

THE IMPACT OF A SUMMER READING INTERVENTION ON ACADEMIC
ACHIEVEMENT

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Jonathan T. Walsh
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Examining Committee Members:

Joseph P. DuCette, Advisory Chair, Psychological Studies in Education
Steven J. Gross, Policy, Organizational, and Leadership Studies
James Earl Davis, Policy, Organizational, and Leadership Studies
Frank Farley, External Member, Psychological Studies in Education

ABSTRACT

With so many students attending summer programs, it is remarkable that there is little research available aiming to investigate achievement differences in participants versus non-participants. This study examined the place of a summer program within a school district budget and curriculum. The study was designed to better understand the achievement gains, or lack thereof, of students who were invited to a summer program in one Northeast school district. The research design attempted to provide a better understanding of how the summer program impacted reading achievement of students who attended the program. The study compared the reading achievement of students who attended the summer program to the reading achievement of students who were invited to the summer program, but did not attend.

The results of the study revealed there was a statistical difference in the test scores of the students who attended the summer reading program compared to those that did not attend. That statistical difference showed that students who attended the program scored higher on the formative reading assessments than did students who did not attend the program during the October assessment. Also, it was discovered that students who attended the summer reading program maintained their difference in reading achievement level over the course of the school year, in between October and May. It was concluded that attending the summer reading program set forth a difference in reading achievement that was maintained throughout the school.

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CHAPTER 1

INTRODUCTION

Background of the Problem

There is an annual pattern of achievement growth where student learning trajectories are largely positive during the academic year. Yet, these trajectories flatten or even become negative during the summer months (Alexander, Entwisle, & Olson, 2007). This commonly observed slide in learning, that takes place over the summer, challenges school districts that aim to reduce achievement gaps. This slide in learning is more pronounced among students of color as well as students from low socioeconomic standing (Entwisle & Alexander, 1992). Moreover, the summer learning slide must be addressed by school districts charged with demonstrating adequate yearly progress measures determined by state and federal mandates. In an attempt to address the summer achievement slide, some school districts have implemented summer programs designed for students who are most at-risk of losing ground over the summer (Stevens & Zvoch, 2013).

Statement of the Problem

School districts across the country have adopted targeted summer programs in an attempt to focus limited resources on students who are most in need of supplemental instruction (Stevens & Zvoch, 2013). Yet, few evaluators of summer programming have

been able to clearly separate instructional effects from distinct background characteristics like gender or race of summer school participants and their peers. Also, there has been little research conducted on how students who attend summer programs achieve reading comprehension gains compared to their non-participating peers who were also identified as eligible candidates for the same summer program. Thus, there is a need for high quality research that compares two very specific groups of students. The first group of students are those who are identified as eligible candidates to participate in a summer program and actually attend the program. These students need to be compared to a group of students who are also identified as eligible candidates to attend a summer program but do not participate in the program. The core purpose of the present study was to compare these two groups of students. In an attempt to narrow the focus of the study, and use data provided by the XYZ school district that was both valid and reliable, reading achievement gains were the only variable assessed.

Research Questions

The research question that guided this study is as follows:

- Does the summer program produce significant reading achievement gains in eligible participants, and are these gains significantly different from the gains in eligible non-participants?

Importance of the Study

In an era of tightening budgets and slashing programs, it is remarkable that school districts are actually allocating more resources towards summer programs (Stevens & Zvoch, 2011). Summer programs are receiving a larger slice of the budget because

administrators view summer programs as a practical option to address increasingly stringent state and federal achievement mandates. State and federal Title I monies are being made available to help offset specific summer programming costs (Stevens & Zvoch, 2013). Therefore, there are more students in summer programs than ever before. A recent estimate indicates that nearly 14.3 million school age children, or 25% of the school age population, attended a summer program during the summer of 2008 (Alliance, 2010). There were higher participation rates among ethnic-minority and low-income students (Alliance, 2010). This increase is because some large urban school districts have implemented mandatory summer programs for low-achieving students (Roderick, Nagaoka, & Allensworth, 2005). High participation rates in summer programs validate the importance of the study presented in this document.

Purpose of the Study

With so many students attending summer programs, it is remarkable that there is little research available aiming to investigate achievement differences in participants versus non-participants. The aim of this study was to either validate the place of a summer program within a school district budget and curriculum, or to provide a critique of a summer program and offer suggestions of how to make it more effective. The current study was designed to answer the research question above in order to better understand the achievement gains, or lack thereof, of students who were invited to a summer program in one Northeast school district. The district will be referred to as XYZ. The research design attempted to provide a better understanding of how this summer program impacts reading achievement of students who attend the program by comparing the

reading achievement of students who attended the summer program to the reading achievement of students who were invited to the summer program, but did not attend.

Theoretical Framework

There are two commonly held beliefs that attempt to explain why poor children do worse academically than children from middle-class and wealthy families (Alexander, Entwisle, & Olson, 2001). The first belief is that there are differences in the schools that poor children attend (Wiggan, 2007). The second belief is that there are differences in the homes where poor children reside (Entwisle, Alexander, & Olson, 2001). Entwisle, Alexander, and Olson (2001) argue that higher family income allows expenditures on books, games, computers, and other resources that could promote learning in the summer like high speed internet connection. Public policy has traditionally focused on addressing the differences in the schools that poor children attend. Thus, school reform efforts have centered around the perceived differences in the schools in lower SES neighborhoods and how these differences may have a negative effect on the academic achievement of the children who live there. School reform efforts include longer school days, longer school years, and an increased emphasis on standardized testing. In the end, public policy and school reform efforts have led to a widespread impression that poor children are shortchanged by the schools that they attend. Yet, poor and middle-class students make similar achievement gains during the school year. It is not until the summer months that achievement discrepancies show up between poor and middle-class children (Alexander, Entwisle, & Olson, 2007). Over the course of the summer months, middle class children continue to make achievement gains. On the other hand, poor children lose ground.

School districts have tried to remedy this summer-slide by lower income children through implementing summer programs (Entwisle & Alexander, 1992).

The principal theory district-level administrators use to support costly implementation of summer programs, while offering an explanation for seasonal patterns of learning, is the faucet theory (Entwisle, Alexander, & Olson, 2001). The faucet theory states that opportunities to make learning gains and have access to educational resources are turned on during the traditional school year (Cooper, Charlton, Valentine, & Muhlenbruck, 2000). This faucet of educational resources is turned on for all students regardless of race, ethnicity or socioeconomic status. Therefore, learning gains made during the traditional school year are nearly the same for students of different race, ethnicity and socioeconomic status (Entwisle, Alexander, & Olson, 1997). On the other hand, when school is out for the summer, and the learning faucet is turned off, there are differences in educational opportunities based on race, ethnicity, and socioeconomic status. Therefore, learning slows for students of relative advantage and learning declines for students from disadvantaged backgrounds (Stevens & Zvoch, 2011). The faucet theory helps make sense of seasonal patterns of learning because it describes that when school was in session, the resource faucet was turned on for all children. Therefore, all children gained equally. Yet, when school was not in session, the school resource faucet was turned off. Therefore, in the summers, poor families could not make up for the resources the school had been providing. Therefore, the poor children's achievement flat-lined. In some cases, achievement among poor children even fell back. Yet, middle-class and upper-class families could make up for school's resources to a considerable extent so that children from these families showed achievement growth during the

summer months, even though this growth was at a slower pace (Entwisle, Alexander, & Olson, 2001). Based on that decline, a need has been identified by school districts to provide summer interventions for students who are at a disadvantage.

One body of research that supports the faucet theory, and stands out during the forthcoming review of the literature, originates from a sample of students taken from Baltimore Public schools where an extensive summer program was in place. In short, findings based on the studies conducted on students from Baltimore Public Schools reveal that there is an achievement gap between students of relative advantage and disadvantage. This gap can be blamed on the cumulative effect of annual summer learning differences (Alexander, Entwisle, & Olson, 2001). In other words, this group of students' achievement gap can be attributed to the "learning faucet" of resources being turned off during summer months. Thus, students of low SES were losing ground during the summer, over and over again. More upsetting is the fact that these differences may have an effect on whether a student completed high school or attended a 4-year college (Alexander, Entwisle, & Olson, 2007).

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction to the Review

The beginning of this literature review includes a brief history of summer school as well as the purposes of summer school. These subsections were included to give the reader a historical context of summer school to help the reader better understand the study. It will give perspective to the original impetus of summer school. Also, the historical context of summer school will set the stage for the importance of quality research on a specific summer program. Moreover, these two subsections help the reader develop a better understanding of how American public schools came to embrace the current school calendar and subsequent summer learning opportunities. This understanding is important to the study because it gives framework to the current school calendar and the investment of valuable resources in summer school interventions.

The second part of this literature review is organized around two common themes that are related to summer learning. The first issue is the decrease in academic skills over the summer, with special attention paid to the fact that this is mostly true for low SES students and students of color in reading achievement. Articles presented in this section also include ways that school districts and researchers have attempted to deal with this decrease in academic skills over the summer months. The second issue is the limitations of the summer school programs that exist and the limitations of research for evaluating these summer programs. Research presented in this section include the problem that non-

attendance creates with program effectiveness and research. More specifically, the problem of non-attendance amongst students who are identified as eligible candidates for summer programming, invited to a summer program, and do not attend the summer program.

A Historical Context of Summer School

In order to fully understand the two issues surrounding present-day summer school research, it is first important to appreciate how summer school originated. The historical context of summer school is essential to the study because it will better explain how the current climate of summer school came to be. Currently, there are massive amounts of time, resources, and money devoted to summer school programs taking place after the traditional school year is over. Readers of the study may have a vested interest in summer school because they are charged with making decisions about implementing new summer school programs, allocating resources toward existing summer school programs, or determining the criteria used to identify students who would benefit from summer school programs. Therefore, it is important for readers to understand the historical context of summer school programs and how funding and the organization of summer school came into existence.

Summer school originally came into existence because of traditional school calendars. This is important because it explains the motivation behind the first summer school programs. It gives context to the study because there wouldn't be summer school programs today if all school calendars were still 12 months long. School calendars were initially created to fit the needs of particular communities (Cooper, Nye, Charlton,

Lindsay, & Greathouse, 1996). Students in rural areas, where farming was common, attended school for six months in order to be able to plant and harvest crops accordingly. On the other hand, students in urban areas, who were not working on farms, attended school 11 or 12 months out of the year. Yet, by the early 1900's, the movement to implement standardized curricula and a standardized school calendar evened the school-day playing field. Furthermore, the current school calendar, where schools are closed during the three summer months, was created during a time when 85% of Americans were involved in agriculture. At the present time, approximately 3% of Americans are involved in agriculture (Cooper, Nye, Charlton, Lindsay, & Greathouse, 1996). In the end, the American school calendar, in most cases, looks similar. School is not in session during the months of July and August. During those months, there were many different summer school programs that were implemented. As fewer students were involved in agriculture, summer school programs became a vehicle to provide recreational activities for students who were out of school (Cooper, Charlton, Valentine, & Muhlenbruck, 2000). This historical context of how the current school calendar came to be is important because it shows why the original summer school programs were funded. The original summer school programs were designed to provide recreational activities. This context helps the reader better understand the current platform for the summer school programs of today. Also, the historical context of the school calendar was included in this review of the literature because it can better explain how funding and organization for summer school came into existence after fewer students were involved in agricultural endeavors and more summer school programs were created to address this shift in the student population.

In the 1950's, educators realized that summer school could serve a more worthwhile purpose than simply providing recreational activities. Therefore, educators began to use summer school as an opportunity to remediate learning and prevent learning deficits. One area that the new summer school programs focused on was improving reading achievement. Hence, up until 1950, there were very little data collected on the effectiveness of summer school programs on increasing reading achievement because the purpose was not academic, it was recreational. After the change in purpose for summer school, data began to emerge about the effectiveness of these summer school programs on increasing reading achievement. This section of the historical context of summer school is important because it frames how the purpose of summer school programs became more focused on academic achievement. It explains how research on summer school programs began to emerge.

The first type of summer school program that evolved in the wake of this fundamental shift in the purpose for summer school is programming that meets competency requirements for graduation. Many states, like Pennsylvania, set minimum competency standards for obtaining a high school diploma. Not all students meet these competency standards during the traditional school year. If a student doesn't meet the standards during the traditional school year, a summer school program can provide the instruction needed to meet the competency standard so that a student may graduate. This purpose for summer school is important because it provides a context to the statistics showing the magnitude of students attending summer school programs (Cooper, Charlton, Valentine, & Muhlenbruck, 2000). In other words, there are a lot of students attending summer school because it is their last chance to receive a high school diploma.

High schools created summer school programs to meet one specific population of students. This impetus paved the way for summer school programming in lower grades.

Next, summer school programs can serve the purpose of helping students who fail a specific course during the regular school year. During summer school, these students can retake the course to gain the credits required for promotion to the next grade (Cooper, Charlton, Valentine, & Muhlenbruck, 2000). In the elementary grades, related remedial activity occurs when students are requested to take summer instruction in order to avoid being retained at the same grade level during the next school year. For the present study, the focus was on students who were identified and invited to a summer school program in an attempt to improve their reading achievement because of their performance during the traditional school. These students were perceived to be failing because they did not meet competency benchmarks, which were predetermined by the district in the study, during informal formative assessment evaluations.

Finally, another purpose for summer school programs is for districts to provide services in order to maintain compliance with what previous court rulings dictate as mandatory services that extend beyond the traditional school year. Court rulings mandate that school-based and government-financed summer programs be provided for the purpose of academic services that go beyond the traditional school year for certain students with disabilities or certain students who reside in areas of high poverty (Cooper, Charlton, Valentine, & Muhlenbruck, 2000). In 1975, the passage of the Individuals with Disabilities Act (IDEA; Public Law 94-142) made it mandatory for students with disabilities to receive free and appropriate education (FAPE). In 1979, the United States District Court ruled that the Pennsylvania Department of Education had to provide a

program beyond the regular school year for children with disabilities. The ruling was based on the premise that a long summer break leads to regression of skills in students covered by the IDEA. Cooper et al. (2000) cite Public Law 105-17 and the 1997 rules for the reauthorized IDEA (Public Law 105-17) that state "... each public agency shall ensure that extended year services are available to each child with a disability to the extent necessary to ensure that a free and affordable public education, or FAPE, is available to the child (Federal Register, Vol. 62, No. 204, Section, 300.309, 1997)." The rules also stated that the determination of the extent of these services must be made on an individual basis and be provided at no expense to the child's parents.

Likewise, the Elementary and Secondary Education Act of 1965 (ESEA; Public Law 89-10) included funds for programs to meet educational needs identified as national priorities. Title I of the law recognized the special needs of students that live in areas of high poverty concentrations. Title I programs were meant to break the self-perpetuating cycle of poverty through the creation of supplemental educational programs (Cooper, Charlton, Valentine, & Muhlenbruck, 2000). In 1994, ESEA was reauthorized. This reauthorization entitled the Improving America's Schools Act (Public Law 103-382) and continued the Title I emphasis on closing the achievement gap between rich and poor (Cooper, Charlton, Valentine, & Muhlenbruck, 2000). In order to close the achievement gap between rich and poor students, Section 1001(c)(4) mandated resources to be best spent in an attempt to ensure that children from areas of high poverty concentrations have full access to high-quality regular school programs. Furthermore, Section 1001(c)(4) obligated supplemental help through extended time activities. This federal mandate, paired with other legislation created by state and local education agencies, has led to

summer programs for disadvantaged students through the use of Title I monies. This pattern continues under the Every Student Succeeds Act (ESSA). Cooper et al. (2000) describe the goal of these summer programs as preventing and remediating learning deficiencies. The summer school programming that was the basis for this study ran side-by-side with the school district's Title I program that aimed to serve students who came from areas of high poverty. Federal law mandates that students with academic disabilities receive special services that stretch beyond the traditional school year in order to provide a fair and appropriate education. Likewise, the same section of the law mandates that students from areas of high poverty receive similar services in order to break the cycle of poverty. It is in this current climate that resources are funneled toward students who may need services and instruction that stretch beyond the traditional school year.

The final purpose for summer school is directly related to the study because there is a Title I summer program that already takes place within the district. Thus, the school district in the study had to take into account which students had already been identified as eligible candidates for the Title I program. These students were taken out of the pool for invitees to the concurrent summer school program. The same legislation that mandates Title I summer programming funding is important because it explains why there are valuable resources set aside for learning that takes place in the summer, even if not mandated. Federal law mandates that students with academic disabilities receive special services that stretch beyond the traditional school year in order to provide a fair and appropriate education. Likewise, the same section of the law mandates that students from areas of high poverty receive similar services in order to break the cycle of poverty. It is

in this current climate that resources are also funneled toward students who are not legally entitled to special services but may need services and instruction that stretch beyond the traditional school year regardless. If the federal legislation mandates students with disabilities need to receive services that stretch beyond the traditional school year, then school districts are going to respond in two meaningful ways. First, school districts are going to manage resources in a way that adheres to federal mandates. The district in the study was adhering to this federal mandate by providing a Title I summer program. Second, school districts are going to take notice of what federal law deems to be important and make decisions based on these mandates for other students identified as needing intervention. Specifically, stakeholders who are making decisions about funding and organization of district-level summer school programs are aware of federal mandates and practice and act accordingly. In other words, if federal legislation mandates students labeled with specific learning disabilities receive instruction that goes beyond the traditional school year, then districts may identify students who do not fall under the federal mandate, but who could benefit from summer school programs as well.

Two Issues Surrounding Research on Summer Learning

The remaining part of this chapter is dedicated to examining prior research on summer educational programs and two issues that arise from this review. The two specific areas of summer educational programs that are reviewed include: The decrease in academic skills over the summer with special attention paid to the fact that this is mostly true for low SES students. This includes the various ways that school districts and researchers have attempted to deal with this decrease in academic skills over the summer months with special attention paid to the way that school districts and researchers have

addressed decreased academic skills among low SES students. The second issue is the limitations of the summer school programs that exist and the research for evaluating these summer programs. This includes the problem that non-attendance creates with program effectiveness and research.

The first study presented addresses the decrease in academic skills over the summer. Special attention is paid to the fact that this is mostly true for low SES students. Entwisle and Alexander (1992) reported a summary of seasonal effects on achievement. According to the authors, poorer students lost ground in the summers. Yet, their scores remained the same or improved during the winter season. This can be compared to their peers, who did not receive a free lunch meal subsidy and who did not make the same gains during the winter season. Therefore, the authors conclude that home resources among students not in poverty are able to stimulate growth during the summer season and the powers of schools are able to stimulate growth amongst students in poverty during the winter season.

One commonality among research on summer school is that there is very little long-term data analyzing the effects of summer interventions. Entwisle and Alexander, however, attempted to reverse that trend in their 1992 study. Despite the fact that the authors only examined mathematics achievement, Entwisle and Alexander's (1992) study of regression among students in Baltimore over two consecutive summers has been included in this study since it presented quality research on the effectiveness of a summer school program. The authors analyzed the program's effect on different socioeconomic sub-groups of students which supports the overarching theme of a decrease in academic skills over the summer by low SES students. It should be noted that their research did not

address how the students who attended summer school did in comparison with those who were invited to summer school but did not attend. This gap in the existing literature was one of the reasons for the design of the current research.

The Beginning School Study (BSS) was started in the fall of 1982. The authors used a stratified random sample in order to guarantee a sample of children that was equally divided by race. Furthermore, the authors wanted to represent all socioeconomic levels in the Baltimore City school system. Therefore, the authors divided the schools according to socioeconomic strata (blue collar or white collar) and race strata (segregated or integrated). The sample consisted of 790 beginning first graders. The researchers divided their samples according to racial groups (White or African American). Additionally, the researchers divided their samples based on the type of school students attended (segregated or desegregated). Parents of the students provided information on household configuration and parental levels of education during an interview as students were beginning first grade.

Entwisle and Alexander (1992) only examined mathematics achievement levels. The authors found mathematics achievement levels of African-American and whites to be almost identical in first grade. Yet, in two short years, African American students had fallen behind by about a half of a standard deviation. Additionally, the authors aimed to illuminate how factors such as summer vacation, poverty levels and parental education played a role.

The authors of the study used the student's scores on the California Achievement Test as a dependent variable. They referred to these scores as mathematics achievement

scores. The authors used four independent variables. First, the authors used student/school type. Students were characterized by race. There were two groups (African-American and White). Additionally, the students were characterized by the racial mix of their school (segregated and integrated). This organization allowed the authors to compare white students who attended segregated schools versus white students who attended integrated schools. Additionally, the authors were able to compare African-American students who attended segregated schools versus African-American students who attended integrated schools. Finally, the authors were able to compare white and African-American students who attended segregated schools to white and African-American students who attended integrated schools.

The authors used economic standing, parent configuration and parent educational level as independent variables. The authors assigned a “poverty” indicator based on information from school records indicating whether the child was eligible for subsidized meals at school. Subsidized meals at school were allotted to certain students based on their family income and size. Family type was based on parent interviews at the beginning of first grade. Family type was fixed for the duration of the two-year study. The authors organized the configuration as two-parent families and other. Based on the family interview, the parent was classified as high school dropout, high school graduate, or some post-secondary education.

Next, the authors reported how the students were different according to the gains they made during the winter season and the summer season. During the winter season when school was in session, white students who were educationally and more socioeconomically better off gained fewer points than their poorer classmates.

Furthermore, African-American children who received a meal subsidy gained more points than their counterparts who did not receive a meal subsidy. The authors reported much different changes, however, over the summer season than what occurred during the winter. Gains over the summer were, more often than not, negative. Yet, there was a difference between students based on whether or not they received a meal subsidy. Children who did not receive a meal subsidy made advances during both summer seasons of the study. On the other hand, students who received a meal subsidy consistently lost points over the summer season. Thus, the authors conclude that trends by socioeconomic status move in opposite directions depending on the season. During the winter season, when school is in session, comparisons between students usually favor low-status students on the socioeconomic spectrum. Yet, students of high-status, on the socioeconomic spectrum, make greater gains during the summer season.

Next, Entwistle and Alexander (1992) reported their summary of seasonal effects on achievement. According to the authors, there were only effects of subsidy status on summer mathematics score gains. There were no effects on winter gains. Poorer students lost ground in the summers. Yet, their scores remained the same or improved during the winter season. This can be compared to their peers, who did not receive a meal subsidy, which did not make the same gains during the winter season. Therefore, the authors conclude that home resources among students not in poverty are able to stimulate growth during the summer season and the powers of schools are able to stimulate growth among students in poverty during the winter season.

Entwistle and Alexander (1992) reported an inverse relationship between white students and their parent's level of education. This inverse relationship was similar to the

inverse relationship between home economic status and the student's test score gains during the winter season, and the marked direction relation in summer. White students whose parents were high school drop-outs gained 50 points in the first winter, while those whose parents have some post-secondary education gained 34 points. Yet, in the summer, the students of drop-outs lost almost 8 points while those whose parents had some post-secondary education gained over 14 points.

Entwisle and Alexander (1992) found a discrepancy across student/school type in student family configurations. Two parents were present in 34 percent of families of African-American children who attended segregated schools compared to 72 percent of families of white children who attended segregated schools. According to the researchers, two-parent vs. one-parent family configurations are often cited as a factor explaining differences in the school achievement of African-American and white children. In order to further examine whether or not family configuration contributes to the contrasting performance of white and African-American students, the authors added two-parent vs. one-parent as a third independent variable to a repeated-measures analysis of variance. Family configuration was considered simultaneously with the other independent variables. In the end, the authors reported that family configuration had little to do with academic achievement.

Finally, the authors conclude that segregated schools do not contribute to achievement score deficits among minority students. Rather, the authors argue that differences in student mathematics achievement scores are more closely related to their family economic level. In other words, economic factors are more closely linked to the differences in achievement scores among African-American and white students than are

racial settings from the schools they attend. Furthermore, the seasonal patterns of mathematics achievement scores highlight the point that home disadvantages are compensated for during the winter when school is in session. Poor students perform at nearly the same level as their peers who are better off on the socioeconomic spectrum. The authors argue that the schools in which their sample came from are doing a better job than they have been given credit for. Yet, the authors argue that it is when school is not in session that poor children experience consistent losses. Furthermore, the authors maintain that differences between two-parent and one-parent families are minimal when economic status is controlled for. Rather, the author's seasonal analysis methodology revealed the striking relationship between economic standing and summer gains. The authors found that children who are in poverty experience mathematics achievement loss every summer. On the other hand, students who are not in poverty make mathematics achievement gains every summer. In conclusion, the authors emphasize that mathematics achievement scores, gains or losses, were not very different by race when poverty level was controlled for. Additionally, any advantage that children from two-parent homes experienced disappeared when economic status was considered. Thus, it is the author's belief that it is not race, or family status, which dictates summer gains or losses. Rather, it is economic status. Children in poverty do well in the winter when school is in session but regress over the summer months.

In summary, Entwisle and Alexander (1992) have presented quality research on the effectiveness of a summer school program. The authors analyzed the program's effect on different socioeconomic sub-groups of students. Therefore, it fits under the umbrella of the first issue in this literature review. The first issue is the decrease in

academic skills over the summer with special attention paid to the fact that this is mostly true for low SES students. Special attention was paid to how the researchers have addressed decreased academic skills among low SES students in this first study. Yet, their research only yielded results for math achievement. Moreover, their research did not address how the students who attended summer school did in comparison with those who were invited to summer school but did not attend.

Another study that analyzes the decrease in academic skills over the summer, with special attention paid to the fact that this is mostly true for low SES students, is Alexander, Entwisle, and Olson's 2007 study that examined the long-term educational consequences of summer learning differences by family socio-economical level. The authors used data from the Baltimore Beginning School Study youth panel. The authors scrutinized achievement scores at the start of high school into their developmental precursors, back to the time of school entry in first grade. The authors reported that cumulative achievement gains over the first nine years of children's schooling primarily reveal school-year learning, whereas the high SES-low SES achievement gap at ninth grade can be traced back to different summer learning over the elementary year. The authors argued that the early out-of-school summer learning differences, in turn, substantially account for achievement-related differences by family SES in high school track placements (college-preparatory or not), high school non-completion, and four-year college attendance.

The Baltimore Beginning School Study used a representative random sample of Baltimore school children whose educational progress was monitored from first grade through the age of 22. The project began in the fall of 1982. The study participants were

randomly selected from 20 public elementary schools within strata defined by school racial composition and socioeconomic level starting in first grade. The authors used testing data from Baltimore City Public School System (BCPSS) records to track learning patterns, school records and student reports to identify students' high school curriculum placement (college preparatory versus others) , and student interview data from an age 22/23 Young Adult Survey (YAS) to determine high school completion and college attendance. The authors used questionnaire data from parents combined with school record data about parents to rank children's family socioeconomic standing in elementary school.

Alexander, Entwisle, and Olson (2007) analyzed scores on the Reading Comprehension subtest of the California subtest on the California Achievement Test (CAT-R) battery from school records over BSS years one through five (California Achievement Test 1979), fall and spring separately, and from a BSS administration of this same subtest in year nine (analyses using the Math Concepts subtest yield quite similar results). The authors noted that twice annual testing schedule for the early years allows separate calculation of school-year (fall to spring) and summer (spring to fall) learning gains over the entire elementary school period for children promoted regularly (repeaters are covered through the highest grade over these five years).

The authors used 11 testing points in the analysis (fall and spring for each of the first five years plus spring of year 9). They noted that this is an uncommonly rich set of testing data, but absences, transfers outside the city school system, and other complications result in not all children being tested on every occasion.

The authors asked, “What differences exist across social lines in year 9 achievement?” The authors addressed the question by comparing the learning patterns of children classified as “low” and “high” SES in terms of family background. The authors focused on comparisons across the SES extremes. The authors noted that the BSS enrollment is largely low income (half the BSS sample is classified low SES) and that few wealthy families send their children to public schools in low-income, high poverty school systems. Therefore, the authors admitted that the term “Extreme” is relative to the local context. Yet, within the BSS, low SES parents are mainly high school dropouts and high SES parents on average had attained some college. Therefore, the authors noted a meaningful contrast between these two groups in Baltimore, even if it was shortened relative to national differences.

The authors reported that in year nine the high SES achievement average is 73.2 points above the low SES average. Furthermore, about a third of the SES difference, 26.5 points, traces to disparities already in place when those children started first grade. Since home-based experiences and family resources predate school entry the remainder of the difference is built up over the school years. Of most relevance for this proposed research, the authors found that the largest component of the difference between the high SES and low SES achievement average built up over the school years is attributed to summer learning differences during the elementary years. Specifically the low SES group actually gains more during the corresponding elementary school years than does the high group but the school year gain is more than offset by their summer backslide.

The authors argued that the early years of schooling are foundational in that the skills acquired then support all later learning. They found that the achievement levels at

the start of high school substantially trace back to the early, formative years. Furthermore, the authors pointed out that most of that learning happens when the children are in school, so schooling indeed makes a difference for low SES youth and high SES youth alike. Yet, with respect to the year nine achievement gap according to SES background, experiences outside school make an even bigger difference because that gap substantially originates over the years before first grade and summer periods during the elementary school years.

Alexander, Entwisle, and Olson (2007) questioned whether or not their data revealing large cognitive differences tracing back to the period before high school matter in practical terms. Therefore, the authors analyzed attainment outcomes in high school and later selected benchmarks for the imputed sample, which was the same comparison of children classified by family SES. Remarkably, sixty-two percent of high SES children were enrolled in a college preparatory program in high school versus just thirteen percent of the low SES group. Furthermore, there are large differences in high school non-completion and college attendance as well. The authors reported on data covering the four years after the panel's on-time high school graduation in spring 1994. The data revealed over a third of the low SES group and just three percent of the high SES group are "permanent dropouts," as defined by high school dropouts who at approximately age 22 still lack high school certification of any type. On the other hand, almost sixty percent of the high SES group attended a four-year college by the age of 22. This is compared to just seven percent of the low SES group attending a four-year college.

Alexander, Entwisle, and Olson (2007) pointed out that the groups involved in the comparisons are not distinguished solely by achievement scores early in high school. Yet, out-of-school experiences account for the majority of achievement differences registered in the 9th grade. Furthermore, these achievement differences anticipate vastly different high school placements, modes of high school exit, and patterns of postsecondary attendance. Moreover, the authors argued that achievement levels at the start of high school play some role in overall schooling outcomes. These outcomes included curriculum placement decisions. Moreover, the outcomes include informing parents', teachers', and counselors' thinking about students' academic prospects. Finally, the authors argued that achievement levels at the start of high school play a role in how students determine their own sense of self in the student role.

Alexander, Entwisle, and Olson (2007) concluded that there is a familiar pattern of educational stratification where disadvantaged social beginnings predict disadvantaged social destinations. Furthermore, the authors argued that academic skill development plays a role in cementing the stratification link. Moreover, they argued that low achievement scores at the start of high school do not typically lead to later success. Likewise, the authors contended it is the low SES students, and those who are socially disadvantaged in other ways, who tend to fall toward the low end of the achievement distribution. The authors pointed out that typical studies, which only make comparisons in upper grades, hide the developmental history upon which students' high school records are built. On the other hand, their results show how out-of-school learning during the elementary grades is linked to the year 9 achievement gap by family SES. This is a gap that created a distinct separation of college track youth and non-college track youth.

Furthermore, it distinguished those who fall off the path to high school completion from those who attend four year colleges.

Finally, the authors added an important practical dimension to research on the seasonality of learning. The authors illuminated implications for how the out-of-school institutional contexts of family and community that frame young children's academic development contribute to patterns of educational stratification. The authors contended that stability in cognitive achievement over the course of young people's schooling is the bridge between summer learning shortfall over the elementary school years and later schooling outcomes. Furthermore, they argued that since it is low SES youth specifically whose out-of-school learning lags behind, this summer shortfall relative to better-off children contributes to the perpetuation of family advantage and disadvantage across generations.

In conclusion, Alexander, Entwisle, and Olson (2007) found that low SES youth are less likely to find their way to a college-preparatory high school program. This is due, in part, to their test scores being low at the very time these placements are made. Moreover, because low SES students score low, they are more likely to leave school without degrees and less likely to attend a four-year college. In light of these serious consequences, the authors argued that it is vital to question why levels of achievement at the start of high school are so different. It is well established that there are vast differences across social lines in an elementary child's out-of-school learning environment (Entwisle & Alexander, 1992). This helps explain why these students continue to lag behind in middle school and high school. Alexander, Entwisle, and Olson (2007) demonstrated how summer learning differences after children start school follow

a pattern. Moreover, the authors highlighted the degree to which the continuing press of school-age children's family and neighborhood environments contributes to the year 9 achievement differential between high and low SES youth: summer shortfall over the five years of elementary school accounts for more than half the difference, a larger component than that built up over the preschool years. In the end, the authors concluded that these learning differences from the early years that present themselves in grade 9 resonate during high school curriculum placements, high school dropout, and college attendance.

Based on their findings, Alexander, Entwisle, and Olson (2007) proposed school reform. The authors argue that the most effective time to address an achievement gap is during early elementary school, or even before. Early interventions to keep the achievement gap from opening wide in the first place should be of high priority. Next, the authors argued that once in school, disadvantaged children need year-round, supplemental programs that counter the continuing press of family and community conditions that hold them back. In the end, the authors called for summer schools that incorporate so-called best practice principles. They argued that in order to address the achievement gap, summer school programs need to target disadvantaged students specifically. Furthermore, the authors argued that the school-year pattern of achievement gain parity across social lines.

This review of the literature addresses two issues surrounding summer school. The first issue is the decrease in academic skills over the summer with special attention paid to the fact that this is mostly true for low SES students. Articles in this section thus far have analyzed ways that school districts and researchers have attempted to deal with this decrease in academic skills over the summer months. The next article presented

keeps with the theme of decreased academic skills over the summer months. Again, special attention is paid to the fact that this is mostly true for low SES students.

Benson, Borman, and verman (2005) used spring-to-fall reading achievement data to measure summer gains and losses for a sample of over 300 early elementary school students from high-poverty schools. The authors combined evidence from a randomized experiment of an academically intensive community-based summer school program with parental telephone survey data regarding the characteristics of the family and the nature of the children's summer activities.

Benson, Borman, and Overman's (2005) study is vital to this literature review because it paid close attention to the characteristics of student families and the nature of children's summer activities. The study is presented in this review of the literature because it is extremely unique in its nature. This analysis of family and summer activity is distinct because there has been a common theme throughout this literature review. Several studies have pointed out students from high-poverty schools making gains to a higher degree than their more well-off peers during the school year. Yet, when school is out, and the learning faucet is turned off, these same students from high-poverty schools lose ground at an alarming rate. The "faucet theory" states that chances to learn and access to educational resources are turned on for all children during the school year (Heyns, 1978). Furthermore, the faucet is turned on for children of all social and economic backgrounds. Therefore, children of all social and economic backgrounds make similar gains during the school year. On the other hand, the school resource faucet is turned off when school is not in session. Therefore, there are inequalities of

educational opportunities when school is not in session based on social and economic backgrounds.

Benson, Borman, and Overman's (2005) study presented quality research on the effectiveness of a summer school program. The authors analyzed the program's effect on different socioeconomic sub-groups of students. Their research, however, did not address how the students who attended summer school did in comparison with those who were invited to summer school but did not attend.

Benson, Borman, and Overman (2005) analyzed 300 early elementary school students from high poverty schools in the city of Baltimore. The sample was homogenous because the students were from high-poverty schools. The study is important to this review of the literature because the authors investigated the contribution of families and schools on student achievement during the traditional school year. Moreover, the authors provided research on seasonal patterns of achievement growth based on the socioeconomic status of parents. The authors argued that ignoring seasonal differences, which is common in studies conducted on summer programs, leads to a misunderstanding of the effects that families and schools have on educational outcomes.

The students were at risk for summer learning losses. The authors also used data from the Teach Baltimore summer program that has been mentioned in this review of the literature. Additionally, the authors used parent survey data that illuminated the characteristics of the family and the nature of the children's summer activities. Next, the authors used spring-to-fall reading achievement data to measure summer gains and losses. Benson, Borman, and Overman (2005) contended that their analyses offer

theoretical and practical insights into how families and community-based summer school programs may contribute to summer learning.

One aspect that is unique to the Benson, Borman, and Overman's (2005) study is their citation of several important aspects related to summer learning deficits. First, the authors built on developmental learning theories, specific to identified age-specific techniques of promoting cognitive growth. One theory the authors cited was the investment model. According to the investment model, parents invest both human and nonhuman wealth in the development of their children. Human wealth takes the form of time spent with children and the specific skills, abilities, and competencies that parents bring to these interactions (Becker, 1981). According to Becker, nonhuman wealth took the form of income and assets, which affect not only the goods and services that parents can purchase but also the amount of time that parents can spend with children. Also, Haveman, Wolfe, and Spaulding (1991) argued that according to the investment model, the greater the value of parental resources, the larger the investment in children and the greater the children's educational attainment. Benson, Borman, and Overman's (2005) attention to this parental impact detail set the stage for their study. More than any other time in this review of the literature, the authors were making a case for parental involvement affecting achievement.

According to Benson, Borman, and Overman (2005), there are different reports on the importance of material wealth in developing the human capital of children. The authors' examination of material wealth and achievement is vital to this review of the literature. The authors cited Sara McLanahan's 1985 study that examined family structure and the reproduction of poverty. According to McLanahan, there is a 15%

increase in the likelihood of high school graduation for each \$10,000 increase in family income. The model suggested a linear relation between economic resources and educational outcomes (McLanahan, 1985). On the other hand, Mayer (1997) found that the shape of the relation between financial resources and achievement growth was that of a threshold. Once children's basic material needs were met, achievement growth no longer occurred as a result of further monetary investment (Mayer, 1997). Thus, Mayer's research presented a clear difference from McLanahan's in regards to the importance of economic resources.

Mayer's findings do not disregard the importance of economic resources in the role of educational outcomes. Rather, Mayer argued that is important to consider measures that distinguish between parental expenditures and other types of parental resources. Mayer reported statistically significant achievement effects associated with two measures of parenting practice. The strongest predictor from Mayer's research combined a measure of hours per day of parental television watching with a measure of the frequency with which parents read to their children. Mayer weighted television watching negatively and weighted reading positively in order to create a "TV-Read Index." Mayer's index had a positive association with reading and math achievement. Therefore, Mayer concluded that parents of all SES levels can take action in order to promote their children's learning, especially during the summer months. In other words, parents can help their students learn during the summer months, regardless of their wealth.

Mayer's findings fit into this review of the literature because he concluded that parents of all SES levels can take action in order to promote learning during the summer

months. In other words, parents play a key role in keeping the learning faucet on during the summer months. More importantly, low SES level parents can help ensure their children keep learning during the summer months.

Benson, Borman, and Overman (2005) pointed to Entwisle et al. (1997) in an attempt to argue that parents' expectations for their children's academic success are equal in importance to parental SES and that these two factors are statistically independent in their effects on summer achievement growth. Unfortunately, parental expectations are not evenly distributed among children of different SES levels. According to the examination of the Beginning School Study conducted by Entwisle et al. (1997), measures of parental expectations prior to the first grade demonstrated a difference in expectations based on SES level. Specifically, parents of low SES children tended to have lower expectations for their children's first-year reading and math marks. Furthermore, parents of low SES children had lower expectations for their children's subsequent educational attainment. Remarkably, parental expectations were correlated with actual reading marks and reading instructional level, the conduct and work habit appraisals of teachers, and eighth grade course placements.

Benson, Borman, and Overman (2005) concluded that the findings of Entwisle et al. (1997) demonstrated that parental expectations matter for disadvantaged children. Across status groups, higher parental expectations were positively associated with academic self-esteem and students' own reading expectations were negatively related to problems including absences and referrals for academic problems. Furthermore, Benson, Borman, and Overman (2005) pointed out that Entwisle et al. (1997) found children of parents with high expectations were more likely to engage in activities that have been

associated with summer achievement growth. These authors also found a positive correlation between parents' expectations and their appraisals of the socioemotional status of their children. Benson, Borman, and Overman (2005) suggested that when Entwisle et al.'s work is combined with Mayer's (1997) finding that the linkage between positive appraisals and parental nurturing indicated that parents with higher expectations may also be more nurturing of their children than other parents. Therefore, it can be concluded that these findings suggest the importance of considering parental expectations as a factor that may promote summer learning. Thus, Benson, Borman, and Overman (2005) stressed the importance of creating separate measures of parental expectations and parental activities, and of exploring the various connections between expectations and activities.

Benson, Borman, and Overman (2005) noted the lack of evidence to support the notion that summer instruction may promote summer learning or at least prevent summer losses. The authors pointed out that very few researchers have designed high-quality experimental or quasi-experimental studies of the potential achievement effects associated with summer school interventions. Moreover, the authors cited Harrington-Lueker's 2000 study that determined middle class parents as viewing summer school as a time for enrichment and a chance to get a head start on the next school year. This belief system is in contrast to parents of low income students who view summer school as a form of punishment (Harrington-Lueker, 2000). Therefore, Benson, Borman, and Overman (2005) stressed the need to promote the importance of summer school attendance among parents from high-poverty communities. Moreover, the authors

emphasized the need to transform the very nature of summer school programs for disadvantaged children.

Benson, Borman, and Overman's (2005) study built on the faucet theory of Enwisle et al. (2000) that has already been presented in this review of the literature. According to the faucet theory, if SES effects are left unaddressed, there will be an inequality of summer learning. The authors predicted a link between providing high-quality summer school programs to families from high-poverty contexts and children making gains during the summer. Moreover the authors calculated these same children returning to school in the fall better prepared to pick up where they had left off. Therefore, the authors suggested a well-designed summer school program can alter the relation between SES and reading achievement.

Benson, Borman, and Overman (2005) began their study by examining how much students gained or lost during the summer. Then, the authors analyzed the relationship between SES and other family background characteristics with summer achievement gains and losses. Next, the authors addressed the factors that would guide their research. Considerations were given to psychological resources, including parental expectations, experiences such as field trips, and targeted learning activities. Most of these considerations had been taken into account by prior researchers, as presented in this review of the literature. The authors, however, considered a new factor, not yet taken into account by other researchers. The authors studied the extent to which parents supported their children's participation in formal summer learning settings, most notably summer school. Therefore, the authors evaluated an underlying factor that may help

explain some of the observed differences in the summer school outcomes of disadvantaged and higher-SES students.

Benson, Borman, and Overman (2005) collected the data for their study during the spring, summer, and fall of 2000. The broader study examined the effectiveness of an academically intensive summer school program, the Teach Baltimore Summer Academy. The original study examined how the Teach Baltimore Summer Academy prevented summer reading achievement losses for a total treatment group of 438 students from high-poverty schools. The control group for the original study was 248 students not assigned to the Teach Baltimore treatment, resulting in a total sample size of 686 students. The authors were able to conclude that there were 154 students for whom there was no longer accurate contact information. Therefore, the authors attempted to survey the remaining subsample of 532 parents, of whom 232 were parents of treatment students who attended Teach Baltimore during the summer of 2000, 111 were parents of treatment students who did not attend or were “no show” during the summer of 2000. One hundred eighty- nine were parents of control students.

Benson, Borman, and Overman (2005) created an experimental treatment assignment design that allowed them to generate unbiased estimates of the intent -to-treat effect offering the Teach Baltimore program relative to not offering the program. Since the program was voluntary there was no guarantee of participation. Also, assignment to the control condition did not preclude parents from seeking out other summer school opportunities.

The 438 Teach Baltimore children were assigned to participate at five hub sites, which were centrally located to serve the 10 participating schools. The design of the intervention was homogenous across the five sites. The educational programs built on citywide reading curriculum that was offered during the regular school year.

The Teach Baltimore Summer Learning Academy has been mentioned several times in this review of the literature. It was a six-week program. There were three hours of intensive reading and writing instruction each day. Components of the Teach Baltimore prototype include small group instruction, early intervention during primary grades, parent involvement and participation, and careful monitoring to ensure that instruction is being delivered as prescribed and monitoring student attendance. Finally, the Teach Baltimore program design addressed limitations of other summer programs such as short program duration, loose organization, low academic expectations, discontinuity between the summer curriculum and curriculum during the year, and limited academic focus.

Benson, Borman, and Overman (2005) used a detailed questionnaire that allowed them to collect information from parents of control and treatment “no-show” students regarding the possible involvement of their children in other organized summer programs. Moreover, the authors found that a sizeable number of control group members actually attended other summer school programs with less focus on academic content. The sample allowed the authors to compare the effects of an academically focused summer school program to programs with a more mixed, academic and recreational, focus. In addition, the questionnaire collected data from parents of treatment, control, and no-show students regarding home-based activities, resources, beliefs, and

expectations that may be associated with differences in summer learning. The survey consisted of 30 items for parents of treatment students who had attended the Teach Baltimore Academy during the summer of 2000 and an additional seven items, which pertained to possible involvement in other organized summer programs during the summer of 2000, for parents of control students and treatment “no-show” students. After reading each survey item to the respondent, the interviewer read the list of responses from which the parent could choose.

Benson, Borman, and Overman (2005) used four principal sets of measures that were collected and developed for the study. The authors used reading achievement scores, student and family background data, summer school participation, parental resources, activities, and beliefs related to summer learning. The reading achievement scores and some additional background and summer school participation data were collected through other means. The parental resources, activities, beliefs, and some information on summer school participation and family background were derived from the aforementioned telephone survey. All variables reflecting parents’ resources, activities, and beliefs were constructed based on responses to the parent telephone survey. The family-based activities supporting summer learning included taking the child to cultural events, encouraging reading, and church participation. These activities represented ones directly aimed at promoting and practicing children’s literacy skills and other activities that are not strictly academic but that might be important in more generally promoting children’s development and learning.

Benson, Borman, and Overman’s (2005) study is unique because there has been little known about how parents and communities contribute to or may help overcome

seasonal achievement losses. The authors' analyses tested whether material resources, social and psychological capital, and community institutions can help promote summer learning. The authors' findings were similar to other research presented in this review of the literature. Their results showed that when summer learning needs of children from high-poverty contexts are left unaddressed, they experience summer achievement losses. The outcomes that were not consistent with prior research, presented in this review of the literature, is the fact that SES differences among families from within the high-poverty neighborhoods studied were not associated with summer learning differences. The authors noted two issues about this inconsistency. First, the differences in family background among these children from high-poverty contexts may have been too slight to demonstrate any reliable association with summer achievement outcomes. Second, it is possible that the family-based SES differences could simply have been less important than neighborhood poverty context in explaining summer learning. Therefore, Benson, Borman, and Overman (2005) argued that previous researchers may have underestimated the importance of neighborhood context when focusing most of their attention on family based SES inequalities in summer learning.

Benson, Borman, and Overman (2005) concluded that a voluntary summer school program developed specifically to the summer achievement slide can have positive effects on students' summer learning. However, the outcomes also indicated that simple assignment to the program is not likely to make a difference. For most families in the United States, summer is reserved for recreation rather than academics. The authors argued that their results suggest that when parents make it a priority to support their children's attendance at summer school, the summer slide can be prevented. The

students who attended the full Teach Baltimore program returned to school in the fall with achievement scores more than one quarter of a standard deviation higher than those of their peers who did not attend the program.

One of Benson, Borman, and Overman's (2005) unique findings was that attendance at the voluntary Teach Baltimore program included an element of self-selection by parents and children. Due to the self-selection, the families who were successful in supporting their children's attendance at Teach Baltimore differed from those who were less successful. In systematic differences among families that are associated with improved attendance, there are also sources of summer learning advantages. Therefore, some portion of the apparent Teach Baltimore attendance effect actually may represent the effects of other attributes of the family. Thus, the authors concluded that developing a better understanding of the family characteristics that explain differences in summer school attendance could help advance both theory and practical knowledge.

Prior research, presented in this review of the literature, shows that children from higher-SES families tend to realize greater achievement benefits from summer school than children from lower-SES families. One reason for these phenomena may be that there is a greater ability on the part of higher-SES families to support their children's regular attendance at the programs. Benson, Borman, and Overman's (2005) findings supported this speculation in that children from higher-SES families did have somewhat better Teach Baltimore attendance. The authors hypothesized that better access to reliable transportation, greater flexibility in work schedules, and stronger connections with the middle-class summer school program staff may be just a few of the factors that

are associated with this result. Despite these advantages, children from higher-SES families did not achieve greater benefits from Teach Baltimore than children from lower-SES families.

The authors argued that the factors associated with differences in Teach Baltimore attendance reflect practical issues surrounding the theoretical concept of social capital. Social capital, or the relationships of commitment and trust, may exist at both the individual and community levels. As a community-level resource, social capital refers to the strength of ties among members of the community and the quality of social support available, both in terms of informal relationships among people and through formal institutions, such as churches or schools. Therefore, the authors concluded that the variability in summer school attendance itself underlines that individuals vary in terms of their ability, desire, need, and general proclivity to take advantage of community resources.

Another factor unique to Benson, Borman, and Overman's (2005) study was their analysis of family size. The authors found that families with larger numbers of children tended to engage in and take greater advantage of the community-based Teach Baltimore summer school program. Each additional sibling that a Teach Baltimore student had was associated with an increase of about 1 ½ days of attendance. The authors suggested that families composed of more children tend to place more demands on parents for child care. In larger families, parents can have less social capital available to offer each child and may seek child-care help from the community. In this way, the greater attendance among children from larger families may reflect a practical need for consistent child care in a safe environment that also offers opportunities for academic development.

Benson, Borman, and Overman (2005) concluded that families that use other neighborhood institutions, like churches, as forms of social capital to support the healthy development of their children were likely to support the social and educational development of their children through other neighborhood resources. These resources included summer school. The authors suggested that this relation may reflect some families' wider awareness and acceptance of community institutions as a result of their broader and stronger social ties developed through church participation. Or, the authors suggested that the relation may represent a general proclivity on the part of some families to take advantage of organized institutional forms of social capital that can help their children.

In conclusion, Benson, Borman, and Overman (2005) pointed out the importance of the distinction between individual agency and social capital as a key to achievement outcomes. The authors stressed that as a consequence of simply providing resources that enrich a high-poverty neighborhood's available educational resources and social capital there may not be obvious benefits for the typical parent and child within the community. Rather, the authors concluded that there are large and important differences among families' levels of use of an institutionally based form of social capital, or in this case, summer school programs. The authors took this finding and applied it to prior research on summer school. The authors pointed out that prior research on promoting summer learning for disadvantaged students has not been successful in producing consistent empirically based findings that suggest how parents and summer school can help. Therefore, the authors suggested that their findings point out that there has been little attention paid to the interaction between parents and schools. The authors stressed that

without parents and summer schools working together, children suffered summer learning losses and neither parents nor schools working independently made much of a difference. In the end, the authors argued that in order to counteract the summer achievement slide, children need both structured learning opportunities and resources offered through a formal school-based setting. Additionally, the students need a commitment of parents to make sure that they attend and get the most out of the program.

Benson, Borman, and Overman's (2005) study was key to this literature review because it analyzed the characteristics of student families and the nature of children's summer activities. The study was presented in this review of the literature because it was unique in its nature. The study of family and summer activity is unique because there has been a common theme throughout this literature review. Several studies have shown that students from high-poverty schools make gains to a higher degree than their more well-off peers during the school year. Yet, when school is out, these same students from high-poverty schools lose ground at an alarming rate. These counteracting trends mean that children of all social and economic backgrounds make similar gains during the school year as a whole, but do so in different ways

The next study in this review of the literature is very similar to Benson, Borman, and Overman's 2005 study and also focuses on the Teach Baltimore summer program. The study is viewed through the lens of faucet theory which states that while chances to learn and access to educational resources are turned on for all children during the school year the faucet is turned off when school is not in session (Heyns, 1978). Therefore, children of all social and economic backgrounds make similar gains during the school year but differ during the summer. This literature review is organized around two

common issues that are related to summer learning. The first issue is the decrease in academic skills over the summer with special attention paid to the fact that this is mostly true for low SES students. This issue includes the various ways that school districts and researchers have attempted to deal with this decrease in academic skills over the summer months. Special attention is paid to the way that school districts and researchers have addressed decreased academic skills among low SES students. The following study pays special attention to decreased academic skills among low SES students. The study is also included in this review of the literature because it includes a three-year longitudinal study.

Borman and Dowling set out to analyze whether or not a multiyear summer school intervention could counteract the cumulative effect of the summer slide on low-SES students' reading outcomes. Once again, this study was included because it was a multi-year analysis of a summer intervention. The author's three-year longitudinal study used a randomized field trial that studied the effectiveness of the Teach Baltimore Summer Academy's ability to prevent the cumulative effects of summer learning loss and accelerating longitudinal achievement growth (Borman & Dowling, 2006).

Several studies in this review of the literature mention the Teach Baltimore program. It is fitting to mention some specifics of the program. A Johns Hopkins University graduate named Matthew Boulay began the Teach Baltimore program in 1992. He worked with staff from Johns Hopkins University Office of Community Relations and Volunteer Services to create a tutoring program. During its first year, the Teach Baltimore program had 10 undergraduate tutors that served high school students from Southwestern High School. Twenty years later, Teach Baltimore has served over 2,000

students and is based within the Center for Summer Learning. The Center for Summer Learning is a self-supporting, not-for-profit unit of Johns Hopkins University. The mission of Teach Baltimore is to create high quality summer learning opportunities for students from high-poverty communities and to improve teacher recruitment and retention in Baltimore.

Instructors at the Teach Baltimore Summer Academy are put through an intensive pre-service training program in which they receive instruction on the reading curricula, lesson planning and classroom management. The Teach Baltimore student day begins with breakfast. Then, instructors provide three hours of intensive reading and writing instruction. Teach Baltimore instructors use phonics based instructional materials and read aloud activities. Then, students have lunch and participate in physical activities including hands-on math and science projects. Additionally, students take weekly field trips to museums such as Port Discovery, The Museum of Natural History, and The Smithsonian Environmental Research Center.

Teach Baltimore has three main goals. The first goal of Teach Baltimore is to prevent summer learning loss and promote the academic achievement of children from high-poverty communities, with a particular emphasis on reading. Based on the impact of summer vacation on low-SES students (Entwisle & Alexander, 1992), Baltimore public school students are at a considerable disadvantage (Borman & Dowling, 2006). The authors used free and reduced price lunch qualification as an indicator of low SES. Eighty-six percent of the students at Teach Baltimore sites were eligible. On the other hand, only 35% of the students across Maryland were eligible for free and reduced price lunch. Additionally, Baltimore students, like students from many other urban centers,

perform at considerable lower academic levels. According to Borman and Dowling (2006), only 15% of third-grade students at Teach Baltimore sites performed satisfactorily on the 1999-2000 reading section of the Maryland School Performance Assessment Program compared to 39% statewide.

Next, the second goal of Teach Baltimore is to transform collegiate volunteerism into a focused and effective commitment. Finally, Teach Baltimore strives to create a successful prototype that can be replicated easily and cost-effectively.

Borman and Dowling (2006) argued that the Teach Baltimore program includes components that are vital to improved achievement for summer program attendees. First, Teach Baltimore has small-group and individualized instruction. There are only eight students per instructor. Next, Teach Baltimore provides early intervention to students from primary grades. Also, Teach Baltimore provides careful scrutiny of instructors to ensure that instruction is being delivered as prescribed. Additionally, Teach Baltimore carefully monitors student attendance. Another vital component to the Teach Baltimore program is length of time provided. The program implements a full day (8:30a.m-2:30p.m.), for the duration of the seven-week program. Therefore, the two and one-half hours of reading and writing each morning is more instructional time than conventional regular school-year classrooms. Furthermore, the curriculum is closely aligned to school-year curricula. Finally, one vital aspect of the Teach Baltimore program is the selection of staff. Teach Baltimore only selects volunteers who demonstrate a high expectation for student learning.

Borman and Dowling (2006) hypothesized that providing academically intensive summer school programs to families from high poverty contexts can help all participating children make gains during the summer and return to school in the fall better prepared to pick up where they had left off. The authors argued that summer school can be the mechanism through which the school resource faucet remains on after the regular school year ends. The authors predicted that increased opportunities to learn through three summers of participation in the academically focused Teach Baltimore summer school program, can help accelerate students' longitudinal learning and help prevent students from falling behind academically over the first years of formal schooling.

Borman and Dowling (2006) examined whether students in the Teach Baltimore Summer Academy gained or lost during the summer. Next, the authors analyzed how these outcomes compared to students' gains while in school. Also, the authors examined the effects of the academically intensive Teach Baltimore Summer Academy on the multiyear achievement outcomes of early elementary students. More specifically, the authors examined whether this program had the effect of altering the longitudinal achievement outcomes of the students who were assigned the treatment condition. Fourth, because Teach Baltimore is a voluntary program with imperfect student attendance, the authors examined two types of treatment effects: the intention-to-treat effect of student assignment to the Teach Baltimore program; and the achievement effects associated with stronger compliance with the full three-year intervention schedule.

The sample included 686 students from ten high-poverty, urban schools. The sample was composed of two cohorts: a group of 428 kindergarten and first-grade students who joined the study during the spring of 1999; and 258 kindergarten students

who joined the study in spring 2000. For the first cohort of 293 Teach Baltimore students, the intervention began during the summer of 1999, after the students had completed kindergarten or first grade. Additionally, there were 135 other students who were assigned to the no-treatment control group. For the second cohort of 145 Teach Baltimore students, the intervention began during the summer of 2000, after the students had completed kindergarten. Additionally, there were 113 other students who were assigned to the no-treatment control group.

Over the course of the final two weeks of the school year, the evaluation team administered Form B of the Comprehensive Test of Basic Skills, 4th Edition (CTBS/4) reading test to all treatment and control students at one of the 10 Teach Baltimore site schools. Then, during the first two weeks of the new school year, staff re-administered the same test to each cohort using an alternate form the second time. The same procedure was repeated during each ensuing year of the study. Therefore, over the course of the full three years of the study, treatment and control children took the norm-referenced reading achievement tests six times, at the beginning and end of each of the three summers. Thus, the testing periods capture both school-year and summer learning. The authors of the study used the Total Reading results of the study as the measure to provide each student's achievement growth in the literacy domain.

The Teach Baltimore study's authors collected demographic data that included gender, race, free-lunch eligibility status, attendance rate, and treatment/control parental years of schooling. Ninety-seven percent of the students were African American. Eighty-five percent were poor, based on their participation in the federal free lunch program. Finally, the typical parent reported completing high school.

Borman and Dowling (2006) took precautions to maintain effective sample maintenance. Over the course of the study, the authors used various techniques to retain the control and treatment samples and to have the 1999 and 2000 Teach Baltimore students continue their involvement in the multi-year program.

The results showed that flatter learning trajectories occur during the summer periods, between the spring and fall testing periods. The school-year learning trajectories, between fall and spring testing points, showed steeper acceleration of student learning. The control-treatment differences were small. Yet, it is apparent that there is an accumulation of control students' summer learning deficits. This accumulation is relative to that shown for Teach Baltimore students. The accumulation is responsible for widening the achievement gap across the six time points.

Prior to the Teach Baltimore study, research has revealed a summer achievement slide among children in high-poverty areas (Entwisle & Alexander, 1992). According to Entwisle and Alexander (1992), a random sample of Baltimore students starting first grade showed equivalent mathematics achievement levels of African-American and white students. Yet, after two years, African-American students had fallen behind due to home influences over the summer months. However, before the Teach Baltimore study, there was little research done about how a multi-year summer school program could address summer losses in achievement. Thus, the multi-year analysis of the Teach Baltimore programs provided valuable insight into the effectiveness of summer school over several years. Borman and Dowling (2006) reported that the multi-year analysis proved that a program developed specifically to stop the summer achievement slide can help prevent students from falling behind and even have a positive impact on student learning

outcomes. According to the authors, one major finding of the Teach Baltimore program was the importance of recruiting students in order to sustain the long-term participation in the program. More specifically, the findings from Teach Baltimore suggested that it is vital to maintain contact with personnel from schools served by the program as well as parents whose students are served by the program in an attempt to bolster attendance. Additionally, the multi-year analysis of the Teach Baltimore program highlighted the importance of aligning the curriculum of a summer program to the content of the regular school-year curriculum. Finally, weekly field trips, provided by Teach Baltimore, were deemed an important recruiting tool for students and kept their interest in the program over the course of the summer months.

One of the limitations of the multi-year analysis was that only half of the students assigned to the program attended with enough regularity to make a difference. Moreover, the multi-year analysis revealed the importance of attendance to the program. Students attending at least two of three summers, at an average attendance rate, returned to school in the fall of the third year of the study with achievement scores of approximately one half of one standard deviation higher than those of their similar peers from the control group. This treatment effect for compliers was equivalent to 50% of one grade level in vocabulary, 40% of one grade level in comprehension, and 41% of one grade level in total reading.

In the end, the findings from the multi-year analysis from Teach Baltimore were promising. Yet, it was not clear to the authors of the study what extent their findings may be used to generalize other summer school programs that are happening in similar urban areas, with high poverty rates, across the country. Borman and Dowling (2006) identified

the sustained participation in the Teach Baltimore Summer Academy as an essential piece for improved academic achievement outcomes. Additionally, the authors identified another key difference between the Teach Baltimore program and other mandatory summer school platforms. Unlike mandatory summer school programs, where students are required to attend in order to move on to the next grade, students who attended Teach Baltimore volunteered to take part in the study and the program. The authors suggested that this spirit of volunteering may suggest a tendency to commit to and attend summer school over time. The authors conceded that mandatory programs may also encourage regular attendance because students who do not attend will not move on to the next grade.

The analysis of the Teach Baltimore program suggested that a voluntary summer school program can help improve longitudinal learning for students from high-poverty schools. Yet, the authors of the study pointed out that this learning is only possible if students regularly attend the program. In summary, Borman and Dowling (2006) have presented quality research on the effectiveness of a summer school program. The authors analyzed the program's effect on different socioeconomic sub-groups of students. Yet, the sample that the authors drew from was remarkably homogenous. Ninety-seven percent of the students were African American. Eighty-five percent were poor, based on their participation in the federal free lunch program. Finally, the typical parent reported completing high school. Moreover, their research did not address how the students who attended summer school did in comparison with those who were invited to summer school but did not attend.

Thus far, this review of the literature has examined the decrease in academic skills over the summer months. Special attention has been paid to the fact that this is mostly

true for low SES students. Articles presented thus far have included ways that school districts and researchers have attempted to deal with this decrease in academic skills over the summer months. The next article presented continues in the spirit of decreased academic skills over summer months with special emphasis on analyzing the importance of student attendance during summer interventions. Through the lens of decreased academic skills during the summer months and attendance, the next study presented in this review of the literature highlights the concept of social promotion and mandatory summer school. Roderick, Nagoaka, and Allensworth (2005) examined the end of social promotion in Chicago. The authors highlighted the findings presented by the Consortium on Chicago School Research's multiyear evaluation. Much of their research focused on Chicago's Summer Bridge summer school program and the effect it had on student achievement.

In 1996, Chicago Public Schools enacted a policy to end social promotion in the third, sixth, and eighth grades. The new social promotion policy was frank: students in grades three, six, and eight would face mandatory summer school and ultimately retention if they did not meet minimum test-score cut-offs on the Iowa Test of Basic Skills (ITBS) in reading and mathematics. The cut-offs were set relatively low. Students needed to be one year below grade-level in third, a year and a half below grade-level in sixth, and a year and eight months below grade level in the eighth grade. On a national ability distribution scale, these cutoff scores correspond to the 20th percentile (Roderick, Nagoaka, & Allensworth, 2005). Also, students in special education and students who were in bilingual education programs were exempted from the policy. In those two

special cases, promotional decisions would not be made solely on the basis of standardized achievement test scores.

Once the district had adopted a strict set of guidelines to ensure performance on the standardized achievement tests, they invested heavily in a new summer school program. The name of the summer program was Summer Bridge. The goal of Summer Bridge was to give students extra instructional time, focused remediation, and an extra chance to pass the test. In other words, students who did not meet the cut-off requirements in the spring were mandated to participate in the Summer Bridge program. Then, they were given a second chance to meet the cut-offs in August.

The Summer Bridge was six weeks long. The program provided three hours of instruction per day. The eighth graders attended a more intensive Summer Bridge program that spanned seven weeks and lasted four hours per day. Summer Bridge delivered a significant reduction in average class size. Unlike the traditional school year in Chicago public schools, Summer Bridge groups averaged only 16 students per class. The curriculum was centrally developed and aligned with the ITBS. Teachers were provided with daily lesson plans and instructional materials. Moreover, monitors visited the classrooms regularly to ensure that all the teachers were following the prescribed program (Roderick, Nagaoka, & Allensworth, 2005).

Chicago's initiative has been the most persistent social promotion reform with the most positive and negative results. On one hand, test scores quickly improved after the implementation of high-stakes testing and the proportion of students with very low test scores fell. On the other hand, the students who were retained, according to the cut-offs

set by the policy, still struggled. Nearly one in five third graders and one in ten sixth and eighth graders did not meet promotion requirements (Roderick, Nagaoka, & Allensworth, 2005).

In Chicago, the district controversially accepted the premise that high-stakes standardized testing ensures basic skill sets are mastered by students before they are allowed to progress. Proponents of the policy in Chicago argued that the threat of retention, coupled with extra short-term remedial supports, is enough to move students forward along the standardized testing achievement spectrum. Advocates of the policy in Chicago also claimed that the threat of retention motivates students to work harder and parents to take a more active role in their child's academic endeavors. Moreover, advocates of the policy argued that teachers focused their attention on low-performing students and stressed the development of basic skills (Roderick, Nagaoka, & Allensworth, 2005). Regardless of what people think about social promotion, the enactment of the policy in Chicago led to the implementation of a colossal summer school program. In turn, there was a wealth of data on the effectiveness of one summer school program.

The scale of Chicago's initiative was unprecedented. In the first year, only half of third graders subject to the policy, sixty-five percent of sixth graders, and seventy-two percent of eighth graders met the promotional cutoffs at the end of the school year. Thus, there were over 27,000 students who were required to attend Summer Bridge. Then, at the end of the summer, Chicago Public Schools retained 20% of eligible third graders and 10% of eligible sixth- and eighth-grade students. The retention rates were alarmingly high the first year. Yet, in 1995, the year before the policy was enacted, only 60% of

Chicago's sixth graders had reading and mathematics ITBS test scores above 5.3 grade equivalents, the promotional cutoff for that grade. Then, in 1999, four years into the policy, 74% of sixth graders reached the cutoff by the end of the school year, and an impressive 85% of sixth graders reached the cutoff by the end of the summer. Roderick, Nagaoka, and Allensworth (2005) argued that the Summer Bridge program allowed a second chance opportunity that was effective in helping more students to be promoted. Additionally, there was a consistent improvement in school year passing rates.

In an attempt to better examine what was generating improvement trends and the impact of the policy on student achievement, Roderick, Nagaoka, and Allensworth (2005) examined the Consortium on Chicago School Research's evaluation of the Chicago policy from 1996 to 2001. The study authors used three sources of data. First, they examined longitudinal school records from 1990 to 2005. Next, the authors examined surveys conducted before and after the policy was implemented. Finally, the authors examined qualitative data collected during a simultaneous longitudinal study and classroom observation of the Summer Bridge program. The qualitative study followed 100 low-achieving African-American and Latino students in five elementary schools during the year before they took the test, over the course of the summer and during the subsequent retained or promoted school year. The study included teacher assessments, teacher interviews, and an intensive evaluation of the Summer Bridge program. This evaluation included classroom observations.

First, in their examination of the social promotion policy in Chicago Public Schools, Roderick, Nagaoka, and Allensworth (2005) contended that the Summer Bridge program directed significant resources to students who were underperforming on the

ITBS. The authors argued that students reacted positively to the small class-size and personal attention at Summer Bridge. In survey responses, students revealed their belief that Summer Bridge was a positive learning environment in which they were expected to work hard and where teachers supported their efforts. Also, students who attended Summer Bridge reported higher levels of academic expectations and support from their Summer Bridge teachers than they did from their regular classroom teachers during the traditional school year. Also, the attendance of Summer Bridge program was surprisingly high. Ninety-percent of students who failed the ITBS in the spring attended the program.

Next, the authors concluded that Summer Bridge was effective in producing significant short-term test score increases, particularly in sixth and eighth grades. However, even in the highly structured approach to teaching in Summer Bridge, there was still a great variation of achievement across schools. High achieving elementary schools were able to create more effective programs for their students than lower-achieving schools. The authors could predict that summer reading test score gain for an average third grader would be nearly three times larger if a student attended Summer Bridge in a school that had high achievement during the school year rather than attending Summer Bridge in a low-achieving school.

Third, the authors found that there was significant variation in the classroom effects of Summer Bridge (Roderick, Nagaoka, & Allensworth, 2005). According to the qualitative portion of the study, where classroom observations were conducted, significant differences were observed in the quality of instruction resulting in a wide variation of achievement. Furthermore, the authors linked the variation of strength in

Summer Bridge programs by school to an alarming trend. The authors reported figures from the 1998 school year that reveal highly concentrated retention rates in Chicago public Schools. There were 416 schools in Chicago that had more than 20 third-grade students affected by the policy. Yet, fifty percent of retained third graders were retained in the 100 Chicago public schools with the highest retention rates, and nearly two-thirds were retained in the 150 highest-retention schools.

Next, the authors found that Summer Bridge did little to help the students who were furthest behind on the standardized achievement test scale. Students with the lowest test scores, when the policy was implemented, had the lowest Summer Bridge gains. Furthermore, the modest gains that these low-achieving students did make were not enough to raise their scores to the promotional cutoffs set by the policy because they started so far behind. More specifically, the authors labeled certain students as facing a high risk of retention. Other students, who were closer to the cutoff scores, were not labeled as a high risk. Only 11 percent of third graders who were labeled as facing a high risk of retention were able to meet the promotional cutoffs during the Summer Bridge program. On the other hand, nearly 80 percent of students who were not labeled as facing a high risk of retention were able to meet the promotional cutoffs during the Summer Bridge program.

In conclusion, Roderick, Nagaoka, and Allensworth's 2005 study was included in this review of the literature because the Summer Bridge program that they studied was mandatory for students who were invited in order to be promoted to the next grade. Therefore, the study fell under the second theme of this literature review. The second theme of this literature review is the examination of the limitations of the summer school

programs that exist and the research for evaluating these summer programs. This study paid special attention to the problem that non-attendance creates with program effectiveness and research. Attendance rates in this study were incredibly high. Yet, it is unfortunate that the authors did not compare changes in achievement amongst students who attended the program versus students who were invited to the program but did not attend.

The next study in this literature review was included because it falls under the second theme of this literature review. The second theme of this literature review is the examination of the limitations of the summer school programs that exist with special attention paid to the research for evaluating these summer programs and the effect that attendance has on these summer programs. Stone, Engel, Nagaoka, and Roderick's 2005 study was included in this review of the literature because it further examined the Summer Bridge program and aimed to highlight why the program was successful. The authors examined how low-performing students attending the Chicago Public Schools' Summer Bridge program perceived their summer learning environments. The authors investigated how a group of low-achieving students experienced their classrooms in Chicago's Summer Bridge Program. The authors used student survey results from the 1999 school year and Summer Bridge Program. Additionally, the authors conducted interviews with students who attended Summer Bridge.

Stone, Engel, Nagaoka, and Roderick's (2005) work is different from the work of Roderick, Nagaoka, and Allensworth (2005) because the authors moved beyond achievement test scores to examine classroom processes in the Summer Bridge program. The authors provided insight into how summer programs operate within a high-stakes

standardized achievement testing context. Furthermore, it placed a great emphasis on the perspective of students. The authors explored how students describe academic expectations and personal connections during Summer Bridge. Additionally, the authors investigated to what extent descriptions of Summer Bridge differ from the traditional school year. Finally, the authors highlighted how perceptions of the Summer Bridge experience vary by student demographic and performance characteristics.

In order to better understand how students describe academic expectations and personal connections during Summer Bridge, to what extent descriptions of Summer Bridge differ from the traditional school year, and how perceptions of the Summer Bridge experience vary by student demographic and performance characteristics, the research used two data sources. Surveys were conducted with sixth- and eighth-grade students who attended Summer Bridge in 1999 as well as interviews that were a part of a multiyear evaluation of the district policies aimed at ending social promotion.

Roderick, Nagaoka, and Allensworth (2005) reported data revealing approximately three quarters of students describing Summer Bridge as a better experience than the normal school year. Additionally, three quarters of students reported working harder in Summer Bridge than during the normal school year. Finally, over eighty percent of students revealed that they worked harder during Summer Bridge than the normal school year. Students disclosed their belief that they worked harder during Summer Bridge because they felt that their teachers were more available during Summer Bridge than during the normal school year. Over eighty- five percent of students disclosed their belief that teachers had more time to help them during Summer Bridge than they did during the normal school year. Student interviews back up the data

reported from the surveys. Forty- eight students were in the Summer Bridge sample. Twenty- nine of the 48 students reported liking Summer Bridge.

Roderick, Nagaoka, and Allensworth (2005) argued that Summer Bridge offers a different learning environment than what students experience during the normal school year. The authors attributed this difference in learning environment to the change in student perceptions. Furthermore, the authors attempted to highlight, through student interviews, what factors play a role in students perceiving Summer Bridge in such a positive light during student surveys. The authors categorized 25 students (52 percent) as having a “positive experience.” In follow-up interviews, these 25 students reported that their Summer Bridge experiences were better than those during the school year. The 25 students touched on four characteristics of Summer Bridge that made it a positive experience. First, the students explained that their Summer Bridge teachers covered more content while delivering it in new and exciting ways. The students described this instruction as a more positive experience than the normal school year. Next, the 25 students noted that teachers slowed down the pace of instruction to make sure that all students understood the material. The students reported that this slower pace was vital to their understanding. Third, students explained that they were getting a lot of one-on-one time with their teachers. The students interpreted this one-on-one time to be an integral part of their success. Finally, the students noticed an improvement in places where they traditionally struggled during the normal school year. In conclusion, Roderick, Nagaoka, and Allensworth (2005) explored how much the group of students actually benefitted from Summer Bridge. One limitation of exploring this phenomenon is that there were only 25 students in the group who perceived their experience as positive. Regardless of

this small sample size, the authors reported less than half of the students (12 out of 25) from the positive experience group met the test score cutoffs after Summer Bridge.

One interesting note about the work of Roderick, Nagaoka, and Allensworth (2005) is that they made an interesting suggestion to school administrators about summer programs based on their findings. According to the authors, school administrators need to be cognizant of the potential costs of effective summer programs. The authors cited their qualitative findings during the student interviews. According to Roderick, Nagaoka, and Allensworth (2005), the students who described the most positive learning experiences in Summer Bridge almost always talked about the individualized attention and individualized pacing. Therefore, the authors suggested that less funding and increased class sizes would jeopardize the possible benefits of a summer program.

Roderick, Nagoka, and Allensworth's (2005) study presented quality research on the effectiveness of a summer school program. The authors analyzed the effect attendance had on students. Yet, their research did not address how the students who attended summer school did in comparison with those who were invited to summer school but did not attend.

The next study presented in this review of the literature is an important one. It is the first study presented that paid special attention to how students are invited to a summer intervention. Also, the next study presented compared two very similar groups of students. The next study is included in this review of the literature because it examines the decrease in academic skills over the summer months. Articles presented thus far have included ways that school districts and researchers have attempted to deal

with this decrease in academic skills over the summer months. The next article presented continues in the spirit of decreased academic skills over summer months.

Booil and Schacter (2005) analyzed a randomly assigned group of exiting first-grade children who were economically disadvantaged. The students were enrolled in a seven-week summer reading day camp. The authors compared the intervention students' reading achievement scores to control group participants at four time points (Booil & Schacter, 2005). Booil and Shacter's (2005) study was included in this review of the literature because the authors analyzed reading achievement. Furthermore, the authors randomly assigned the participants.

Booil and Schacter (2005) identified three weaknesses of traditional summer school programs. First, the authors noted that many summer school programs are not offered until after the third grade. Therefore, summer school teachers are presented with the challenge of making up four years of schooling in six weeks. Second, previous studies show American summer schools devote their time to remediating basic skills without making time for advanced instruction. Third, Booil and Schacter (2005) noted that traditional summer schools are plagued by poor attendance. In an Oakland, California summer school, 17,000 students were mandated to attend. Yet, only half of those 17,000 students attended (White & Johnson, 1999).

The three problems listed above were Booil and Schacter's impetus to create a summer reading day-camp intervention. The authors argued that reading programs during the summers after kindergarten and first grade are more successful than interventions that occur later in a child's schooling. Thus, the authors enrolled exiting

first grade students in the intervention. Second, the authors argued that all students who are economically disadvantaged, not just low performers, experience summer reading loss. Thus, the authors provided opportunities for all students who are disadvantaged to participate in the intervention. Third, the length of the intervention was seven weeks. The authors argued that designing an intervention provided more time to extend reading over the summer. Fourth, in order to guarantee that research-based teaching practices and effective curricula were implemented, the summer reading day-camp teachers taught direct, explicit and systematic decoding, comprehension, vocabulary, and writing skills. Finally, the students participating in the summer reading day camp were exposed to a context that was different from school. The summer reading day camp cultivated exploration, creativity, discovery, and play (Booil & Schacter, 2005).

As for Booil and Schacter's (2005) method, the authors randomly selected 162 first-grade students to participate in the study. The authors randomly assigned 72 students to the intervention and 90 students to the control group. The mean age was seven years and one month. Participants were drawn from three elementary schools where 100% of the students are eligible for free or reduced lunch. The schools were located in south Los Angeles. Ninety-seven participants were identified as African American and 65 as Hispanic. The intervention was conducted for seven weeks spanning the months of July and August. The summer reading day camp was five days per week from 8:00 a.m. to 5:00 p.m.

During the reading instruction, lessons were delivered by credentialed teachers using a commercially available curriculum and basal readers. Open Court Series is a reading curriculum that directly teaches phonemic awareness, phonics, vocabulary,

fluency and reading comprehensions skills. Booil and Schacter (2005) cited a study reported by Foorman, Fletcher and Francis (1998) that provides evidence for the effectiveness of the program. The reading instruction block was divided into 10 minutes of whole class story-book reading, 15 minutes of whole-class phonics instruction, 15 minutes of independent work activities, 10 minutes of paired reading, 40 minutes of small group reading, and 30 minutes of writing (Booil & Schacter, 2005).

In order to measure reading achievement, all students took the Gates-MacGinitie and Stanford Achievement Test assessments. The Gates-MacGinitie Word Decoding Levels 1 and 2 Form S is a 43-item sub-test of the Gates-MacGinitie that requires students to identify from among words that look alike the one correct word that fits the picture. The Gates-MacGinitie Comprehension Level 1 and 2 Form S is a 39 item sub-test of the Gates-MacGinitie that requires students to read stories and non-fiction passages each divided into short segments. The student's task is to choose the picture that illustrates a segment or answers a question about it. The Stanford 9 Decoding and Comprehension Primary 2 test consisted of 48 multiple choice items that assessed students' word study skills, and 40 items that assessed reading comprehension. Booil and Schacter (2005) pre-tested reading performance for decoding and comprehension in order to determine whether randomization was successful. Booil and Schacter (2005) examined the effect of the reading camp intervention based on students' performance on six post-test outcome measures. The authors controlled for the students' performance on the test measures. Although the outcomes were measured longitudinally, Booil and Schacter (2005) did not impose any trend in the analyses because the authors could not use comparable tests throughout the study. Therefore, the authors analyzed the data by

allowing for correlations between the outcomes measures under multivariate normality. In the multivariate regression analyses, six post-test measures were included as dependent variables, and four pre-test measures were included as covariates. Adjusting for the covariates, the mean difference between the two groups was defined as the intervention effect.

Booil and Schacter (2005) reported that the intervention had a significant effect on five of the six outcome variables. The effect sizes ranged from medium to large (0.47 to 1.35). In other words, the children in the intervention group performed significantly better than children in the control group on measures of decoding on immediate and three-month delayed post-tests, and on measures of comprehension on immediate, three- and nine-month delayed post-tests. Moreover, comprehension measured before the intervention had a significant influence on comprehension measured at post-test 2 (three-month delayed) for both control and intervention groups, but the effect was stronger for the control group.

Finally, the students who attended the summer reading camp saw their comprehension increase the equivalent of 41% when compared to controls directly after the program. Moreover, the same students maintained a 39% advantage for three months, and at the end of the year were performing 18% better than the control group. In terms of decoding, intervention students' advantage was 33%, 22% three months later, and 0% by the end of the study.

The authors concluded that their findings make several implications for practice. First, the authors suggested offering the summer reading day camp intervention to exiting

kindergarteners and second-grade students. Next, the authors suggested offering the intervention to children over the course of their first full three years of school. Also, Booil and Schacter (2005) made a suggestion that has not been proposed elsewhere in the literature: offer the intervention when the reading day campers returned to campus during the traditional school year. The authors suggested providing reading tutoring to the day campers during after school hours.

In the end, Booil and Shacter (2005) concluded that sending first-graders, who are economically disadvantaged, to a summer camp to teach them to read appears to be a promising method to prevent summer reading loss. The study is vital to this review of the literature because the authors specifically advocated for early intervention. Furthermore, the authors advocated for providing summer interventions to low-performing and economically disadvantaged students. Finally, this study is unique in that it called for extending summer intervention to seven weeks, rather than four. Also, the study is unique because it called for changing the context of the traditional summer intervention to a summer day camp setting. The 2005 study was important because the sample was selected at random and reading achievement was measured. However, the authors did not address how students from different socioeconomic backgrounds differed because the sample was homogenous.

The next study presented in this review of the literature is an important one. It is the first study presented that pays attention to students who were invited to a summer intervention, but did not attend. The authors described these students as invitees. Stevens and Zvoch (2011) conducted a study in an attempt to analyze the extent to which students voluntarily participate and the degree to which students and schools may benefit

from the provision of a supplementary summer program. The study is vital to this review of the literature because it is of high quality. Specifically, the study compared two important groups of students based on literacy assessments.

This study is of high quality because there are two similar groups of students that were analyzed. All of the students in the study were identified to attend the intervention because they did not meet a proficiency cutscore on the spring administration of a grade appropriate formative literacy assessment. The first group of students were invited and attended. The second group of students were invited and did not attend. These students were labeled as “refusers.”

The authors evaluated one district’s summer school initiative. The authors paid particular attention to documenting the characteristics of students who accepted or declined a summer placement as well as accounting for potential selection effects in models designed to estimate the short- and longer term efficacy of the intervention. The authors investigated selection and efficacy issues related to summer school implementation in a specific district. In an attempt to evaluate the short- and longer term impact of the program, multiple student cohorts were longitudinally tracked over portions of two academic years, and student eligibility and participation status were identified. The authors used a series of inferential models applied to literacy assessment scores. Furthermore, the authors used regression discontinuity models to estimate the change in summer literacy performance for attendees, invitees, and their counterparts at the cutscore used for offering a summer school placement. Furthermore, piecewise growth models were then used to compare the literacy growth of cutscore eligible program attendees and their cutscore eligible peers who declined to participate. The authors noted

that possible selection effects in the piecewise models were investigated and controlled using propensity scores from a logistic regression model designed to predict treatment compliance among eligible at-risk students.

The authors studied a school district where the aim of the summer program was to close the performance gap between strong and struggling readers and to ensure that struggling readers gained the foundational skills requisite to meet reading proficiency targets. The summer program was specifically designed to offer an academically intensive summer literacy program. The summer program was offered annually to early elementary school students who did not meet a proficiency cutscore on the spring administration of a grade appropriate formative literacy assessment. The summer program ran over a 5-week period during the middle of the 3-month summer vacation period.

Stevens and Zvoch (2011) noted that the district used scores on the Test of Oral Reading Fluency (TORF) to determine a student's eligibility for a summer school placement and to measure short- and longer term changes in oral reading fluency. The TORF is a standardized, individually administered assessment of accuracy and fluency with connected text that has been specifically designed and developed to identify struggling readers and allow for the monitoring of student progress over time. Students read three passages aloud for one minute. Word omissions or substitutions and hesitations of more than three seconds are scored as errors. The median correct words per minute, from the three passages, index the oral reading fluency rate.

Each academic year, the school district administers the TORF to first- and second-grade students in September, January, and May (Stevens & Zvoch, 2011). Next, students who correctly read fewer than 30 words per minute on the first-grade May assessment were considered to be at heightened risk for future reading difficulty. In turn, these students are offered the opportunity to attend the summer enrichment program. Additionally, the district had also relied on the professional judgment of teachers and administrators to refer students who score slightly above the 30 words per minute spring benchmark, yet may struggle with comprehending the text. Yet, due to budgetary constraints, the summer placements are offered only to students who are in most need of supplementary instruction.

The authors reported that across the four cohorts, 17% of students in the four, first-grade cohorts participated in the summer school program. A total of 66% of participants met the cutscore eligibility criterion. On the other hand, 83 students participated on the basis of administrative referral. Also, 37% of students who were cutscore eligible declined to participate.

Stevens and Zvoch (2011) examined the short- and longer term oral reading fluency outcomes for students in both cutscore eligible categories (participants and refusers). The results revealed that students scoring at the cutscore for admission had summer literacy outcomes that varied with respect to their participation status. Furthermore, relative to a nonparticipant peer who scored just below the cut for program admission, a participant was estimated to gain 5.8 more words per minute in reading fluency over the summer months. In addition, the use of piecewise growth models to examine the short- and longer term performance of cutscore eligible students revealed

that participants in the summer program increased their absolute and relative levels of oral reading fluency over the summer. However, summer school participants' rate of reading fluency increased at a slower pace than that of their noncompliant peers during the following school year. Therefore, Stevens and Zvoch (2011) concluded that supplemental summer instruction delivered to at-risk students may promote literacy gains during the otherwise challenging summer months. Thus, the summer school program could serve as a useful intermediary tool for K-12 stakeholders seeking to keep struggling readers on track toward proficiency.

The authors noted that the summer setback experienced by the non-treated, more reading fluent students in the study was dissimilar with the summer performance of advantaged students reported in other summer learning outcomes as cited earlier in this review of the literature (Cooper, Nye, Charlton, Lindsay, & Greathouse, 1996). More specifically, Cooper et al. (1996) found higher achieving students tended to maintain or slightly increase their levels across the summer months. On the other hand, Stevens and Zvoch (2011) reported stronger readers experienced a change in summer literacy more akin to that observed among struggling readers or disadvantaged students in other studies. The authors suggested that this discrepancy is likely due, at least in part, to the type and timing of assessments that were used in their study. Reading fluency measures can be more sensitive to practice effects than the achievement measures commonly used in other studies of summer learning outcomes.

In the end, Stevens and Zvoch (2011) contended that the results of their study demonstrated that student literacy development varies with respect to the receipt of supplemental summer instruction. The authors argued that their study highlights the

potential of using the summer vacation period as a tool for addressing No Child Left Behind accountability measures. Furthermore, the authors believed that the provision of targeted summer reading instruction may hold a further two-fold appeal for K-12 stakeholders seeking to provide an effective and equitable scholastic experience for students. First, the authors cited evidence, similar to what has already been presented in this review of the literature, that states reading trajectories establish early, become increasingly discrepant, and are often resistant to change (Alexander, Entwisle, & Olson, 2007). Therefore, Stevens and Zvoch (2011) believed that early and active intervention efforts in beginning reading can serve as a primary and vital way of addressing initial reading difficulties. Moreover, the interventions can be used to prevent early reading difficulties from compounding into long-term failure. Next, Stevens and Zvoch (2011) contended that a second appeal of offering summer reading instruction is how easy it is for educational leaders to convey the logic to active stakeholders. More specifically, educational leaders can readily understand that as a result of the school offering academically focused summer contact hours, students may have a clear opportunity to benefit from an extended flow of education as resources. In this case, the school learning “faucet” is not turned off during the summer months.

In conclusion, Stevens and Zvoch (2011) called for further study on school-based interventions that occur over the summer vacation. More specifically, the authors called for an examination of instructional practice and process that may vary across classrooms and treatment sites. Further detailed examination of summer interventions can be used to generalize findings from the Stevens and Zvoch study. The Stevens and Zvoch study conducted in 2011 is very important to this review of the literature because it is of high

quality. Specifically, the study compared two important groups of students based on literacy assessments. The authors paid special attention to a group of similar students who were identified to attend a summer intervention based on their performance on a reading assessment. This group of students were labeled as “invitees.” Then, the authors divided that group into two smaller collections. The first subset of students were invited to the intervention and attended. They were labeled “attendees.” The second subset of students were invited to the intervention and did not attend. They were labeled as “refusers.” In comparing these two subsets of students, the authors were able to pay specific attention to whether or not the summer intervention had an impact on the students.

The next study of this literature review is also from the Stevens and Zvoch. In this particular study, the authors examined the effect of assignment to and participation in summer school for two moderately at-risk samples of struggling readers (Stevens & Zvoch, 2013). The authors drew on their previous work, which was presented in the preceding section of this literature review. The authors noted that for researchers and evaluators, the inability to clearly separate instructional effects from the distinct background characteristics of summer school participants and their peers has served to weaken the inferences drawn from various field-based studies. Therefore, in their 2013 study, Stevens and Zvoch addressed the difficulty associated with comparing non-equivalent student groups. In order to compare non-equivalent student groups, they examined the relative efficacy of one summer school program using a unique source of data obtained in conjunction with a randomized field trial.

Stevens and Zvoch (2013) validated their research on summer interventions by citing evidence that has been presented in this review of the literature. More specifically, the authors referred to data that stated when averaged across content area and poverty level, student scores after summer are approximately a tenth of a standard deviation lower than before the beginning of the summer vacation period (Cooper, Nye, Charlton, Lindsay, & Greathouse, 1996).

Stevens and Zvoch (2013) cited evidence on academic trajectories that indicates that while students from divergent backgrounds typically acquire subject knowledge at a similar rate during the school year, summer learning outcomes are more apt to vary by content area and poverty level (Alexander, Entwisle, & Olson, 2007). Specifically, summer mathematics losses tend to be greater than reading losses and interactions with socio-economic status (SES) are common. Whereas high-SES students tend to make modest gains in reading and mathematics over the summer, middle-SES students maintain or slightly improve on pre-summer reading levels, but lose ground in mathematics. For low-SES students, losses in reading and mathematics are the norm.

Stevens and Zvoch (2013) pointed out one main flaw in previous research on summer school interventions. By virtue of using a need-based delivery model, evaluative comparisons between students who participate in school-based summer instruction and those who choose to attend summer school may be stronger than similarly achieving peers who are invited to summer school but decline to attend or fully participate. On the other hand, the performance of summer school attendees may be lower than their peers whose academic year achievement status was strong enough to prevent a summer school invitation from being offered. In either case, Stevens and Zvoch (2013) argued that the

non-random selection of students into conditions makes the unbiased estimation of summer program effects difficult.

In light of the evaluative challenge presented by non-equivalent control group designs, Stevens and Zvoch (2013) designed their study to implement a randomized field experiment in order to ascertain the efficacy of a summer literacy intervention delivered in a Pacific Northwest school district. A randomized design was implemented at the study site. A randomized design was used because prior investigation of the literacy intervention, as presented in the previous section of this literature review, using quasi-experimental regression discontinuity methods indicated that program participation not only offset summer reading losses but was associated with summer reading gain (Stevens & Zvoch, 2011). Furthermore, at the cutscore for the program admission, summer oral reading fluency gains were positive. Moreover, the summer oral reading fluency gains were approximately .40 of a standard deviation higher for students who attended summer school relative to their non-participant peers. Stevens and Zvoch (2013) note that despite the use of regression discontinuity models in the 2011 study to account for the need-based assignment of students, concerns related to the clarity of the assignment cutscore as well as the generality of inferences across a wider reading proficiency range provided the motivation for further investigation.

In the current study being reviewed, Stevens and Zvoch (2013) designed the study to examine whether children assigned to summer school acquired literacy skills at a faster rate than comparable children not assigned to summer school. Furthermore, the current study aimed to uncover if participation in summer school was requisite to promote differential summer literacy programs. Finally, the current study intended to illuminate

whether the application of different analytic models resulted in different summer learning estimates.

Similar to the 2011 study, Stevens and Zvoch (2013) studied a school district where the aim of the summer program was to close the performance gap between strong and struggling readers and ensure that struggling readers gain the foundational skills requisite to meet reading proficiency targets. The summer program was specifically designed to offer an academically intensive summer literacy program. The summer program was offered annually to early elementary school students who did not meet a proficiency cutscore on the spring administration of a grade appropriate formative literacy assessment. The summer program ran over a 5-week period during the middle of the three-month summer vacation period. Instruction occurred for 3.5 hours per day over the course of a four-day week with small class sizes of less than 20 students per class. Furthermore, students receive a minimum of two hours of teacher-directed daily reading instruction into the critical beginning reading skills of phonemic awareness, alphabetic understanding, and fluency.

Stevens and Zvoch (2013) noted that the district administers a series of grade specific assessments each academic year. In kindergarten and first grade, the district administers select subtests of the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) as well as the Test of Oral Reading Fluency (TORF). The DIBELS nonsense word fluency (NWF) subtest is administered to kindergarten students in January and May. In first grade, the NWF is administered three times (September, January, May). The TORF is added to the assessment schedule of all first-grade students during the

January assessment window. Thereafter, the TORF is administered in September, January, and May each academic year (Stevens & Zvoch, 2013).

Both DIBELS' NWF and the TORF are standardized, individually administered and age-appropriate early literacy skill assessments. The assessments have been developed to identify struggling readers and allow the monitoring of student progress over time. More specifically, DIBEL's NWF is a one-minute assessment designed to measure students' understanding of the alphabetic principle. Students are presented with randomly ordered nonsense words and are asked to orally reproduce the letter sound combinations. The final score is the number of correct letter sounds produced in one minute (Good & Kaminski, 2002).

The TORF is designed to measure students' accuracy and fluency with connected text. Student performance is measured by having students read each of three passages aloud for one minute. Then, word omissions or substitutions and hesitations of more than three seconds are scored as errors. In the end, the median correct words-per minute from the three passages serves as the oral reading fluency rate.

Stevens and Zvoch (2013) used student NWF and TORF performance to determine summer school placement and to evaluate the efficacy of summer instruction. The authors used the change in literacy performance between the final assessment in one academic year (May) and the first assessment in the next (September) to serve as the outcome. The kindergarten sample evaluations were conducted using the difference between spring of kindergarten and all of first grade NWF scores. On the other hand, the

difference of TORF scores between spring of first grade and the fall assessment of second grade served as the outcome for the first-grade sample.

In the past, the district where the study was conducted had offered a need-based summer school placement to students who fall below benchmark performance on the spring literacy assessment. Additionally, in some special cases, students are invited through teacher recommendation. More specifically, kindergarteners who produce fewer than 25 nonsense-words-per-minute on the spring NWF subtest are invited to participate in the summer literacy program; first graders who produce less than 30 correct words-per-minute on the spring administration of the TORF are invited. The kindergarten and first grade benchmarks have been established for conceptual and practical reasons.

Stevens and Zvoch (2013) analyzed program effects from literacy data obtained from two student samples. The samples were comprised of students that either finished kindergarten or first grade during the 2009-2010 school year. The students completed district literacy assessments during the spring and fall of 2010. The two samples contained relatively equal percentages of students from special populations. The percentage of boys (55%), English language learners (15%) and free-lunch recipients (63%; a SES proxy) were equivalent while the percentage of students from ethnic-minority groups ranged from 19% in the kindergarten sample to 25% in the first-grade sample(Stevens & Zvoch, Summer school effects in a randomized field trial, 2013).

Stevens and Zvoch (2013) reported that the student samples were generally more disadvantaged than the larger student body as a result of the selection of students identified as at moderate-risk for developing future reading difficulties. Yet, based on

how the students were selected for the intervention, the district's most-challenged students were not included in either the kindergarten or the first-grade sample.

Therefore, the authors noted that the struggling early-elementary school readers studied were not as low performing as those examined in other studies that have focused exclusively on students at greatest risk of negative summer outcomes. Furthermore, despite the relatively high percentage of free-lunch recipients included in the samples, the poverty conditions found in the community where this study took place are not to the same degree as found in larger urban environments. Thus, Stevens and Zvoch (2013) admitted that students in their study have an academic and economic-risk profile that is less-severe than typically found in other need-based summer school investigations.

In Stevens and Zvoch's 2011 study, students who correctly read fewer than 30 words per minute on the first-grade May assessment are considered to be at heightened risk for future reading difficulty. In turn, these students are offered the opportunity to attend the summer enrichment program. Additionally, the district has also relied on the professional judgment of teachers and administrators to refer students who score slightly above the 30 words per minute spring benchmark, yet may struggle with comprehending the text. Due to budgetary constraints, the summer placements are offered only to students who are in most need of supplementary instruction. On the other hand, in Stevens and Zvoch's 2013 study, the program was systematically expanded through a collaborative university-school district partnership in order to examine the effect of offering supplemental instruction to a wider range of students. At each grade level, an interval with a lower bound at the grade-specific spring-benchmark that was historically used by the district was identified. Then, the district established an upper bound based on

student risk levels and the funding available for program expansion. Given available resources, a target of 25 additional students per grade was established and corresponding intervals that contained approximately 50 students were identified. For kindergarten, the interval ranged from a lower bound of 25 to an upper bound of 35 nonsense words-per-minute. For first grade, the interval ranged from a low of 30 to a high of 50 words correctly read-per-minute. Students projected to score within each of these intervals on their respective spring assessment formed the assignment pool. Then, within the pool, students were randomly selected to receive an invitation to summer school or to serve in a no-treatment control group. Stevens and Zvoch (2013) note that all students who scored below the historic kindergarten and first-grade cutpoint for program admission were invited to participate in summer school as well with cutscore eligible participants instructed in separate groups.

Stevens and Zvoch (2013) created dummy codes to form two summer status indicators to estimate and compare student literacy outcomes. The first indicator distinguished between students who were randomly assigned to summer school (whether they attended or not) and their peers who were in the assignment pool, but did not receive an invitation to attend. This was the control group. The authors used this contrast to create an Intent-to-Treat (ITT) estimate of the summer school effect at each grade level. A second set of dummy codes was then used to distinguish between treatment participants, refusers and students in the control group. The authors used two dummy codes to represent the three groups with the control group serving as the comparison group. The authors used this specification to facilitate the estimation of a Treatment-on-Treat (TOT) contrast between treatment participants and control group students.

The authors conducted a series of ordinary least squares (OLS) regression models to identify the extent to which assignment to and participation in summer school was associated with students' summer learning. The authors ran separate models at each grade level because the summer performance of students was evaluated using different literacy outcome measures (i.e., DIBELS' NWF at kindergarten, TORF at first grade). OLS regression models were estimated rather than multilevel models as students in the control group were not nested in an identifiable higher unit of organization during the summer. The first regression model yielded a conservative ITT estimate contrasting the summer gains of those assigned to treatment (whether they participated or not) with the summer gains of the control group. The ITT analysis was used to provide a policy-relevant estimate of the treatment effect that takes into account that not all of the students will participate when a given program is offered. The second regression model yielded group specific contrasts between treatment participants and controls. In the reported analyses, group difference estimates are provided in raw and standardized units.

After the estimation from the OLS models was made, a supplemental analysis was conducted to further evaluate the effects of summer school participation and to correct for potential bias in the estimation of program effects resulting from treatment of non-compliance. In the supplemental analysis, the authors used weighting methods to correct the ITT estimates derived from the OLS regression models. Weighting the ITT estimates by the proportion of treatment group members who actually received treatment, the impact of "no shows" (students who were assigned to treatment but refused to participate in summer school) was taken into account.

Intent-to-treat (ITT) analyses were first conducted to compare all students who were randomly assigned to summer school (whether or not they participated) to their peers. Results indicated that the group of students assigned to summer school outperformed their peers on DIBELS' NWF between kindergarten and grade 1. Also, results indicated that the group of students assigned to summer school outperformed their peers on the TORF between grades 1 and 2. Differences in summer performance were more pronounced when actual participants (those who were assigned and participated in summer school) were compared with students in the control group. Supplemental compliance-adjusted analyses that corrected for the potential bias associated with non-compliance among the group of students assigned to summer school yielded treatment effect estimates intermediate between the ITT and TOT estimates.

Students in the control group showed mean declines of approximately five words-per-minute over the summer in both samples (NWF scores in the kindergarten sample, TORF scores in the first-grade sample), while participants had fluency gains of approximately 12 (nonsense) words-per-minute in summer following kindergarten and 7.5 words-per-minute in summer following first grade. Also, the authors found that no learning differences were observed between students who refused summer placement and students assigned to the control group. Therefore, the authors believe that assignment to summer school in and of itself (i.e., intent-to-treat) was not sufficient to promote summer gains. Thus, Stevens and Zvoch (2013) concluded that targeted summer instruction can be an effective strategy to support student learning over the summer months.

Next, Stevens and Zvoch (2013) argued that the performance gap that emerged in literacy scores at the start of the new academic year between moderately at-risk readers

with different summer treatment classifications (i.e., participants, refusers, and controls) is an indicator of the potential that summer instruction holds for those who participate in a school-based supplemental support program. However, questions regarding the absolute and relative effects of providing treatment to more advantaged recipients have been raised. More specifically, concern has been expressed that the delivery of treatment to higher performing or less-disadvantaged groups of students may serve to further exacerbate preexisting performance gaps (Ceci & Papierno, 2005). This concern was validated by the Stevens and Zvoch (2013) study. The contention was supported by high-risk students who were invited to and participated in summer school as a result of scoring below the literacy cutscore for program admission. In summary, Stevens and Zvoch (2013) reported that the mean literacy gap between the moderate (randomly assigned summer school participants) and the highest risk summer school participants increased from 15 to 22 nonsense words-per-minute from the end of kindergarten to the beginning of first grade (moderately at-risk reader advantage). Furthermore, Stevens and Zvoch (2013) found the gap in oral reading fluency increased from 27 to 34 words-per-minute from the end of first grade to the beginning of second grade (moderately at-risk reader advantage). Stevens and Zvoch (2013) cautioned against findings that demonstrate an increase in the achievement gap between moderate and high-risk students. The authors reminded educational leaders to be cautious in the allocation of summer placements. The authors encouraged school districts to closely examine how they identify students to attend summer school if a central goal of the provision is to help lower achieving students keep pace or close the gap with their more advantaged peers.

In the end, Stevens and Zvoch (2013) found summer literacy gain experienced by school participants and the literacy loss experienced by their non-treated peers to be consistent with prior evidence presented in this review of the literature. Specifically, Stevens and Zvoch (2013) reported results consistent to the kindergarten and first-grade students who were randomly assigned to summer reading programs in Los Angeles (Jo & Schacter, 2005) and Baltimore (Borman & Dowling, 2006). Much like the Jo and Schacter (2005) study, treatment participants in the Stevens and Zvoch (2013) study gained literacy skills over the summer and demonstrated higher proficiency on a key literacy measure (relative to their control peers) at the beginning of the following academic year. Furthermore, Stevens and Zvoch (2013) reported that demographic background characteristics were not predictive of summer literacy outcomes among moderately at-risk readers. This finding was similar to studies already presented in this literature review (Borman & Dowling, 2006).

Stevens and Zvoch (2013) warned against the size and strength of the summer reading fluency outcomes that they reported. The authors readily admitted that the outcomes reported are in line with the instructional intervention delivered to the students. The summer literacy intervention in this particular study was marked by explicit, fluency-focused instruction in small group environments by highly trained and experienced instructors who utilized best practice teaching strategies according to a scripted instructional framework. The scripted instructional framework was taken from National Reading Panel recommendations. Stevens and Zvoch (2013) observed little deviation from program protocol within the intervention and between instructors. They argued that the strength and consistency of the instructional dose delivered to students in this study

separates the findings from other studies that have provided remedial instruction disconnected from the academic year curriculum. These studies, presented earlier in this review of the literature, may have been less aligned to student needs.

Furthermore, Stevens and Zvoch (2013) warned against the size and strength of the fluency outcomes they reported due to the congruency between the fluency-development instructional emphasis and the fluency-based measures that served to index summer learning gains and losses. For instance, the exclusive use of assessments that were sensitive to changes in reading fluency and closely aligned with the instructional model may have contributed to the discrepancy in the size of reported effects. Simply put, with the use of outcome measures estimate effects (NWF & TORF) that are directly related to program activities were likely larger and less reflective of a child's total reading ability than those that would have followed had individual change on a somewhat more distal and comprehensive reading measure (Stevens & Zvoch, Summer school effects in a randomized field trial, 2013). The authors suggested a norm-referenced reading comprehension or vocabulary measure. Furthermore, Stevens and Zvoch (2013) noted the close alignment between the fluency outcomes and the instructional focus of the study as a limitation because it does not fully measure a child's comprehensive reading ability.

Another limiting feature of the Stevens and Zvoch (2013) study was the small size of the sample. There were fewer than 100 moderately at-risk participants making, the sample size much smaller than that used in the Teach Baltimore Summer Academy study that was presented earlier in this review of the literature.

In the end, Stevens and Zvoch (2013) concluded that their results suggest that literacy instruction delivered during the summer months can positively impact the reading fluency gains of struggling readers. The authors argued that the positive results associated with the probabilistic assignment of students to conditions serves to strengthen the inferences that can be drawn regarding the effects of providing strong summer reading instruction. Stevens and Zvoch (2013) readily admitted, however, that the unique characteristics of their study, its context, intervention, sample, and measurement characteristics caution against drawing general conclusions regarding the potential power of summer instruction, especially instruction delivered to students from more diverse backgrounds. Therefore, the authors called for further study of summer schools using a more-comprehensive reading measure.

In conclusion, the second part of this literature review is key to framing the study. It is organized around two common themes that are related to summer learning. These themes are vital to the framework of the study. The first issue is the decrease in academic skills over the summer, with special attention paid to the fact that this is mostly true for low SES students and students of color in reading achievement. Articles presented in this section included ways that school districts and researchers have attempted to deal with this decrease in academic skills over the summer months. The second issue is the limitations of the summer school programs that exist and the limitations of research for evaluating these summer programs. Research presented in this section included the problem that non-attendance creates with program effectiveness and research. More specifically, the problem of non-attendance amongst students who are identified as eligible candidates for summer programming, invited to a summer program, and do not

attend the summer program. The two aforementioned themes help frame to background and purpose for the study.

CHAPTER 3

METHODOLOGY

Overview

Student learning paths are mostly progressive during the academic year. On the other hand, the paths flatten or become negative during the summer months according to SES (Alexander, Entwisle, & Olson, 2007). The Every Student Succeeds Act aims to narrow the SES achievement gap (Klein, 2017). Therefore, school districts have been tasked with reducing this achievement gap. Also, school districts are legally responsible to guarantee that all children succeed. Therefore, it is in the best interest of school districts to address the summer achievement learning slide. In an attempt to address summer achievement slide, some school districts have implemented summer programs designed for students who are most at-risk of losing ground over the summer (Stevens & Zvoch, Summer school effects in a randomized field trial, 2013).

In an attempt to allocate precious resources on students who are in most need of supplemental instruction, school districts across the country have adopted targeted summer programs (Stevens & Zvoch, Summer school effects in a randomized field trial, 2013). Therefore, it is vital to evaluate summer programming in a manner that aims to clearly separate instructional effects from distinct background characteristics of summer school participants and their peers. Also, there needs to be more research conducted on how students who attend summer school achieve compared to their non-participating peers. Thus, there is a need for comparing groups of students who are invited to summer

school and chose to attend versus groups of students who are invited to summer school and do not attend.

In short, summer programs are increasingly popular. Yet, a comprehensive review of the literature has revealed a reoccurring weakness in the methodology. There is little evidence, which is sound, to support the effectiveness of summer programs for students who attend versus students who are invited but do not attend.

The second theory that guides this theoretical perspective stems from the work of Stevens and Zvoch's study from 2011 and 2013. The studies were the first, under the umbrella of summer school research, to theorize that there needs to be a comparison between two very important groups of students. The first group of students that the authors used in the comparison were identified as eligible candidates for a summer reading intervention. Their candidacy was based upon their performance on a literacy assessment that was administered during the school year. There were certain criteria set forth by the school district in the study that determined if a student was in need of literacy intervention. The students who belonged to this first group attended the summer intervention. The second group of students, in the comparison, were also identified as eligible candidates to attend the summer intervention. Their candidacy was also based upon their performance on the literacy assessment that was administered during the school year. Therefore, the second group of students were also invited to the summer literacy intervention. Yet, the second group of students did not attend the summer intervention.

Program Description

The purpose of this study was to measure the effectiveness of a summer school program for students who attend versus students who are invited but do not attend. Also, a comprehensive review of the literature has revealed a reoccurring weakness in the methodology. Several summer school studies rely on the use of one group of students who are analyzed before and after the interventions. The program took place at the XYZ school district. There are approximately 5,200 students in the XYZ School District. Approximately 15% of the students receive free or reduced lunch. Ninety percent of the students are White/Caucasian. Less than 10% of the students identify themselves as African American. Less than 10% of the students identify themselves as Hispanic/Non-white. The district is located in a working class suburban area less than 100 miles from a major northeast city.

The XYZ School District's summer program spanned the course of two weeks. Students were identified for invitations based on RTI screening. Students received small group intensive tutoring in reading that was designed to prepare them for the upcoming school year. There were four, 1-hour sessions that were offered daily in an attempt to best accommodate parent schedules. Parents could enroll their children in any of the four 1-hour time slot sessions. Parents had to provide roundtrip transportation for their child. The session times were from 8:15-9:15 AM, 9:25-10:25 AM, 10:35-11:35 AM, and 11:50-12:50 AM. The program utilized research-based intervention lessons in a

structured, sequential method according to the district's Fountas and Pinnell reading curriculum. Students were encouraged to attend all of the days.

Design of the Research

The XYZ school district did not set a target number of students to be selected for the summer intervention. Rather, the district created guidelines for teachers to recommend students for the intervention based on data from spring assessments. The data were collected during the spring administration of the Fountas and Pinnell Benchmark Assessment. The Fountas and Pinnell Benchmark Assessment was designed for school districts to collect reliable evidence of student competencies and reading levels so that teachers can begin teaching where learners are. The Fountas and Pinnell Benchmark Assessment helps identify the optimal instructional level. It also provides in-depth knowledge of student reading behaviors. The Fountas and Pinnell Benchmark assessment, that was administered in the spring is directly linked to the Fountas and Pinnell Text Level Gradient. In other words, Fountas and Pinnell has created Reading Level Letter Indicators that match up with their Text Level Indicators. Therefore, if a student is assessed in the spring and it is determined that his reading level is "A," then he will be matched with books that are at an "A" level.

In order to be identified for the summer reading program, in kindergarten, the students identified had a reading level at the level C or below. For first grade, the cut-off reading level was I. In second grade, the level was L. In third grade, the level was O. In fourth grade, the level was R. In fifth grade, the level was U. Finally, in sixth grade, the level was X. Also, students were invited if they fell into the Tier II or Tier III levels for

intervention. RTI, response to intervention, is a process used by educators to help students who are struggling with a skill or lesson. The teachers will use interventions, or a set of teaching procedures, with any student to help him or her succeed in the classroom. RTI is for all students, it is not specific to students with special needs or a learning disability. It is a knowledge base, skills, and a service delivery system that is intended to provide an educational experience to all students. An educational experience that is focused on delivering effective education and intervention programs and on frequent progress monitoring of student outcomes using those measured outcomes (RTI) to adjust and change programs and interventions (Prasse, 2017). Moreover, RTI is a vital part of a problem-solving service delivery system. Delivering scientifically based interventions with integrity and frequently monitoring how the student responds to those interventions can help provide data in order to guide educators in their quest to tailor or sustain interventions in a timely fashion. One main difference between an RTI approach and a learning disability label is that RTI keeps the focus on where professional resources need to be applied, which is student outcomes.

There are three tiers to the RTI approach. In Tier 1, students receive high-quality, scientifically based instruction. Yet, this instruction is differentiated, in the regular education classroom, to meet their needs. Moreover, students who are in Tier 1 are screened and assessed on a periodic basis to identify struggling learners who may need additional support. In Tier 2, students not making adequate progress in the core curriculum are provided with increasingly intensive instruction matched to their needs on the basis of levels of performance and rates of progress. In Tier 3, students begin to receive individualized, intensive interventions that target the students' skill deficits for

the remediation of existing problems and the prevention of more severe problems (Prasse, 2017).

Students who fell within each of these intervals on their respective spring assessments formed the invitation pool. Then, within the pool, students either accepted the invitation to summer school and created the treatment group or refused the invitation to summer school and served in a no-treatment control group.

In order to evaluate the impact of the summer program at the XYZ school district, two student cohorts were tracked over the portions of two academic years. Student eligibility status and participation status were identified. A series of inferential models was applied to their literacy assessment scores on the Fountas and Pinnell measurement instrument.

This analysis may be used to provide a policy-relevant estimate of the treatment effect that takes into account that not all of the students will participate when a given program is offered.

Participants

Subjects were identified in the spring of 2013, 2014, and 2015 by the XYZ school district. The students were identified and labeled as being eligible for an invitation to the summer program. The school district recruited students according to their existing protocol and procedure. Students were invited based on participation during the school year in the reading support programs or the kindergarten LAMS program.

Students entering grades 1-7 were invited to attend if they were in need of reading intervention (Tier 2/3 or LAMS) and were below reading benchmarks as indicated below.

The following ELA guidelines were used for recommending students based on data:

Table 3.1

ELA Guidelines For Recommending Students

	Reading Level is below:	And...
Kindergarten	C	Has also been a tier 2, tier 3, or LAMS student for more than ½ a year for <u>reading goals</u>
Grade 1	I	
Grade 2	L	
Grade 3	O	
Grade 4	R	
Grade 5	U	
Grade 6	X	

Invitations were also extended to learning support students with reading concerns and had English Language Arts goals in their IEP's. Since Extended School Year (ESY), a program for students with IEP's, overlapped with the summer program, many students

may have missed week 1 of the summer program if they attended ESY. This program was not intended as a special education extended year program.

Students received small group tutoring in reading designed to improve literacy. Four, 1-hour sessions were offered daily for the program. The group sizes were very small so that each student received individual attention. The teachers used differentiated learning activities to meet the needs of each individual student. Students attended a 1-hour session. Parents had to provide round trip transportation daily.

Variables

In order to analyze the research questions, the following data were collected:

- Student identifier (gender)
- Formative Reading Assessments over the course of three years
- Demographic Information
 - Gender
 - Race
 - Grade Level
 - SES data were not collected on students. In the end, the XYZ school district would not share confidential data about free and reduced lunch. Therefore, SES was not in the analyses.

Validity, Reliability, and Instrumentation

A benchmark assessment is a series of texts that can be used to identify a student's current reading level and progress along a gradient of text levels over time (Fountas and Pinnell Literacy, 2017). Benchmark literally means a standard against which to measure something. The Fountas and Pinnell Benchmark Assessment Systems (BAS) are valid because they evaluate student reading and comprehension ability with reliable and robust universal screening that is aligned to the Leveled Literacy Intervention System. Moreover, it determines each child's instructional level for guided reading according to the Fountas and Pinnell Text Level Gradient (Fountas and Pinnell Literacy, 2017). The Fountas and Pinnell Text Level Gradient is a continuum of progress for readers. Fountas and Pinnell Text Level Gradient levels match up with specific years in school (kindergarten through high school). There are approximately four Fountas and Pinnell Text Level Gradient letters that match up with each specific grade level. The levels in the Fountas and Pinnell Text Level Gradient refer to the difficulty of books in relation to other books placed along a continuum from A-Z, easiest to hardest.

The Fountas and Pinnell benchmark assessment is unlike many traditional and computerized assessments, which are taken in isolation. Fountas and Pinnell benchmark assessment conferences give the teacher a chance to spend time with each student. Teachers gather critical information and students have the opportunity to read several books. One full assessment of a student typically takes 20-30 minutes.

The Fountas and Pinnell Benchmarking Systems are reliable because there are precise steps for the assessment conferences described in the Assessment Guides and are systematically presented on the Recording Form for each book. Teachers are required to keep their own language spare and to avoid teaching or leading the student to specific

answers. The introduction to the Benchmark Assessment books are standardized and printed on the cover as well as on the Recording Form. The steps for administration, scoring, and analysis are all standardized and explained in detail in the Assessment Guides. Also, the tools supporting the assessment (F&P Calculator/Stopwatch, the Coding and Scoring at-a-glance chart, and the comprehension conversation rubrics) provide an easy way to maintain consistency across assessments and help teachers better understand the steps in the process. Finally, there are Professional Development Videos that aim to provide a clear examples and practice opportunities for developing precision and consistency throughout the assessment conferences.

Texts are leveled using a highly reliable process in which teams of trained teachers, working independently and then through consensus, assign a level to books after analyzing them according to the ten factors. They are then analyzed by Fountas and Pinnell. The Benchmark Assessment books were actually created to precisely match the F&P Text Level Gradient, and they were independently analyzed using the same process.

Yet, in the end, assessment data must be valid for the purpose for which educators use them (Burns, Helman, Klingbeil, & McComas, 2015). Klingbeil et. al (2015) examined the predictive validity and the diagnostic accuracy of the Fountas and Pinnell Benchmarking Assessments Systems (BAS) and two other universal screening measures in reading. The authors compared the scores on the different universal screenings with nearly 500 second- and third-grade students from four different public schools. According to Klingbeil et al , (2015) the test-retest reliability from fall to spring was .86.

CHAPTER 4

RESULTS

Descriptive Data on the Sample

As mentioned in Chapter 3, the data set involved three years of results from the summer programs of 2013, 2014, and 2015. Descriptive data on these students are contained in Table 4.1, 4.2 and 4.3.

Table 4.1

Sample Description By Grade Level

Grade	2013		2014		2015	
	Attended (n = 126)	Did not Attend (n = 382)	Attended (n = 138)	Did not Attend (n = 376)	Attended (n = 103)	Did not Attend (n = 304)
K	23	62	34	81	12	38
1	21	40	27	45	18	29
2	13	44	15	50	35	61
3	18	52	12	47	13	36
4	22	54	15	44	12	49
5	17	74	16	50	8	46
6	12	56	19	59	5	45

Table 4.2

Sample Description By Gender

	2013		2014		2015	
	Attended	Did not Attend	Attended	Did not Attend	Attended	Did not Attend
Gender	(n = 126)	(n = 382)	(n = 138)	(n = 376)	(n = 103)	(n = 304)
Male	80	221	76	226	62	185
Female	46	161	62	151	41	119

Table 4.3

Sample Description By Race

	2013		2014		2015	
	Attended	Did not Attend	Attended	Did not Attend	Attended	Did not Attend
Race	(n = 126)	(n = 382)	(n = 138)	(n = 376)	(n = 103)	(n = 304)
1	1	3	0	1	0	2
3	3	44	9	51	3	51
4	5	5	3	11	4	7
5	106	310	121	289	89	233
6	2	11	2	13	4	6
9	9	9	3	11	3	5

The sample data show that there were consistently more males than females that attended the summer program. Also, most students who were invited to the summer program described themselves as white/not Hispanic. Over the course of the three years where data were collected on the study, there was a slightly declining participation rate.

Overview of the Data Analysis

There were two types of analyses conducted on the data. First, the data across all years and all grade levels were aggregated to produce one summary analysis. However, the comparability of the data across grade levels is somewhat questionable due to the nature of the test used. Consequently, the data were analyzed again but this time separately by grade level. In both cases the analysis involved a two-way, repeated measures analysis of variance—Time (October/May) by Attended (Attended/Did not Attend). This analysis tests three questions. These analysis questions are not the research question. Rather, they are specific considerations made to address the research question. The analysis questions are as follows:

- Do the students, in general, change between the first and second test administration?
- Is there a difference between students who attended the summer sessions and those who did not attend, summed across the two test administrations?
- Is the pattern of change between the two test administrations different for students who attended the session and those who did not attend?

Of the three, the final question, which refers to the interaction between Time and Attended, is the critical test. If attending the summer session had a significant effect, then the students who attended would improve more between October and May as compared to the students who did not attend. The .05 level of significance was used for all analyses. However, since the sample size for all of the analyses is large, statistical significance is relatively unimportant. What is presented, therefore, is partial eta squared which is the commonly used measure of effect size in ANOVA designs. As generally used, the following metrics are applied to this statistic:

.00 to .05 Small

.06 to .09 Medium

.10 and above Large

Total Data Set

The means for the total data set are presented in Table 4.4

Table 4.4

Mean Scores For October And May For All Students

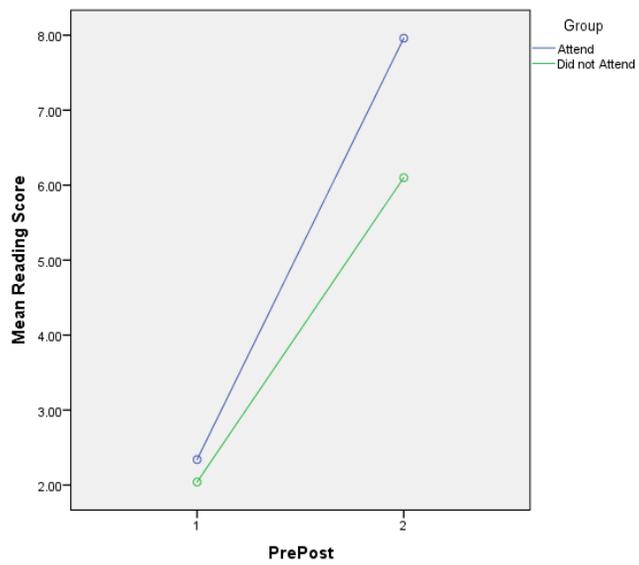
	October	May
Attended	2.34	7.96
Did not Attend	2.04	6.10

The ANOVA summary table is presented in Table 4.5

Table 4.5

Repeated Measures ANOVA Results For Kindergarten

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Oct/May	1	9.87	345.96	.000	.45
Attend/Not	1	.354	19.872	.000	.062
Interaction	1	.435	18.7756	.000	.069



A Plot Of Interaction Is Presented In Figure 4.1.

Table 4.6

Simple Effects Analysis For The Significant Interaction

Attended versus Not Attended in October:	.034
Attended versus Not Attended in May	.000
Attended- October to May	.000
Not Attended- October to May	.000

As shown in Table 4.6, the students who attended the summer program had a marginally higher mean in October and a much higher mean in May. In addition, both groups significantly improved between October and May.

Analyses by Grade Level

As mentioned above, two-way repeated measures ANOVAs were conducted for each grade level separately. These results are presented below. To help compare the different results, the means and ANOVA results are presented first. At the end, graphic presentations of the data are presented together.

Kindergarten:

Table 4.7

Mean Scores For October And May For Kindergarten Students

	October	May
Attended	.00	.34
Did not Attend	.00	.22

Table 4.8

Repeated Measures ANOVA Results For Kindergarten

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Oct/May	1	10.572	427.926	.000	.60
Attend/Not	1	.486	19.465	.000	.067
Interaction	1	.503	20.372	.000	.064

First Grade:

Table 4.9

Mean Scores For October And May For First Grade Scores

	October	May
Attended	.45	1.49
Did not Attend	.40	1.39

Table 4.10

Repeated Measures ANOVA Results For First Grade

Source	Df	Mean Square	F	Sig.	Partial Eta Squared
Oct/May	1	266.598	3672.236	.000	.860
Attend/Not	1	1.68	9.017	.003	.004
Interaction	1	.165	2.272	.132	.015

Second Grade:

Table 4.11

Mean Scores For October And May For Second Grade Scores

	October	May
Attended	1.49	2.44
Did not Attend	1.39	2.29

Table 4.12

Repeated Measures ANOVA Results For Second Grade

Source	Df	Mean Square	F	Sig.	Partial Eta Squared
Oct/May	1	246.510	1951.219	.000	.737
Attend/Not	1	4.974	9.729	.002	.002
Interaction	1	.199	1.575	.210	.014

Third Grade:

Table 4.13

Mean Scores For October And May For Third Grade Scores

	October	May
Attended	2.42	3.21
Did not Attend	2.15	3.04

Table 4.14

Repeated Measures ANOVA Results For Third Grade

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Oct/May	1	178.479	693.010	.000	.479
Attend/Not	1	11.773	10.749	.001	.019
Interaction	1	.629	2.124	.146	.003

Fourth Grade:

Table 4.15

Mean Scores For October And May For Fourth Grade Scores

	October	May
Attended	3.18	4.03
Did not Attend	3.05	3.93

Table 4.16

Repeated Measures ANOVA Results For Fourth Grade

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Oct/May	1	1080.893	480.794	.000	.425
Attend/Not	1	3.031	2.188	.140	.003
Interaction	1	.068	.186	.667	.000

Fifth Grade:

Table 4.17

Mean Scores For October And May For Fifth Grade Scores

	October	May
Attended	3.94	4.81
Did not Attend	3.61	4.55

Table 4.18

Repeated Measures ANOVA Results For Fifth Grade

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Oct/May	1	194.947	183.942	.000	.479
Attend/Not	1	3.031	2.188	.140	.003
Interaction	1	.006	.006	.938	.003

Sixth Grade:

Table 4.19

Mean Scores For October And May For Sixth Grade

	October	May
Attended	4.90	5.71
Did not Attend	4.73	5.50

Table 4.20

Repeated Measures ANOVA Results For Sixth Grade

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Oct/May	1	119.908	125.591	.000	.184
Attend/Not	1	6.876	2.372	.124	.004
Interaction	1	.097	.102	.750	.000

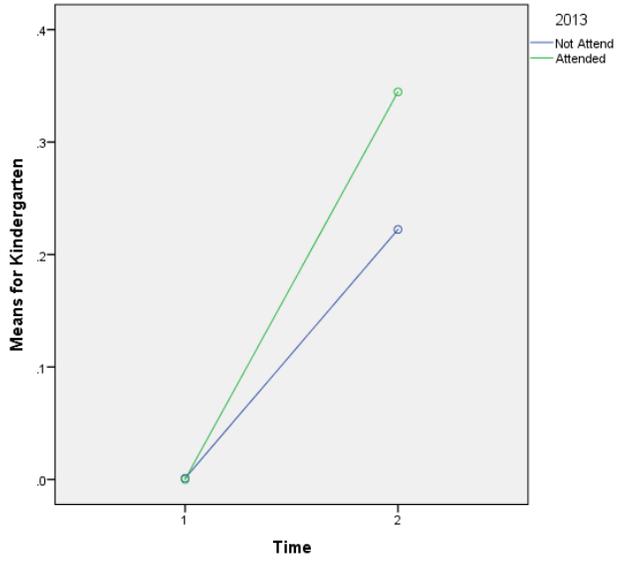


Figure 4.2 Comparison Of Means For Kindergarten

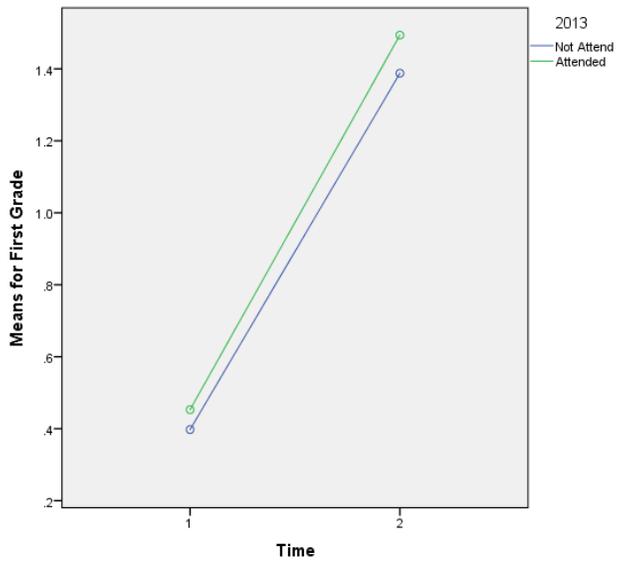


Figure 4.3 Comparison Of Means for First Grade

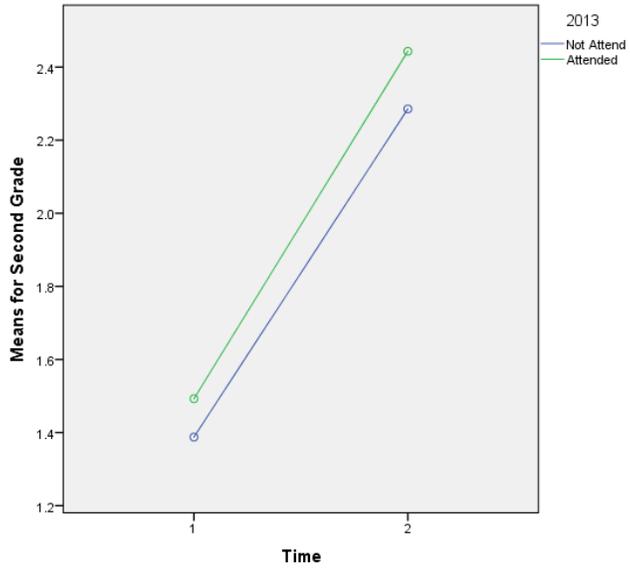


Figure 4.4 Comparison Of Means For Second Grade

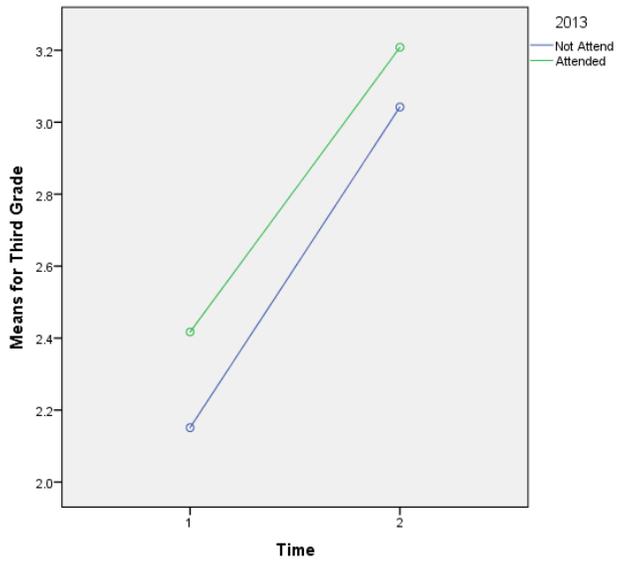


Figure 4.5 Comparison Of Means For Third Grade

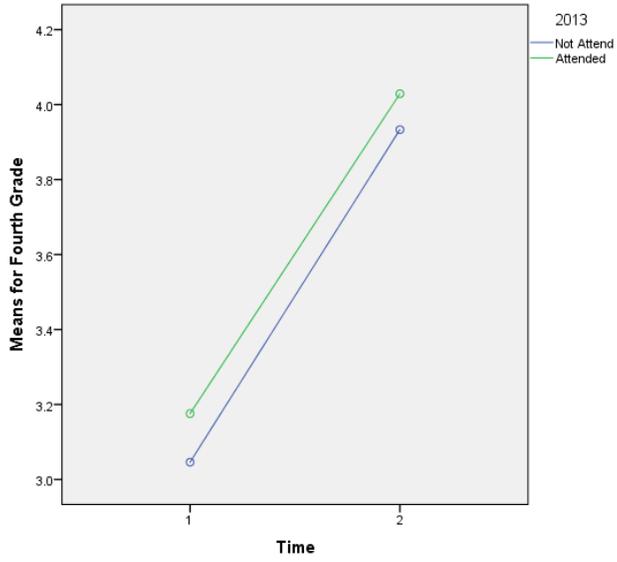


Figure 4.6 Comparison Of Means For Fourth Grade

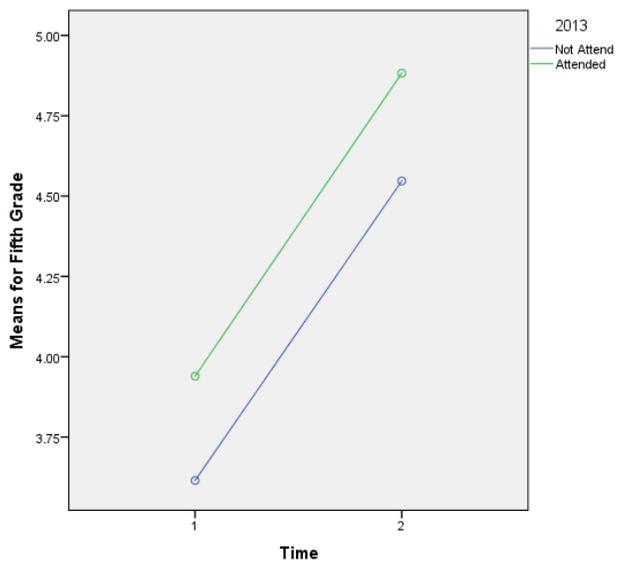


Figure 4.7 Comparison Of Means For Fifth Grade

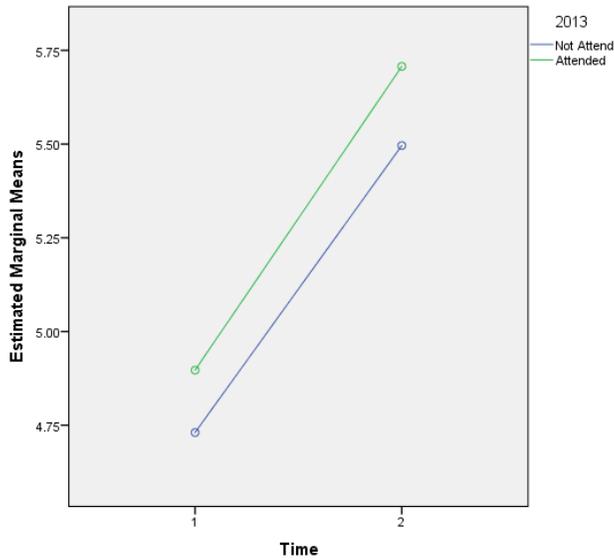


Figure 4.8 Comparison Of Means For Sixth Grade

As shown in the above graphs, the pattern of the results is essentially the same for all grade levels. Specifically, the students who attended the summer program have a significantly higher reading score in October as compared to the students who did not attend the program. This achievement difference is maintained throughout the school year. Also shown is that both groups significantly improve between October and May. The sole exception to this are the results for Kindergarten students. In this case, the difference between the students who attended and those who did not increases between October and May.

CHAPTER 5

SUMMARY AND CONCLUSIONS

Summary

Over the course of an intensive two-week period in the beginning of August, students who attended the summer program at the XYZ School District met in small groups with a teacher or reading specialist for concentrated reading instruction. The purpose of the study was to either validate the place of a summer program within the XYZ School District's budget and curriculum, or provide a critique of the summer program and offer suggestions of how to make it more effective. The study was designed to answer a research question in order to better understand the achievement gains, or lack thereof, of students who were invited to the program. Specifically, the research question was as follows:

- Does the summer program produce significant reading achievement gains in eligible participants, and are these gains significantly different from the gains in eligible non-participants?

The research question and design were planned to provide insight into how the summer program impacted reading achievement of students who attend the program. The reading achievement of students who attended the summer program was compared to students who were invited to the summer program, but did not attend. In order to specifically analyze the aforementioned groups of students, through the lens of summer

program effectiveness, the Fountas and Pinnell benchmarking instrument was used.

Fountas and Pinnell data included in this study came from a district data warehouse that had information available for each student during the 2013, 2014, and 2015 school years. The analysis of the Fountas and Pinnell test data provided a comparison of reading achievement differences among the students who attended the program and those who did not attend. The analysis was done by grade level and was summed across the three years of the study. A repeated measures ANOVA was conducted. The data were collected in the beginning of the year, usually in October, within two months of the summer reading program, and again at the end of the school year in May. Since all of the data were analyzed by repeated measures ANOVAs, the terms tested by this analysis are presented below, followed by an overview of the results.

Addressing the Analysis Questions

- (1) Do the students, in general, change between the first and second test administration?
- (2) Is there a difference between students who attended the summer sessions and those who did not attend, summed across the two test administrations?
- (3) Is the pattern of change between the two test administrations different for students who attended the session and those who did not attend?

Of the three, the final question, which refers to the interaction between Time and Attended, was the critical test. If attending the summer session had a significant effect, then the students who attended would improve more between October and May as compared to the students who did not attend.

Do the students, in general, change between the first and second test administration?

For all of the grade levels tested there was a highly significant main effect for time of testing with a large effect size. Specifically, the students' reading scores improved between the fall administration of the Fountas and Pinnell reading assessment and the spring administration. Simply put, almost all students, regardless of whether or not they attended the summer reading program, show improvement during the time in between assessments when they are in school. As mentioned in the Theoretical Framework section, the Faucet Theory states that opportunities to make learning gains and have access to educational resources are turned on during the traditional school year (Cooper, Charlton, Valentine, & Muhlenbruck, 2000). This "faucet" of educational resources is turned on for all students regardless of race, ethnicity or socioeconomic status. Therefore, learning gains made during the traditional school year are nearly the same for students of different races, ethnicity and socioeconomic status (Entwisle, Alexander, & Olson, 1997). The Faucet Theory supports the fact that all learners made gains over the course of the school year, at the XYZ School District, when the "faucet" was turned on, and all learners had access to educational resources and opportunities.

Is there a difference between students who attended the summer sessions and those who did not attend, summed across the two test administrations?

The analysis of the Fountas and Pinnell reading assessment data revealed that there was a statistical difference in the test scores of the students who attended the summer reading program compared to those that did not attend. That statistical difference showed that students who attended the program scored higher on the Fountas

and Pinnell formative reading assessments than did students who did not attend the program during the October assessment. Therefore, it can be concluded that attending the summer reading program lessened the decrease predicted by Faucet Theory and referred to as the summer learning slide. The summer learning slide is defined as a regression that takes place during the summer months, when school is not in session and the faucet of educational resources is turned off, resulting in a slide in achievement levels.

Thus, when the analysis revealed that students who attended the program started off the school year in October at a higher level than students who did not attend the program, it can be concluded that the students who attended the summer reading program did not slide backwards as far as their peers because the faucet of educational resources was not turned off. This difference can be attributed to the fact that the summer reading program students continued to receive educational resources even when the traditional school year had ended. This finding falls in line with the Faucet Theory that was presented in the Theoretical Framework section of the study because the analyses show that the students who continued to receive educational resources over the summer, at the summer reading program, started the year at a higher reading level. Therefore, unless the student was in kindergarten, he or she had experienced less of a summer slide while school was technically “out” and started the year in October at a higher level than their non-participating peers.

Is the pattern of change between the two test administrations different for students who attended the session and those who did not attend?

Students who attended the summer reading program maintained their difference in reading achievement level over the course of the school year, in between October and May. It can be concluded that attending the summer reading program set forth a difference in reading achievement that was maintained throughout the school. This factor has major implications. Students who attend the summer program, year in and year out, will stop sliding over the course of the summer. Moreover, they will slowly separate themselves from their non-participating peers each year that they attend the program. Therefore, the same students who were once identified for the summer program, because of their reading achievement levels, may one day achieve at a level where they no longer need to be invited to the summer program. Moreover, these same students will be less likely to need special education resources. In the end, this will save the XYZ School District money in the long run.

The only exception to the basic pattern was for students in kindergarten. For these students there was no difference in October, but a significant difference in May in favor of students who attended the summer program. This may be attributed to the fact that the kindergarten students started out with a mean of zero. In other words, the students started out at nearly the same point because the test was not able to assess them in reading at this point. However, the fact that the students in the program increased more between October and May is clear support for the effectiveness of the summer reading program.

Limitations

Although the results of this research are in clear support of the summer reading program, there are a few limitations that need to be considered. First, there were some

figurative “holes” in the data gathered from the data warehouse. Also, information about which students received free and reduced lunch was kept private by the school district. These two limitations should be considered when interpreting the results of the research questions. Specifically, the second limitation was an issue during this study. One key element to the Faucet Theory, mentioned in the Theoretical Framework section of this study, was that the educational faucet of educational resources is only turned off for students with low socioeconomic standing. Therefore, a major limitation of this study was not having access to free and reduced lunch status. It was a limitation because subgroups of students could not be created based on SES. Therefore, it was impossible to analyze student reading achievement based on attending the summer reading program as well as SES.

Another major limitation of the research was that it was not possible to conduct a longitudinal analysis of the data due to limitations in the data set. Because of this at least one critical question could not be answered. Specifically, it is not known if the students who attended the summer reading program were different from those who did not attend before the program began. It is possible that those students who attended were reading at a higher level than those who did not attend. If this was the case, then the difference found for these students in the academic year following the summer program was mostly due to initial differences rather than to the impact of the program.

Future Research and Recommendations for Practice

In an era where school budgets are already stretched thin, it can be difficult to make a strong argument for a reading program that takes place during the summer

months. Moreover, it can be difficult to make an argument for a summer reading program that is not mandated by state or federal requirements. Yet, the summer reading program provided an excellent intervention for the students who attended. It is well-worth the cost. Moreover, the structure of the summer reading program at the XYZ School District can be repeated at any school district across the country. Therefore, it is recommended that this program be implemented in other districts.

The population of struggling readers who attended the program realized the fruits of this program. Moreover, it is possible to maintain, or even make gains to, reading achievement in a relatively short, albeit intense, amount of time. In about two weeks' time, the findings show that the summer reading program worked and should be maintained in an effort to help students in need of reading instruction. The program should continue to be implemented in the future.

There are two recommendations for future research. First, it would be valuable to follow these students, who attended this program, for more than three years. Specifically, it would be interesting to analyze the students who continue to attend the summer reading program year-in and year-out. Do the students who continue to attend the program out-achieve their non-participating peers over the course of a five-year time frame? Or is there some type of achievement fatigue or an achievement plateau that begins to occur? Moreover, to what extent do students who participate in the summer reading program out-achieve their non-participating peers? Specifically, how much higher are students who attend the program, on the Fountas and Pinnell text gradient scale, than their non-participating peers?

The second recommendation for future research is simple. It would be important to better understand how students respond to the summer reading program when sorted by socioeconomic status (SES). Specifically, do low SES students, who attend the summer reading program, lose less ground during the summer months than their non-participating low SES peers? This would be a vital litmus test to defend the Faucet Theory. This recommendation would be as simple as acquiring permission from the XYZ School District to access which students receive free and reduced lunch. If this information can be obtained, student achievement according to SES could be analyzed. An analysis of student achievement over the summer months, according to SES, could have major implications to the XYZ School District. If it is found that low SES students, who attend the summer reading program, achieve more and lose less ground over the summer months, then the district might decide to invite students to the summer reading program with special attention paid to SES. Therefore, the Faucet Theory would be realized. Specifically, if educational resources remain turned on over the course of the summer for low SES students in the XYZ School District, then there would be no achievement gap for these same low SES students. This analysis is important because it demonstrates that low SES students and the schools that serve them are more than capable of closing the achievement gap.

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