain across both testing intervals. Data showed that this group of students had an additional 5.24-point gain in their RIT Mathematics score over the fall testing intervals and an additional 1.89-point gain over the winter testing intervals. While both groups of students show increases in RIT Reading scores across both the fall testing intervals and winter testing intervals, there was an overall decrease in the amount of academic growth when comparing the fall and winter testing data. Students that participated in the summer program registered a 1.46-point decrease in their RIT score improvement over the fall testing period and a 2.37-point decrease in improvement across the winter testing sessions. Students that did not participate in the summer program also experienced decreases in their RIT Reading score improvement over both testing periods, with a 1.55-point decrease taking place over the fall testing sessions and a 2.11-point decrease occurring across the winter testing intervals.

The decreases in RIT Reading score improvement across both the fall and winter testing intervals for the students that did participate in the summer program and for those

students that chose not to participate in the program agrees with the responses to several of the questions that appeared on the survey that was distributed to families of students that participated in the summer program. Of the responses that were submitted for Question 7, “What area(s) did you feel that your child(ren) needed the most assistance prior to the start of the remediation program in the summer of 2021”, 57.7% of the families indicated that their child needed assistance in Reading and Writing. When tabulating responses to Question 11, “What area(s) did you feel that your child(ren) still needed additional assistance after participating in the remediation program in the summer of 2021”, 60.4% of the responses listed Reading and Writing as areas of concern. In contrast, responses to several of the questions on the survey that was completed by instructors and assistants that worked with students throughout the summer program do not agree with the net decrease in RIT Reading score improvement experienced by the students that participated in the summer program. Instructors and assistants reported that they spent either 31-45 minutes (35.7%) or 46-60 minutes (35.7%) each day providing instruction and/or remediation in Reading. Additionally, 85.7% (12 individuals) reported that they spent 20-30 minutes each day on activities directly related to Writing skills. When combining these responses, it would equate to a minimum of 51 minutes and a maximum of 90 minutes each day on instruction and/or remediation related to English Language Arts.

Research Question 2 examined data collected for the students that participated in the summer program at Mercer Elementary school during the summer of 2021, specifically looking at those students that qualified for support services through an individualized education plan (IEP) and those students that strictly participated in the

regular education curriculum. Overall, regular education students (20 total) experienced additional gains in both Mathematics and Reading across all testing intervals while special education students (26 total) had a decrease in their RIT Score improvement in three out of four testing intervals that were reviewed. Regular education students (20 total) experienced gains in their RIT Mathematics scores across both the fall and winter testing intervals, with an increase of an additional 2.05 points in the fall and an additional 5.10 points between winter sessions. Special education students (26 total) experienced a decrease (-0.58 points) across fall testing sessions, but had an increase in their RIT Mathematics scores (+1.03 points) when comparing data between the winter testing sessions. When examining data collected from the MAP Reading assessments, regular education students again experienced net gains across both the fall testing sessions (+1.25 points) and winter testing sessions (+1.50 points). Special education students experienced a decrease in their RIT Reading score improvement over both testing intervals. This groups of students (26 total) displayed a decrease of 3.54 points when comparing fall testing data and a decrease of 5.35 points in the winter.

64.2% (34 total) of the responses provided within the survey that was sent to families of students that participated in the summer program indicated that their child had been identified as needed specifically designed instruction and receiving special education services. 31.8% of the special education students (27 total) received support services in Mathematics instruction. This would correlate directly with the decrease in the improvement of RIT Mathematics scores experienced across the fall testing intervals by special education students that participated in the summer program. Additionally, 31 out of 130 responses (23.8%) to Question 7 indicated that Mathematics was an area that

families felt their child(ren) need the most assistance prior to the start of the summer program and 26 out of 109 responses (23.9%) to Question 11 indicated that Mathematics was still an area where additional instruction and remediation was needed after the program. Instructors and assistants that worked with students in the program reported that they devoted 20-30 minutes (35.7%), 31-45 minutes (35.7%), or 46-60 minutes (28.6%) to instruction and/or remediation in Mathematics each day throughout the duration of the summer program.

The final research question that was established for this study examined the NWEA MAP benchmark assessment data gathered for students that participated in the summer program based upon their socioeconomic status. Students that would be identified as low-socioeconomic status (23 total) experienced gains in their RIT Mathematics scores across both testing intervals, but had a decrease in their RIT Reading score improvement during both the fall and the winter testing sessions. Data shows that this group of students had an additional 2.91-point increase in their RIT Mathematics scores across the two fall testing sessions and an additional 3.00-point increase in the winter. Conversely, this same group experienced a decrease of 1.70 points in their RIT Reading score improvement over the fall testing intervals and a decrease of 0.35 points across winter testing sessions. Non-low socioeconomic status students (23 total) had varying results when examining both RIT Mathematics and RIT Reading scores. These students experienced a decrease in their RIT Mathematics scores improvement of 1.78 points when comparing data across the fall testing intervals, but gained an additional 2.61 points on the same test across the winter testing sessions. The improvement in RIT

Reading scores decreased across both testing intervals, with a 1.22-point decrease between fall testing sessions and a 4.40-point decrease in the winter.

When examining the responses to questions about the benefits of participation in the summer program (Question 8 and Question 12) and whether or not families would have their child participate in a summer program in future years (Question 13), there were positive reactions to the implementation of the program. 90.6% of families felt that their child benefitted from participation in the program. Additionally, 46 out of 53 families that responded to Question 12 (86.8%) indicated that they felt that their child was better prepared to enter the next grade level in the 2021-2022 school year due to their participation in the program. Finally, 90.6% of families (48 total) that submitted a response to Question 13 stated that they would have their child participate in a summer program if offered in subsequent years.

Summary

The data collected for this action research study will be used to determine what changes, if any, should be made to the summer learning program that is offered at the elementary level. Quantitative data in the form of NWEA Measure of Academic Progress (MAP) benchmark assessment results in Reading and Mathematics allowed the researcher to measure the impact that participation in a summer remediation program had on the academic growth of elementary students, specifically in grades 2-6. Additional analysis of specific subgroups of students based on specific parameters (special education services and socioeconomic status) was also completed. Survey results from both the families of students enrolled in the summer program and the individuals that worked in the summer program provided qualitative data that provided demographic information

and feedback on the experiences of the different groups that participated in the program during the summer of 2021. The findings of this study will provide valuable information that will be used in discussion that will take place regarding planning and preparation for summer programming that is offered within the school district in subsequent years.

Chapter V will provide the additional results, as well as final conclusions and recommendations.

CHAPTER V

Conclusions and Recommendations

There are a number of factors that contribute to whether or not a student experiences a loss in learning. Multiple studies were reviewed as part of this action research project (Alexander et al., 2001; Alexander et al., 2007a; Borman et al., 2005; Burkham et al., 2004; Copper et al., 1996; Downey et al., 2004a; Downey et al., 2004b; Heyns, 1978) to examine the impact that summer programming has on the academic achievement of students, specifically in the areas of Mathematics, English/Language Arts, and Reading. When taking a closer look at specific subgroups of students, those that have been identified as having a disability that requires the creation of an individualized education plan (IEP) experience more regression over the summer months than that of their regular education peers based upon the research that was reviewed (Barnard-Brak & Stevens, 2019; Celano & Neuman, 2008; Kim & Quin, 2013; Slates et al., 2012). While there are opportunities for programming for special education students in the summer through extended school year services (ESY), there are still barriers that exist which limit the eligibility of students to take advantage of these opportunities. Establishing programming for all students, regardless of their academic and/or socioeconomic status, allows children to participate in a multitude of lessons and activities that can provide remediation for those that have experienced a regression in skills, behavior patterns, and/or a lack of progress through the curriculum and, at the same time, offer opportunities for enrichment in an effort to continue to reinforce the academic growth and achievement of the students.

This study was completed to determine what impact the implementation of and participation in a summer learning program has on the academic growth and achievement of elementary students, specifically in grades 2-6. Chapter V will present the conclusions of the study, discuss whether or not the summer program had an impact on each of the subgroups outlined within the research questions, highlight limitations that exist, and provide recommendations for potential future research.

Conclusions

The COVID-19 pandemic and its continued impact on students has forced school districts throughout the country to look at different ways to implement programs and activities that will help reduce or eliminate any learning gaps that exist for student due to the period of school closure that took place at the end of the 2019-2020 school year and the continued fluctuation in schedules during the 2020-2021 school year as a result of students needing to quarantine for periods of time as a result of testing positive and/or exposure to a positive case. Funding through both the American Rescue Plan – Elementary and Secondary Schools Emergency Relief Fund (ARP-ESSER) and the ESSER (ARP-ESSER) 7% Set Aside Consolidated Fund allowed the Mercer Area School District to provide summer programming for both elementary and middle-high school students during the summer of 2021. A total of ten groups of students were established based on grade levels at Mercer Elementary school (Pre-Kindergarten transitioning to Kindergarten, 1st grade transitioning to 2nd grade, etc.). For the purpose of this study, the researcher focused on students that were enrolled in grades 2-6 during the 2020-2021 school year. Quantitative data in the form of NWEA Measure of Academic Progress (MAP) benchmark assessment data in both Mathematics and Reading for a three-year

period (2019-2020, 2020-2021, and 2021-2022) was examined for those students that met the established criteria. Testing intervals for both the fall testing sessions (Fall 2019 to Fall 2020 and Fall 2020 to Fall 2021) and winter testing sessions (Winter 2020 to Winter 2021 and Winter 2021 to Winter 2022) were established in order to determine the average increase or decrease in RIT scores in Mathematics and Reading across each of the established time periods. Additionally, surveys were distributed to the families of the students that participated in the summer program and to the instructors and assistants who worked with these students during the summer of 2021. Demographic information and perceptions of the impact of the program were collected through the use of both multiple-choice and short answer questions within each survey. This data, along with the NWEA MAP Benchmark assessment data in Mathematics and Reading, was analyzed so conclusions could be made regarding the impact of the summer program on student achievement and what changes, if any, should be made when planning for programming that would take place in subsequent years.

Several conclusions can be made based upon the data that was collected and analyzed for this action research project. Elementary students in grades 2-6 who participated in the summer program and students in grades 2-6 that did not participate in the summer program both experienced continued growth through additional improvement in their RIT Mathematics scores, but displayed a reduced improvement in their RIT Reading scores across both testing intervals. Regular education students who participated in the summer program experienced additional gains in both Mathematics and Reading while special education students had a decrease in their RIT scores for both subjects. Finally, students identified as low-socioeconomic status who participated in the summer

program experienced a gain in their RIT Mathematics scores but had a decrease in their improvement in Reading across both testing intervals. Conversely, non-low socioeconomic status students that participated in the summer program had varying results in their RIT score improvement in Mathematics based on the testing interval, but had a decrease in improvement when examining their RIT Reading scores.

Research Question 1

The first research question of this study asked, “What is the rate of academic growth of students that participate in an elementary summer remediation program (grades 2-6)?” NWEA Measure of Academic Progress (MAP) benchmark assessment data in Mathematics and Reading was examined for a total of 273 students that met the established criteria for this study. Of these 273 students, 46 participated in the summer program in the summer of 2021 and 227 chose not to take part in the program that was offered at the elementary school. When examining the improvement in RIT scores in Mathematics both groups of students continued to show increases across both sets of testing intervals. Students who did not participate in the summer program had a larger increase in their RIT Mathematics scores when comparing fall testing intervals (+5.24-point increase versus +0.57-point increase) while students that participated in the summer program saw greater improvement when comparing RIT score changes over the winter testing sessions (+2.80-point gain versus +1.89-point gain). Conversely, there were decreases in the improvement in the RIT Reading scores of both groups of students. Students who did not participate in the summer program (227 total) experienced a 1.55-point decrease (fall testing intervals) and 2.11-point decrease (winter testing intervals). The students who did participate in the summer program (46 total)

experienced a 1.46-point decrease in their improvement over the fall testing sessions and a 2.37-point decrease across the winter testing sessions.

While additional increases in the RIT Mathematics scores of students who participated in the summer program does reinforce the notion that summer school programs can lessen the decreases in academic achievement that takes place over the summer months (Borman & Dowling, 2006; Cann et al., 2014; Lauer et al., 2006; Tuft & Bachler, 2016), the larger increases in RIT score improvement of students who did not participate in the program (227 total) showed that these elementary students also experienced academic growth over the same timeframe. The students who participated in the summer program (46 total) had a larger increase in their RIT Mathematics scores over the winter testing intervals than that of their counterparts who chose not to take part in the program that was offered in the summer of 2021. One item to consider when comparing increases in RIT scores over the winter testing interval, regardless of content area, is the impact that instruction during the first semester of the school had on the improvement that the students experience between winter testing sessions. The amount of time is the same (sixteen to eighteen week) in each instance, but there is classroom instruction that takes place in both Mathematics and English/Language Arts which could factor into the amount of improvement a student made in his/her RIT score.

The decrease in improvement of RIT Reading scores of both students who participated in the summer program and those that did not participate reinforces research conducted by Patton and Reschly (2013). This study, which examined DIBELS oral reading fluency (ORF) data collected to measure summer learning loss of elementary students, showed that students in second and third grade displayed loss in reading skills

while students in fourth and fifth grade did not have significant difference in their scores when comparing the spring to the fall. When examining the results of the surveys that were completed by the families of students who participated in the program and by the staff members who worked with the students there were conflicting results in regards to English Language Arts and Reading. A majority of the families that responded to the survey (57.7%) indicated that their child needed assistance in Reading and Writing prior to beginning the summer program and 60.4% listed the same areas of concern upon the completion of the program. In contrast, the instructors and assistants who worked with the students during the summer of 2021 reported that they allotted either 31-45 minutes (35.7%) or 46-60 minutes (35.7%) each day for instruction and/or activities in Reading. An additional 20-30 minutes of time spent on instruction and activities in Writing was reported by 85.7% (12 total) of the staff members. Further discussion on the structure and schedule for the daily sessions that take place within the summer program may provide additional opportunities to provide instruction and activities which could lead to increase academic growth of students in both Mathematics and Reading.

Research Question 2

The second research question, “What impact does a summer remediation program have on the academic growth of regular education students vs special education/learning support students at the elementary level (grades 2-6)?”, specifically examined data gathered for those students that have been identified to receive special education services through an individualized education plan (IEP) and those students that participate in a regular education setting throughout the school day. Of the forty-six students that participated in the summer program in the summer of 2021, twenty-six were identified as

special education students and twenty were regular education students. Regular education students experienced gains in both their RIT Mathematics scores and RIT Reading scores across both testing intervals. Data show that this group of students had a gain of an additional 2.05 points in the fall and an additional 5.10 points between winter sessions. Similarly, these same students experienced continue increases across both the fall testing session (+1.25 points) and winter testing sessions (+1.50 points) when examining their RIT Reading score improvement. In comparison, special education students who participated in the summer program (26 total) had varying results when reviewing their RIT score improvements in both Mathematics and Reading. These students had a decrease across the fall testing sessions (-0.58 points), but had a gain in their RIT Mathematics score improvement (+1.03 points) between winter testing sessions. The examination of the RIT Reading score improvement revealed that special education students experienced decreases across both sessions (-3.54-point decrease in the fall and -5.35-point decrease in the winter).

The results complied when comparing the average change in RIT scores in both Mathematics and Reading for special education students who participated in the summer program reinforces previous research discussed within the literature review that states students with disabilities typically experience more regression over the summer break than students within disabilities (Barnard-Brak & Stevens, 2019; Celano & Neuman, 2008; Kim & Quin 2013; Slates et al., 2012). It should be noted that special education students and regular education students who participated within the summer program were not separated into different groups. Students were grouped based on their grade level (i.e. 1st grade transitioning to 2nd grade, 2nd grade transitioning to 3rd grade, etc.) and

worked with the instructors and assistants assigned to each of the classrooms throughout the day. Moving forward, consideration can be made as to whether or not to continue grouping students based on grade levels or if a different criterion should be utilized in an effort to create a structure that will maximize the opportunities for students to experience academic growth through participating in the program.

Research Question 3

The final research question asked, “What impact does a summer remediation program have on the academic growth of low socioeconomic status students vs non-low socioeconomic status students at the elementary level (grades 2-6)?” Students that would be identified as low-socioeconomic status (23 total) experienced gains in their RIT Mathematics scores across both the fall and winter testing intervals, but had a decrease in their RIT Reading score improvement during both sessions. Data shows that this group of students had an additional 2.91-point increase in their RIT Mathematics scores across the two fall testing sessions and an additional 3.00-point increase in the winter. Conversely, this same group experienced a -1.70 point-decrease in their RIT Reading score improvement over the fall testing intervals and a -0.35-point decrease across winter testing sessions. Non-low socioeconomic status students (23 total) had varying results when examining both RIT Mathematics and RIT Reading scores. These students experienced a decrease of -1.78 points in their RIT Mathematics scores when comparing data across the fall testing intervals, but gained an additional 2.71 points when reviewing data from the winter testing sessions. The improvement of low-socioeconomic students in RIT Reading scores decreased across both testing intervals, with a -1.22-point decrease in the fall and a -4.40-point decrease between winter testing sessions.

The increased improvements in RIT scores experienced by the low-socioeconomic status students who participated in the summer program align with “faucet theory” concept that was introduced by Entwisle et al. (1997). The faucet represents the resources that are available for a student to use in his/her learning. As stated within the literature review, there are two faucets systems for students, a school faucet and a home faucet. The school faucet provides the same resources and opportunities for all students, providing a level playing field for learning. Unfortunately, the home faucet is where the differences exist, creating achievement gaps for low socioeconomic status students who do not have access to resources in comparison to their non-low socioeconomic status peers. The establishment of summer program within a school district allows the school faucet to stay on year-around and provide all students, regardless of socioeconomic status, to have access to the resources and staff members who can assist with not only eliminating any gaps in learning that may exist, but also can provide opportunities for enrichment that will allow students to continue to grow academically.

Financial Implications

The Mercer Area School District is fortunate to have funding available to continue to provide summer programming for students at both the elementary and the middle-high school levels for a three-year period (2021-2022 to 2023-2024). The American Rescue Plan – Elementary and Secondary Schools Emergency Relief Fund (ARP-ESSER) had requirements that school districts reserve twenty percent (20%) of the funds that they received as part of this grant to implement evidence-based interventions with their student population to eliminate any learning loss experienced by students due

to the COVID-19 pandemic. This would include after-school programming which would take place during the school year and summer programming which would be available for students in the months of June and July. Additionally, the ESSER (ARP-ESSER) 7% Set Asides Consolidated Fund included monies which were set aside specifically for summer programming during this same three-year period. A breakdown of the proposed budget that was created for the implementation of both summer and after-school programming over the three-year period (2021-2022 to 2023-2024) is included within Appendix A.

Staffing costs make up a significant portion of the budget that has been created for the elementary summer program. During the summer of 2021, a total of ten classrooms were created for the 106 students that were enrolled in the summer program. There was at least one classroom for each grade level (Pre-Kindergarten transitioning to Kindergarten, 1st grade transitioning to 2nd grade, etc.). There were two classrooms each for student transitioning from 1st grade to 2nd grade and 2nd grade to 3rd grade. Each classroom had one instructor that was either a teacher who was currently employed at Mercer Elementary school (6 total) or an individual who had recently graduated from a college/university in the surrounding area (4 total). These recent college graduates had to have obtained their Pennsylvania teaching certification in elementary education (K-6 or PK-4) prior to being assigned as an instructor for the program. Each of these individuals received a \$3,000.00 stipend for working in the program, totaling \$30,000.00. There were 14 college students, ranging from freshmen who completed their first year of college in 2020-2021 to seniors that had just graduated in the spring of 2021, and one instructional aide who worked at the elementary school during the 2020-2021 school year that served as assistants to the classroom instructors during the summer program. There

was at least one assistant in each of the ten classrooms, five classrooms having two assistants each day. The assistants were each paid a stipend of \$1,500.00, accounting for \$22,500.00 within the budget for the summer program.

Four school vans were used to transport students whose families were unable to bring them to the elementary school in the morning or pick them up at the end of the session each day. A total of four drivers were used throughout the summer program and were paid an hourly rate (\$31.50/hour) when they transported students either to or from the elementary school. All drivers worked a total of two hours each day, making \$63.00/day. The total cost for transportation staffing for the summer program totaled \$5,040.00. Additionally, a new school van was placed within the budget for the summer program. This purchase was necessary to meet the increased need for transportation during the summer months as part of the program. Unfortunately, due to supply chain delays that automobile manufacturers experienced as part of the COVID-19 pandemic, the school district did not receive the van until the spring of 2022. The district plans to purchase an additional school van for the 2022-2023 school year due to the increased use of vans throughout the summer of 2021 which are in the current fleet within the school district. This additional purchase will not be accounted for within the grant monies that have been received by the district and, instead, will come out of the general fund budget for the 2022-2023 school year.

The remaining costs associated with the summer program that was established at Mercer Elementary school during the summer of 2021 are associated with supplies and materials for the program. A small portion (\$1,000.00) was earmarked for classroom supplies (crayons, markers, pencils, notebook paper, construction paper, etc.) which

would be used within each classroom. The licensing and subscription for NWEA Measure of Academic Progress (MAP) testing (\$10,000.00) and Edmentum/Study Island software (\$10,900.00) were the other costs associated with supplies and materials. NWEA MAP testing in both Mathematics and Reading was completed with each of the students who were enrolled in the summer program during the last two days that they attended in July. Results for this testing session were not included within this study due to the short period of time that existed between MAP testing that took place at the end of the 2020-2021 school year (mid-late May) and the dates of the testing that took place at the end of the summer program (mid-July). School administrators will need to discuss whether or not NWEA MAP testing in Mathematics and/or Reading will take place during the summer program in subsequent years. If it is determined that testing will be a component of the program, a schedule will need to be developed to allow for the proper timeframe to exist between testing sessions (twelve to sixteen weeks).

Edmentum/Study Island software is an instructional resource that offers lessons and activities that can be utilized by teachers when working with students on specific standards and content in both Mathematics and Reading. One of the unique features that the Edmentum/Study Island program possesses is that the NWEA MAP testing results in both Mathematics and Reading can be uploaded into this platform to create individualized learning paths for each student. This would allow the teacher to develop differentiated activities that the students could complete that would provide both remediation in areas when students are deficient and enrichment in specific content where the student is ready to be introduced to new material. Additionally, a reading program called Reading Eggs is included within Edmentum/Study Island that provides lessons and

activities for students in Kindergarten, first grade, and second grade that assists in the development of various reading skills (decoding, fluency, comprehension, etc.). Eight of the fourteen individuals who responded to the summer program staff survey reported that they used Edmentum/Study Island as one of the resources that they utilized when providing instruction in Mathematics, Reading, and/or Writing, with an additional five individuals stating that they used Reading Eggs when working with students during the program. Because this program is used throughout the school year by elementary teachers across all grade levels, Edmentum/Study Island will continue to be one of the resources that will be made available for the instructors and assistants who work with elementary students in future summer programs.

As stated earlier, the school district has received grant monies that are earmarked for reducing and/or eliminating any learning loss experienced by students due to the COVID-19 pandemic. A total of \$125,440.00 from the American Rescue Plan – Elementary and Secondary Schools Emergency Relief Fund (ARP-ESSER) was spent for programming that was implemented within the Mercer Area School District during the summer of 2021, with \$113,440.00 spent for the elementary program. The ESSER (ARP-ESSER) 7% Set Asides Consolidated Fund has 14% earmarked for summer program (\$32,464.00 total). These monies, along with additional monies available from the ARP-ESSER fund will be used to provide programming during the summer at the elementary and middle-high school during the three-year period (2021-2022 to 2023-2024). Prior to the end of this timeframe, school district administrators will need to determine if programming will be offered in the subsequent years and, if so, where the funding will come from to staff the program at the elementary and/or middle-high school

buildings. Additional grant monies, contributions from local business and industry, fundraising efforts, and/or planning within the school district's general fund budget are all options that will need to be considered should programming be offered to students and their families in the future.

Limitations

There are two limitations that influenced the overall results of this study. The first is the sample size of the students that participated in the summer program that met the criteria that was established for inclusion within this action research project. NWEA Measure of Academic Progress (MAP) Benchmark assessment data in Mathematics and Reading for students in grades kindergarten through sixth grade from a three-year period (2019-2020, 2020-2021, and 2021-2022) represented the quantitative component of this mixed-methods study. A total of 507 students were enrolled in Mercer Elementary School during the 2020-2021 school year, with 352 enrolled in grades 2-6. In order to be eligible for inclusion within the study, subjects had to have NWEA MAP benchmark assessment results for each of the testing sessions that were used within the data collection process (Fall 2019, Fall 2020, Fall 2021 and Winter 2020, Winter 2021, Winter 2022). This reduced the total number of students to 273, with 46 participating in the summer program and 227 not participating in the summer program during the summer of 2021. The 46 students who were subjects of the study account for 43.4% of the total enrollment within the summer program, with an additional 41 students that were either enrolled in Pre-Kindergarten, Kindergarten, and first grade and 19 students that were enrolled in grades 2-6 but did not have the required NWA MAP Benchmark assessment data in either Mathematics and/or Reading to be included. A breakdown of

this small sample size by grade level and other categories (special education status and socioeconomic status) created subgroups of students that were in the single digits or even one student in some instances (regular education students that participated in the summer program in both fifth grade and sixth grade).

The second limitation to consider is the response rate to each of the surveys that were used for this study. Of the 106 students who participated in the summer program, a total of 51 submissions were collected for the family survey in either hard copy form or electronically. While these responses represent 72 students who were enrolled in the summer program (67.9%), only 38 of them were enrolled in grades 2-6 during the 2020-2021 school year (35.8% of total enrollment). Additionally, the number of responses that were provided by the instructors and assistants (56.0%) that participated in the program should also be considered when examining the results of this study. Because the survey was anonymous in nature, the researcher cannot distinguish how many of the fourteen responses were provided by the instructors and how many were provided by the assistants who worked with the students throughout the duration of the summer program.

Recommendations for Future Research

The focus of this study was to determine the impact that the implementation of a summer remediation program had on the academic growth and achievement of elementary students in grades 2-6. The initial plans to provide this type of program during the summer of 2021 were created due to the funding that was available through the American Rescue Plan – Elementary and Secondary Schools Emergency Relief Fund (ARP-ESSER) and the ESSER (ARP-ESSER) 7% Set Asides Consolidated Fund. The parameters for these monies were developed in response to the COVID-19 pandemic and

the period of school closure that was experienced by school district across the country at the end of the 2019-2020 school year. Additionally, schools across the country utilized varying models for instruction throughout the 2020-2021 school year, with an estimation of roughly eighty percent of students participating in either remote instruction or some hybrid model of both in-person and online instruction (Dorn et al., 2020). This combination of school closure and varying learning models implemented over an extended period of time necessitates further research into best practices to calculate the learning loss experienced by students. A multitude of studies and research has been conducted to measure learning loss experienced by students over the summer months when school is not in session and the different programs that are put into place during the summer months to help reduce or eliminate the “summer slide”. The events associated with COVID-19 has created the need for studies to be conducted that focus on the learning loss experienced by students who attend school during a pandemic. Topics to considered for future research should include how to effectively and accurately calculate the amount of loss incurred by students in core content areas (English/Language Arts, Mathematics, Science, and Social Studies), the resources and supports that should be implemented by faculty and staff to reduce or eliminate the loss in basic skills and/or behavior patterns, and the effectiveness of different types of instructional models and assessment strategies that are implemented to remediate any loss in learning and, at the same time, provide opportunities for students to experience enrichment and acceleration.

Another concept to consider for further research is the structure of the school calendar. One of the byproducts of the COVID-19 pandemic was the expanded use of remote learning options for students and the introduction of a hybrid model of instruction,

with students spending a portion of time in the school building receiving in-person instruction and a portion of time spent at home learning virtually. These different options for instruction were used during both the 2020-2021 and 2021-2022 school years throughout school districts across the country. Because these changes continued over multiple years, a discussion regarding how we structure the school calendar would be the next logical step. The school calendar that is used by most districts today (9 months a year, 180 days, 5 days a week, 6.5 to 7.5 hours per day) became the standard in the 1960s (Silva, 2007). Transitioning to a year-around calendar with small breaks (3-4 weeks) between each marking period would reduce the amount of time that students are not receiving direct instruction. The time during the small breaks that take place throughout the school year could be used to provide remediation sessions that are focused on specific skills and/or concepts that the students struggled with in the previous marking period, rather than waiting until the summer months to address multiple issues that have compounded over the entire school year. Additionally, enrichment activities and opportunities could also be offered during these small breaks for students who are looking to accelerate through the curriculum.

While there are many potential benefits to a modified school calendar, the additional research that would be conducted would also need to examine the various obstacles and opponents that would exist with this potential change. The financial impact that a modified school calendar would have on both the school district and the surrounding communities would be one of the topics that would be in the forefront for the different stakeholder groups that would be involved in this type of decision. Additionally, schedules that currently exist for interscholastic athletics at the middle-high

school level and community leagues that offer opportunities for elementary age students would have to be examined to determine what adjustments, if any, would need to be made to accommodate this change in the academic school year. Finally, timelines that have been established by the Pennsylvania Department of Education for state testing, the submission of reporting, and other components associated with the day-to-day operations of schools would have to be reviewed as well.

Further research into the summer program that has been established at Mercer Elementary school would be the last area that the researcher would consider for future investigation based on this study. Additional analysis of NWEA Measure of Academic Progress (MAP) Benchmark assessment data in both Mathematics and Reading for students that participated in the summer program during the summer of 2021 and new data collection for those students that participated in programming offered during the summer of 2022 will help continue to provide information which can be used during the planning that will take place in subsequent years. Changes to the screening process for identifying students to participate in additional programs offered by the district (after-school and/or summer), how students are grouped to participate in additional programming, and the lessons and activities that are provided to the students are all areas that could be impacted by the continued collection and analysis of student data.

Summary

The purpose of this action research project was to determine whether or not the implementation of and participation in a summer learning program had an impact on the academic growth and achievement of elementary students, specifically in grades 2-6. Results from this mixed-methods study presented the following conclusions:

- Participation in the summer program did not result in an additional increase in NWEA Measure of Academic Progress (MAP) RIT score improvement in Mathematics in comparison to the students that did not participate in the program.
- Students that participated in the summer program and students that did not participate in the summer program both experienced a decrease in their RIT Reading score improvement over both the fall and winter testing intervals.
- Regular education students that participated in the summer program experienced additional increases in their RIT Mathematics and RIT Reading scores.
- Special education students that participated in the summer program did not have additional improvement in their RIT Reading scores across both testing intervals, but did show improvement in their RIT Mathematics scores across one of the two testing intervals (winter).
- Low-socioeconomic status students that participated in the summer program experienced additional improvement in their RIT Mathematics scores, but had decreased improvement when examining RIT Reading scores across both testing intervals.
- Non-low socioeconomic status students that participated in the summer program did not have additional improvement in their RIT Reading scores across both testing intervals, but did show improvement in their RIT Mathematics scores across one of the two testing intervals (winter).

This study provided an opportunity for the researcher to collect data after the first year of a summer learning program that was offered to elementary students in the summer of 2021. It is clear that additional analysis and research should be conducted to

determine what changes, if any, should be made to the protocols and procedures that were established for the summer program. Additionally, the continued collection of data will provide the information necessary for school district personnel to implement best practices in an effort to create an environment that fosters the continue academic growth and achievement of all students.

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APPENDICES

Appendix A**Budget Overview – Elementary Summer Program & After-School Program**

Year 1 (2021-2022) ACCOUNT	DESCRIPTION	BUDGET
10-1100-100-000-10-000-000-000-0000	Stipends - Elementary Teachers (Summer 2021) (10 teachers @ \$3,000.00 each)	\$30,000.00
10-1100-100-000-10-000-000-000-0000	Stipends - Elementary Assistants (Summer 2021) (15 individuals @ \$1,500.00 each)	\$22,500.00
10-1100-100-000-10-000-000-000-0000	Stipends - Elementary Teachers (After-School 2021-2022) (6 teachers @ \$4,536.00 each)	\$27,216.00
10-2700-100-000-10-000-000-000-0000	Transportation - Summer Program (Summer 2021) (4 drivers @ \$1,260.00 each)	\$5,040.00
10-2700-100-000-10-000-000-000-0000	Transportation - After-School Program (2021-2022) (4 drivers @ \$3,402.00 each)	\$13,608.00
10-1100-300-000-10-000-000-000-0000	NWEA Licensing & Subscription	\$10,000.00
10-1100-300-000-10-000-000-000-0000	Edmentum/Study Island Program Subscription	\$10,900.00
10-1100-600-000-10-000-000-000-0000	Classroom Supplies - Elementary Summer Program	\$1,000.00
10-1100-600-000-10-000-000-000-0000	Classroom Supplies - Elementary After-School Program	\$1,000.00
10-2700-700-000-10-000-000-000-0000	Transportation - New School Van	\$34,000.00
TOTAL (2021-2022)		\$155,264.00

Year 2 (2022-2023) ACCOUNT	DESCRIPTION	BUDGET
10-1100-100-000-10-000-000-000-0000	Stipends - Elementary Teachers (Summer 2022) (10 teachers @ \$3,000.00 each)	\$30,000.00
10-1100-100-000-10-000-000-000-0000	Stipends - Elementary Assistants (Summer 2022) (15 individuals @ \$1,500.00 each)	\$22,500.00
10-1100-100-000-10-000-000-000-0000	Stipends - Elementary Teachers (After-School 2022-2023) (6 teachers @ \$4,536.00 each)	\$27,216.00
10-2700-100-000-10-000-000-000-0000	Transportation - Summer Program (Summer 2022) (4 drivers @ \$1,260.00 each)	\$5,040.00
10-2700-100-000-10-000-000-000-0000	Transportation - After-School Program (2022-2023) (4 drivers @ \$3,402.00 each)	\$13,608.00
10-1100-300-000-10-000-000-000-0000	NWEA Licensing & Subscription	\$10,000.00
10-1100-300-000-10-000-000-000-0000	Edmentum/Study Island Program Subscription	\$10,900.00
10-1100-600-000-10-000-000-000-0000	Classroom Supplies - Elementary Summer Program	\$1,000.00
10-1100-600-000-10-000-000-000-0000	Classroom Supplies - Elementary After-School Program	\$1,000.00
TOTAL (2022-2023)		\$121,264.00

Year 3 (2024-2024)		
ACCOUNT	DESCRIPTION	BUDGET
10-1100-100-000-10-000-000-000-0000	Stipends - Elementary Teachers (Summer 2023) (10 teachers @ \$3,000.00 each)	\$30,000.00
10-1100-100-000-10-000-000-000-0000	Stipends - Elementary Assistants (Summer 2023) (15 individuals @ \$1,500.00 each)	\$22,500.00
10-1100-100-000-10-000-000-000-0000	Stipends - Elementary Teachers (After-School 2023-2024) (6 teachers @ \$4,536.00 each)	\$27,216.00
10-2700-100-000-10-000-000-000-0000	Transportation - Summer Program (Summer 2023) (4 drivers @ \$1,260.00 each)	\$5,040.00
10-2700-100-000-10-000-000-000-0000	Transportation - After-School Program (2023-2024) (4 drivers @ \$3,402.00 each)	\$13,608.00
10-1100-300-000-10-000-000-000-0000	NWEA Licensing & Subscription	\$10,000.00
10-1100-300-000-10-000-000-000-0000	Edmentum/Study Island Program Subscription	\$10,900.00
10-1100-600-000-10-000-000-000-0000	Classroom Supplies - Elementary Summer Program	\$1,000.00
10-1100-600-000-10-000-000-000-0000	Classroom Supplies - Elementary After-School Program	\$1,000.00
TOTAL (2023-2024)		\$121,264.00
TOTAL COST FOR PROGRAMMING		\$397,792.00

Appendix B

Mercer Elementary School Summer Program Parent/Family Survey

The purpose of this survey is to gather additional information regarding the remediation program that was implemented at Mercer Elementary School during the summer of 2021. The responses provided will be used in a doctoral research study that examines the effectiveness of a summer remediation program on the academic growth of elementary students. Additionally, responses to each of the questions within the survey will be utilized to better understand what methodology, strategies, & resources best fit the learning styles of elementary students within the district. The information gathered within this study will also assist in the development and implementation of both summer and after-school programs that are better able to meet the needs of all of our students in future years.

Mr. Michael G. Piddington, Assistant Superintendent of the Mercer Area School District, will be collecting and analyzing all of the data associated with this research project. In addition to the parent/family survey results, staff members and college student that worked in the summer remediation program will also be surveyed to gather information from their experience with the students in the program. Finally, NWEA MAP Growth testing data for students in grades 2-6 for a three (3) year period (2019-2020, 2020-2021, & 2021-2022) will be examined to determine the effective of the program on the academic growth of students that did participate in the program and those that did not choose to enroll in the program. All data that is collected will be reviewed in a group format and no individual students, families, staff members, and/or college students will be identified within the study.

Participation by all individuals in this research project is voluntary. All responses to survey questions are anonymous and will not be used to identify individual students and/or families. Any individual that participates and wishes to have their responses removed from the study may do so at any time. If you feel you have been coerced into participation, please inform the faculty advisor from California University of Pennsylvania.

Once you have completed the survey, please return it in the self-addressed stamped envelope that was included with this letter.

If you have questions or concerns regarding participation in this research study please contact Mr. Michael G. Piddington, Assistant Superintendent, in the central office (724-662-5100 ex. 27) or via email (mpiddington@mercerc.k12.pa.us).

If you would like to speak to someone other than the researcher, please contact Dr. Mary Wolf, Assistant Professor at California University of Pennsylvania, via phone (724-938-4140) or email (wolf@calu.edu).

Sincerely,

Michael G. Piddington
Assistant Superintendent
Mercer Area School District

1. How many children from your family attended the remediation program that was offered at Mercer Elementary School during the summer of 2021?
 - 1
 - 2
 - 3
 - 4
 - 5
 - 6
 - 7
 - 8

2. What grade level was your child(ren) enrolled in during the 2020-2021 school year?
(Check all that apply)
 - Pre-Kindergarten/Preschool
 - Kindergarten
 - 1st Grade
 - 2nd Grade
 - 3rd Grade
 - 4th Grade
 - 5th Grade
 - 6th Grade

3. How many days did your child(ren) attend the remediation program at Mercer Elementary School during the summer of 2021?
 - 1-5 days
 - 6-10 days
 - 11-15 days
 - 16-20 days

4. Has your child(ren) previously been identified as needing specifically designed instruction and receives special education services?
 - YES
 - NO

5. If the answer to question #4 is "YES", please indicate what area(s) your child(ren) receive special education services. (Check all that apply)
 - English/Language Arts
 - Mathematics
 - Speech/Language Support
 - Blind/Visually Impaired Support
 - Deaf/Hard of Hearing Support
 - Emotional/Behavioral Support
 - Autistic Support
 - Life Skills Support
 - Multiple Disabilities Support
 - Physical Support
 - Limited English Proficiency

6. Does your child(ren) qualify for Free or Reduced Lunch?
- Free Lunch
 - Reduced Lunch
 - Neither
7. What area(s) did you feel that your child(ren) needed the most assistance prior to the start of the remediation program in the summer of 2021? (Check all that apply)
- Mathematics
 - Reading
 - Writing
 - Social Skills
 - Other
8. Do you feel that you child(ren) benefited from attending and participating in the remediation program during the summer of 2021?
- YES
 - NO
 - Unsure at this time
9. If you answered "YES" to the Question #8, please describe in your own words how your child(ren) benefited from the summer remediation program.
-
-
-
-
-
-
10. If you answered "NO" to the Question #8, please describe in your own words why you feel that your child(ren) did not benefit from the summer remediation program.
-
-
-
-
-
-
11. What area(s) did you feel that your child(ren) still needed additional assistance in after participating in the remediation program during the summer of 2021? (Check all that apply)
- Mathematics
 - Reading
 - Writing
 - Social Skills
 - Other
12. Do you feel that your child(ren) is/are better prepared to enter the next grade level at the start of the 2021-2022 school year due to their participation in the summer remediation program?
- YES
 - NO
 - Unsure at this time

13. Would you have your child participate in a summer program again in the future if it was offered within the school district?

- YES
- NO
- Unsure at this time

14. What types of activities and/or lessons would you like to see as part of a summer program offered by the school district in the future?

Appendix C

Mercer Elementary School Summer Program Staff Survey

The purpose of this survey is to gather additional information regarding the remediation program that was implemented at Mercer Elementary School during the summer of 2021. The responses provided will be used in a doctoral research study that examines the effectiveness of a summer remediation program on the academic growth of elementary students. Additionally, responses to each of the questions within the survey will be utilized to better understand what methodology, strategies, & resources best fit the learning styles of elementary students within the district. The information gathered within this study will also assist in the development and implementation of both summer and after-school programs that are better able to meet the needs of all of our students in future years.

Mr. Michael G. Piddington, Assistant Superintendent of the Mercer Area School District, will be collecting and analyzing all of the data associated with this research project. In addition to the staff program survey results, families of students that participated in the summer remediation program will also be surveyed to gather information from their experience in the program. Finally, NWEA MAP Growth testing data for students in grades 2-6 for a three (3) year period (2019-2020, 2020-2021, & 2021-2022) will be examined to determine the effective of the program on the academic growth of students that did participate in the program and those that did not choose to enroll in the program. All data will be reviewed in a group format and no individual students, families, staff members, and/or college students will be identified within the study.

Participation by all individuals in this research project is voluntary. All responses to survey questions are anonymous and will not be used to identify individual students and/or families. Any individual that participates and wishes to have their responses removed from the study may do so at any time. If you feel you have been coerced into participation, please inform the faculty advisor from California University of Pennsylvania.

Once you have completed the survey, please return it in the self-addressed stamped envelope that was included with this letter.

If you have questions or concerns regarding participation in this research study please contact Mr. Michael G. Piddington, Assistant Superintendent, in the central office (724-662-5100 ex. 27) or via email (mpiddington@mercerc.k12.pa.us).

If you would like to speak to someone other than the researcher, please contact Dr. Mary Wolf, Assistant Professor at California University of Pennsylvania, via phone (724-938-4140) or email (wolf@calu.edu).

Sincerely,

Michael G. Piddington
Assistant Superintendent
Mercer Area School District

1. What grade level did you work with during the remediation program in the summer of 2021?
 - Pre-Kindergarten
 - Kindergarten
 - 1st Grade
 - 2nd Grade
 - 3rd Grade
 - 4th Grade
 - 5th Grade
 - 6th Grade

2. How many students were enrolled in the group that you worked with during the remediation program in the summer of 2021?
 - 5-9 students
 - 10-15 students
 - 16-20 students
 - 21-25 students
 - 26-30 students

3. How much time did you spend on instruction/remediation in Mathematics each day during the remediation program in the summer of 2021?
 - 20-30 minutes
 - 31-45 minutes
 - 46-60 minutes
 - 61-75 minutes
 - 76-90 minutes
 - more than 90 minutes

4. How much time did you spend on instruction/remediation in Reading each day during the remediation program in the summer of 2021?
 - 20-30 minutes
 - 31-45 minutes
 - 46-60 minutes
 - 61-75 minutes
 - 76-90 minutes
 - more than 90 minutes

5. How much time did you spend on instruction/remediation in Writing each day during the remediation program in the summer of 2021?
 - 20-30 minutes
 - 31-45 minutes
 - 46-60 minutes
 - 61-75 minutes
 - 76-90 minutes
 - more than 90 minutes

6. How much time did you spend on instruction/remediation in Social Skills each day during the remediation program in the summer of 2021?

- 20-30 minutes
- 31-45 minutes
- 46-60 minutes
- 61-75 minutes
- 76-90 minutes
- more than 90 minutes

7. What other content areas did you dedicate time for instruction/remediation during the remediation program in the summer of 2021?

8. If you listed any additional content area(s) in Question #7 please list the amount of time that you dedicated for instruction/remediation each day during the remediation program in the summer of 2021.

9. Did you use Edmentum/Study Island with the students in your classroom during the remediation program in the summer of 2021?

- YES
- NO

10. If you answered "YES" to Question #9, which content area(s) did you use Edmentum/Study Island as a resource for remediation/instruction? (check all that apply)

- Mathematics
- Reading
- Writing
- Other

11. If you answered "NO" to Question #9, what other online resource(s)/program(s) did you use when working with the students in your classroom during the remediation program in the summer of 2021?

12. Did you witness academic growth/improvement in the students that you worked with in the remediation program during the summer of 2021?

- All students in the classroom experienced academic growth
- A majority of the students in the classroom experienced academic growth (76-99%)
- Most of the students in the classroom experienced academic growth (50-75%)
- Some of the students in the classroom experienced academic growth (26-50%)
- A few of the students in the classroom experienced academic growth (10-25%)
- None of the students in the classroom experienced academic growth

13. If you answered "YES" to Question #12, what factor(s) do you believe contributed to the academic growth of the students?

14. If you answered "NO" to Question #12, what barrier(s) do you believe limited the academic growth of the students during the summer program?

15. What diagnostic tool(s)/resource(s) did you use to measure the academic growth of the students in your classroom during the summer remediation program?

Appendix D**Institutional Review Board (IRB) Approval Confirmation**

**Institutional Review Board
California University of Pennsylvania
Morgan Hall, 310
250 University Avenue
California, PA 15419
instreviewboard@calu.edu
Melissa Sovak, Ph.D.**

Dear Michael,

Please consider this email as official notification that your proposal titled "The Effectiveness of a Summer Remediation Program on the Academic Growth of Elementary Students" (Proposal #20-046) has been approved by the California University of Pennsylvania Institutional Review Board as submitted.

The effective date of approval is 8/31/21 and the expiration date is 8/30/22. These dates must appear on the consent form.

Please note that Federal Policy requires that you notify the IRB promptly regarding any of the following:

- (1) Any additions or changes in procedures you might wish for your study (additions or changes must be approved by the IRB before they are implemented)
- (2) Any events that affect the safety or well-being of subjects
- (3) Any modifications of your study or other responses that are necessitated by any events reported in (2).
- (4) To continue your research beyond the approval expiration date of 8/12/22 you must file additional information to be considered for continuing review. Please contact instreviewboard@calu.edu

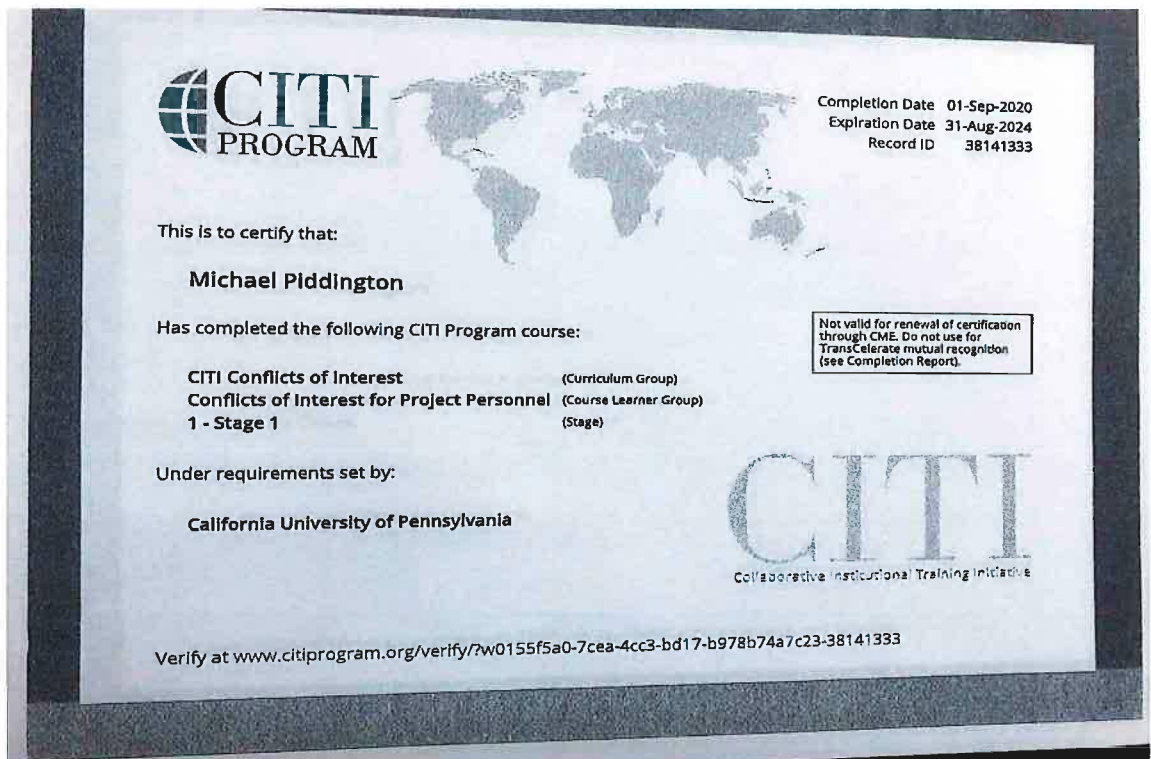
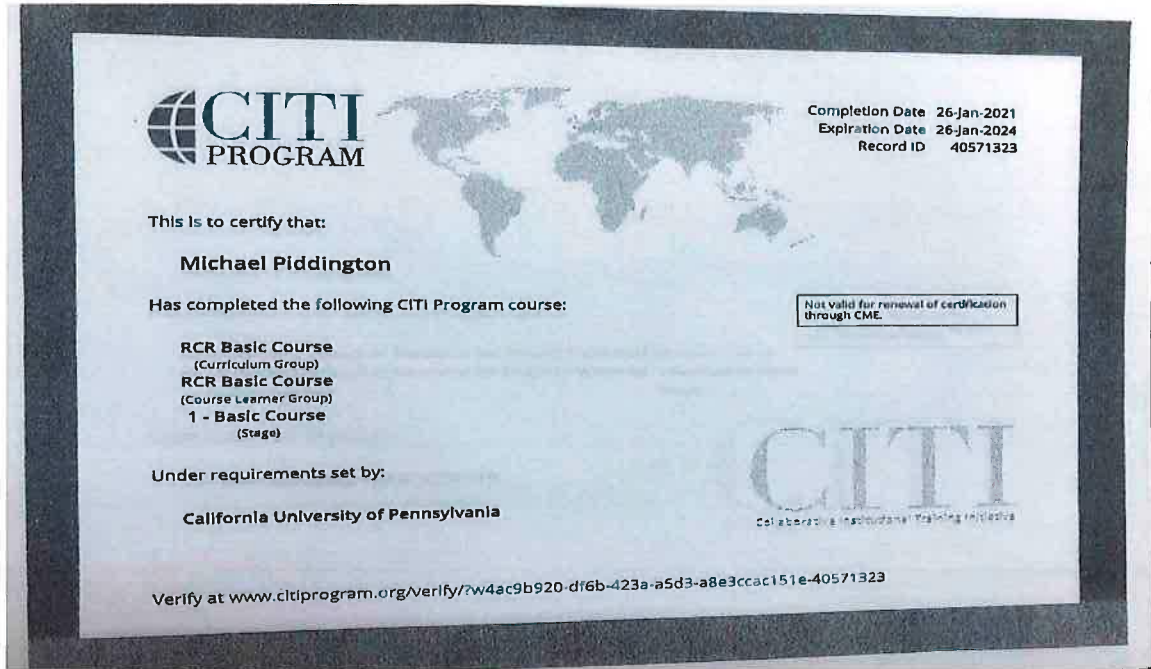
Please notify the Board when data collection is complete.



Regards,

Melissa Sovak, PhD.
Chair, Institutional Review Board

Appendix E

Collaborative Institutional Training Initiative (CITI) Certifications



Completion Date 02-Sep-2020
Expiration Date N/A
Record ID 38141332

This is to certify that:

Michael Piddington


Has completed the following CITI Program course:

Responsible Conduct of Research for Project Personnel (Curriculum Group)
Responsible Conduct of Research for Project Personnel (Course Learner Group)
1 - RCR Refresher (Stage)

Not valid for renewal of certification through CME. Do not use for TransCelerate mutual recognition (see Completion Report).



Under requirements set by:

California University of Pennsylvania



Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w0d5e45b0-f247-43f6-892e-01608633aac4-38141332

Completion Date 01-Sep-2020
Expiration Date 01-Sep-2023
Record ID 38141334

This is to certify that:

Michael Piddington


Has completed the following CITI Program course:

All Researchers Applying for IRB Approval (Curriculum Group)
All Researchers Applying for IRB Approval (Course Learner Group)
1 - Basic Course (Stage)

Not valid for renewal of certification through CME. Do not use for TransCelerate mutual recognition (see Completion Report).

Under requirements set by:

California University of Pennsylvania



Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w75626dff-54ee-4265-ad5c-aeab7eddc0fd-38141334