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The Impact That The Power Scholars' Academy Program Has On The Achievement Of Students In Reading And Math

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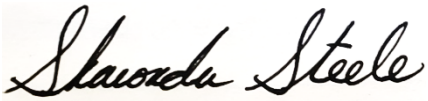
X 

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BY

SHARONDA STEELE

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DEDICATION

I am humbly grateful to my Lord and Savior Jesus Christ from which all blessings flow, for allowing me to live to see the other side of the rainbow and have this incredible testimony of my academic career.

I dedicate this work to my family and many friends. Those who have been a constant source of support and encouragement during the challenges of graduate school and life. To my village who has encouraged me to pursue my dreams and finish my dissertation, those who and kept me on track even when I wanted to give up. To all of those who prayed for me and stood in the gap when times were difficult, and this journey seemed as if it would never come. To my committee chair and members, thank you for your support and guidance during this process. After all the challenges I experienced you helped me get to the finish line and for that, I am thankful.

To all the students that I have ever worked with, many of whom, I saw myself in their eyes. Those who despite challenges continue to press on and continue working to achieve their goals. This is our victory!

To my children Emmanuel, Jalen, and Jordan who have been affected in every way possible by this quest but still loved and supported me during this journey. You three are my life, and the main reason that I worked so hard to make this dream come true. If a small piece of this endeavor inspires you, it would have all been worth it.

I remember a quote by Dr. Martin Luther King Jr. that said, “You don’t have to see the whole staircase, just take the first step,” so I encourage everyone reading this to do the same.

Abstract

The purpose of the study is to examine the impact of a summer learning loss prevention program that is designed to improve the academic achievement gap. The target population for this research study was participants of the Power Scholars Academy (PSA) program. PSA is a collaboration of BellXcel, local school districts, and community organizations. BellXcel as the creator of the program, provided the curriculum for extended learning opportunities during out of school time. For this study, BellXcel partnered with the school district located in the second largest county in the Commonwealth of Kentucky. The study analyzed 1,567 students who participated in the PSA program between 2017-2021. Participants came from low-income communities in Kentucky with many scoring in the low fortieth percentile on their Measure of Academic Progress (MAP) test. The aim of the study is to examine the impact that the PSA program has on the summer learning of students. Data used for the study was pre-existing and provided from BellXcel. The following dependent variables were evaluated in the study: (1) pretest scores, (2) post-test scores, and (3) the correlation of the summer test scores, and the demographics of the population will be examined. A causal-comparative research design was used for the study to seek to find the relationships between independent and dependent variables within this quantitative research study. Study findings concluded the PSA program had a positive impact on overall student achievement in both literacy with +1.05 - +3.7 months'' growth and +1.5 - +5.88 months'' growth in math. Therefore, this study provides insight into how summer learning programming can work to mitigate learning loss for students and close the achievement gap.

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I. Introduction

The purpose of the study is to explore summer learning loss and how it adversely affects the academic achievement gap. A review of the literature indicates that engaging students during the summer can positively impact academic achievement. Still, the educational benefits may vary by student based on socioeconomic factors and program design (David, 2010). Summer camps focus on teaching, modeling, and practicing social skills that most schools cannot teach (Monke, 2015). They are often venues for growth that allow children to become independent and self-confident while socializing with others, making new friends, and learning new skills (Ryan, 2019). However, what happens when students do not participate in summer learning experiences?

Historically, from the spring to fall semester, students who are not engaged in experiential learning typically fall behind during the academic school year due to a loss in learning over the summer break. The lapse in learning during the summer leads to failing grades and low test scores, which contributes to the academic achievement gap. For example, attending a summer program annually for as little as five weeks for two consecutive years could result in about a quarter of a year's gain in reading and math skills for students from lower socio-economic statuses (Chenoweth, 2016). The variants in a student's summer learning experience during their primary school years can affect whether they ultimately earn a high school diploma and matriculate to college (Alexander et al., 2001).

This study examined summer learning loss and how it contributes to the academic achievement gap. The study explored a summer learning loss prevention program and

provided research addressing whether summer learning loss prevention programs positively impact the achievement of students in the subject areas of reading and math. Although there is extensive research on the achievement gap and summer learning loss, there remains a dearth of evidence-based curricula designed to improve both areas. The study will provide literature that extends prior research on evidence-based summer programing that works towards mitigating learning loss for students.

Background to the Study

For decades students from poor and working-class backgrounds tend to experience summer learning loss, which is defined as a drop in performance between the spring and fall semesters and serves as a barrier for learners by widening the achievement gap between students (Kuhfeld, 2019). Known as the summer slide, during the summer, a child can regress 2-3 months'' in reading levels; this means that a child could start school in September at the same reading level they were at in April of the previous school year (Robinson, 2016). Noticeably, as the summer slide widens over time, the academic achievement gap increases. Key reasons for this problem emerged from the research included limited resources due to a student's socio-economic status and ethnic background (Bakle, 2010). Families from low-income communities had higher rates of summer learning loss than their counterparts from higher-income communities primarily due to limited summer learning opportunities and resources. Although there were no definitive research on when summer learning loss became a matter of concern, research shows the correlation between summer learning loss and the academic achievement gap, a term coined in *The Coleman Report* in response to the Civil Rights Act of 1964 from the United States Congress (Downey & Condron, 2016).

Having access to a variety of summer learning programs and educational enrichment opportunities, students are more likely to retain the information they learned in school, as well as learn new skills; therefore, summer programs are key in the nation's efforts to address loss.

Theoretical Basis for the Study

The theoretical perspectives of this interpretive study were described through the framework lens of Human Capital Theory (HTC). The concept of human capital was introduced by J. Mincer in 1958, when he developed the model of earnings called the Mincer earnings function that explained wage income as a function of schooling and professional experience (Mincer, 1958). In 1960-70s, Theodore Schultz, carried out the economic research in the United States and underdeveloped countries. He showed that education was the most important factor in ensuring productivity in the American economy (Galiakberova, 2019). Their studies on the function of schooling, experience, and earnings developed the foundations of human capital theory; its framework examined the relationships between education, economic growth, and social well-being (Netoch, 2016).

The connection between the participants analyzed in the study and the theoretical framework included: (1) participants fall within a specific socio-economic status, (2) participants' academic access largely depends on policy which includes funding for the school district and national intervention strategies, and (3) communities with lower economic stability are largely determined by race for many participants within the study. For example, the participants who live in and attend schools in low-

income communities consist of a large population of students who identify as black, indigenous, and people of color (BIPOC).

The primary investigator (PI) focused on examining the impact that the preventative learning program, BellXcel, has on the summer learning of students from low-income backgrounds. The following dependent variables were evaluated in the study and used to operationalize student academic success: (1) pretest scores of participants upon entry of the program, (2) post-test scores at the end of the program, and (3) correlation between socio-economic status, gender, race, and the ethnicity of the participants. It is important to understand the significance of an underrepresented minority (URM) student because addressing summer learning loss offers the opportunity to increase the academic persistence and long-term success of URM students.

Problem Statement

Studies show a direct correlation between summer learning loss leading to low academic achievement, low high school graduation rates, and high dropout rates for students from low-income backgrounds. It is well-known that summer learning loss is one of the most significant causes of the academic achievement gap between higher and lower-income children in the United States (Strauss, 2015). This makes summer learning loss one of the primary factors of the academic achievement gap adding to a continuous cycle of poverty.

Vulnerable Populations Affected Lead to Self-Care

It is alleged that self-care for students ages 6 to 12 increases during the summer months'' due to isolation; reportedly 11% of children from low-income backgrounds

spend an average of 10 hours a week on their own while not enrolled in school (Hartel, 2017). The National Survey of American Families reported 3.3 million 6- to 12-year-old students regularly take care of themselves without adult supervision during the summer, as well as after-school during the academic year (Vandivere et al., 2003). This conundrum is also known as "latchkey" and places children at a higher risk of accidents and injuries due to a lack of appropriate supervision (Venter & Rambau, 2011). It was found that latchkey children are more at risk of experiencing the negative effects of being in self-care than supervised children (Prema, 2019).

Research provides evidence that students experience summer learning loss because of the lack of involvement during the long summer breaks, which would serve as a bridge from one academic year to the other. Summer engagement activities for children differ because of barriers which include but are not limited to socio-economic status, geographical location, and family demographics (Garcia & Weiss, 2017). Summer options available to middle and upper-class families such as camps, summer jobs, and sports programs are often not affordable or accessible in poor neighborhoods, therefore limiting the scope of experiential learning and/or a safe place to go while parents are at work or otherwise occupied (Falkenburger, 2012). With an average of $958.00 per child related to summer expenses, as reported in 2014, parents who could not afford summer camps or programs were forced to leave their children home alone with family members or local neighbors (Dell'Antonia, 2016).

The magnitude of this problem is such that the federal government created mandates to address the gap by implementing the Elementary and Secondary Education Act of 1965, "No Child Left Behind" and the "Race to the Top;" however, despite

enormous expense and effort, the country has yet to resolve its student achievement problem (Gratz, 2001) so the gap persists. Without ongoing opportunities to learn and practice essential skills during the summer months'', students will continue to fall behind on measures of academic achievement over the summer months''.

High-quality summer learning programs position students for success in secondary education, postsecondary education, and life in general, which is especially true for low-income, minority students (McCombs et al., 2011). Improving the effects of the summer slide may potentially lead to improving our nation's long-standing academic achievement issues. Therefore, this study aims to provide a deeper understanding regarding the necessity of summer learning loss prevention programs, as well as to provide another plausible avenue on improving the scholastics of disadvantaged student populations and the continued need to close the achievement gap.

Purpose Statement of Research

The purpose of the study is to assess the model of a summer learning loss prevention program designed to address the academic achievement gap. Effectively addressing the achievement gap requires systematic attention and school and community partnerships that cultivate activation of a community's civic capacity (Stone, 2001). The study will utilize preexisting data from BellXcel program participants to answer the research questions.

Significance of the Study

The study consisted of participants in a summer learning loss prevention program called Power Scholars Academy (PSA), created by BellXcell. This quantitative research study investigated the reading and math scores of 1,567 students

selected from 2017-2021 from the second-largest county in Kentucky. Isaacs (2012) affirmed that the loss in summer learning varies across grade levels, subject matter, and family income, and widens the already existing achievement gap. All of which contribute to the high school dropout rate (NSLA, 2009) for at-risk kids and underpin that a few months'' off in the summer can lead to major setbacks in school, including loss of knowledge and lower test scores. The persistent achievement gap is caused by a gap in opportunities due to systemic and institutional inequalities in resources and supports that have been shown to improve educational outcomes (Johns & Jones-Castro, 2016). While not directly correlated to poverty, many of these students, unfortunately, fall through the cracks and wind up in the crevices of America's achievement gap (Anderson, 2017). Two-thirds of income-based achievement gap is attributed to summer learning loss; coincidently, students who experience summer learning loss are, on average, two years behind their peers (Greenman, 2015). By addressing summer learning loss, educators can narrow the academic achievement gap among disadvantaged students and provide the opportunity to increase the academic persistence and long-term success of students who are a part of an achievement gap group.

Rationale for the Study

Historically, research created an expectation that such gaps would close over generations in a competitive economy if educational and labor market opportunities were equalized (Grissmer & Eiseman, 2008). It is increasingly apparent that performance gaps by social class take root in the formative years of a child's life and fail to narrow in the years that follow. That is to say that children who start behind stay behind; they are rarely able to make up the lost ground (Garcia & Weiss, 2017).

The gap begins in elementary school (some argue sooner) and continues to persist throughout the student's secondary educational career, which produces a difference in high school graduation rates, college and career attainment, and ultimately socio-economic status differences that become a continuous cycle (Slavin & Madden, 2006). Starting summer interventions in earlier years increases a student's opportunity to be successful throughout their academic journey. A well-designed summer program can help low-income students become proficient in reading and math (Miller, 2007) as well as other subject areas. It has been shown that attending a summer program regularly for as little as five weeks for two years consecutively could result in about a quarter of a year's gain in both reading and math for students from low-income families (Chenoweth, 2016). If the differences in a student's summer learning experience affect the trajectory of their academic and economic makeup, that makes summer learning loss one of the essential pieces to overall achievement. Therefore, the examination of the study is imperative to not only address the academic achievement gap but the overall success of students.

Methodology

The purpose of the quantitative research study is to assess the growth of reading and math of the Power Scholars Academy participants. The study further demonstrates the relation between test scores and income, race, and gender of the program participants to see if a correlation exists. The study is imperative because it could assist policy makers and education administrators by providing information that would help make decisions about academic programs, structures, and funding that support the decrease of summer learning loss and closure of the academic achievement gap.

Research Question

The following research question guided this study:

1. Does the summer learning loss prevention program, Power Scholars Academy have a positive impact on the achievement of program participants in literacy/reading and math?

Assumptions, Limitations, and Delimitations

Interruptions in learning such as summer breaks are key factors to the achievement gap broadening (Alexander et al., 2007). Supplemental learning programs such as summer camps and exploration programs improve literacy and math achievement and serve as an aid towards closing the achievement gap (Kidron & Lindsey, 2014). Providing effective instruction during the summer months'' will increase students' performance during the academic school year, but not without the following limitations: (1) due to funding, there are a limited number of participants in programs each year, (2) participants in need of services, may not take advantage of summer opportunities when they are provided, (3) sustained funding for the continued operations of summer programs, and (4) outside factors that affect the achievement gap when summer learning loss prevention programs are offered, such as lack of resources to include transportation for families to actively participate in summer programs. The study is intended to be empowering in that it will focus on preventative summer programs designed to address efforts towards closing the achievement gap.

Definition of Terms

Common Core: An educational initiative for K–12 that focus on close reading of informational texts, inquiry learning, and college and career readiness with an emphasis on assessment and accountability (Dickinson et al., 2015).

Data-Driven Instruction: Using assessment data to determine instruction in the classroom (Larson, 2018).

Differentiate Instruction: The tailoring of instruction to meet the individual needs of the student (Tomlinson, 2019).

Faucet Theory: Opportunities to learn and have access to educational resources are turned on for all children during the school year; however, when school is not in session during the extended June to August summer recess, the school resource faucet is turned off, creating inequalities in educational opportunity and outcomes (Kim, 2004).

Formative Assessment: Monitor student learning to provide ongoing feedback that can be used by instructors to improve their teaching and by students to improve their learning (Eberly Center Carnegie Mellon University, 2021).

Growth Mindset: Belief that basic skills can be developed through dedication and hard work (Ed Glossary, 2013).

Every Student Succeeds Act: Law for all public schools signed by President Obama in 2015. The law holds schools accountable for how students learn and achieve (ESSA, 2019).

No Child Left Behind: Increased the federal role in holding schools responsible for the academic progress of all students by putting a special focus on ensuring that states and schools boost the performance of certain groups of students, such as English-

language learners, students in special education, and poor and minority children, whose achievement, on average, trails their peers (Klein, 2018).

Race To the Top: United States Department of Education's competitive grant created to spur and reward innovation and reforms in state and local district K-12 education. Signed by President Obama in 2009 as a part of the American Recovery and Reinvestment Act (Federal Education Legislation, 2019).

Response to Intervention (RTI): Response to intervention (RTI) aims to identify struggling students early on and give them the support they need to thrive in school (Morin, 2021).

Star Assessment: Computer adaptive test that provides teachers with learning data in reading and math for students. The test pinpoints students' strengths and deficiencies and offers specific insight into which areas need improvement (Renaissance Learning, 2014).

Summary

Summer learning loss is one of the primary causes of the academic achievement gap. Research shows that during the school year students learn at similar rates, however, over the summer, students who do not have access to continued learning opportunities fall behind in learning compared to their more affluent peers. This lapse in learning leads to failing grades and low-test scores and contributes to the academic achievement gap, which grows wider each year. Regression during the summer months'' is known as the summer slide. The Summer slide alleged that students who are not academically engaged in learning (formal or informal) during the summer could start school in September at the same reading level they were at in April of the previous school year.

The study has identified that socio-economic status and ethnic backgrounds are key factors that contribute to the summer learning loss and, ultimately, the academic achievement gap. Disadvantaged students with the lack of summer opportunities suffer from inactivity and isolation, which causes them to fall behind when the academic year resumes after the summer break.

Theoretical aspects of human capital theory were also analyzed in the study. Connections included all participants within the study who were of a low socio-economic status and lived-in low-income communities where schools required funding for national intervention; these aspects fueled the purpose of the study. The research study examined students that fit within the theoretical aspect and identified growth or regression as students participated in a summer learning loss prevention program. The study examined test scores in reading and math through pre and post-test and correlations between test scores and socio-economic status, race, and gender, to thoroughly investigate the impact that the summer learning loss prevention program had on the program participants in reading and math.

This chapter has provided an introduction. In Chapter 2, the researcher will investigate summer learning loss, the achievement gap, government-mandated programs, new ways to engage student learning, and methods of enhancing the educational success for all students.

II. Literature Review

According to the National Summer Learning Association, studies show that the magnitude of summer learning loss varies significantly by grade level, subject matter, and family income. Most importantly, research identifies the cumulative effect of summer learning differences as a primary cause of widening of school achievement gaps between students by family income (NSLA, 2009). A study published in the American Education Research Journal followed students in grades first through sixth over the course of five summers to measure summer learning. The study used data from the Northwest Evaluation Association that included 200 million test scores for 18 million students in 7,500 school districts (De La Rosa, 2020). Results of the study showed that 52% of students lost an average of 39% of their total school year gains during the summer months'' (NSLA, 2009).

Exploring how summer learning loss contributes to the academic achievement gap requires understanding the systematic framework and context in which the gap has stood for decades. This chapter details summer learning loss, the origin of the achievement gap, how summer learning affects the gap and will analyze the systematic aspects and subgroups that have contributed to the gap.

Background

Studies found that most students received lower scores on the same standardized tests at the end of summer vacation than they earned at the beginning of the summer term (Afterschool Alliance, 2010; McLaughlin & Smink, 2009; Wongkee, 2010). Research from the Stanford Center for Education Policy Analysis states that the achievement gap narrowed sharply in the 1970s, but progress then stalled. Achievement

gaps grew larger in the late 1980s and the 1990s, but since the 1990s, the achievement gap in every grade level and subject matter has been declining. As of 2012, the white-black and white-Hispanic achievement gaps were 30 - 40% less than they were in the 1970s; nonetheless, the gaps are still exceptionally large, ranging from 0.5 to 0.9 standard deviations (Stanford CEPA, 2021).

Researchers have concluded that the variance in achievement between low-income students and their more affluent classmates is due to inequities in their experiences during the summer months'' (Blazer, 2011). This conclusion is based on studies that indicate that children in all income groups learn basic skills at similar rates during the school year; however, low-income children's skills regress more than those of middle and high-income children during the summer. This occurrence is called the opportunity gap (Alexander et al., 2007; Chaplin & Capizzano, 2006; Miller, 2007; Terzian et al., 2009; Von Drehle, 2010). The opportunity gap refers to the fact that the arbitrary circumstances in which people are born, such as their race, ethnicity, and socio-economic status, determine their opportunities in life, rather than all people having the chance to achieve to the best of their potential (Mooney, 2018).

Some argue about semantics not substance, but in substantial ways, language informs interpretation and interpretation informs substance, achievement gap or opportunity gap (Leonardatos & Zahedi, 2014). The two go hand and hand because the achievement gap exists because of the lack of opportunity. Some are intentional about the use of the word opportunity instead of achievement because the opportunity or lack thereof encompasses many things including education, it focuses on systematic access to resources that could lead to the sufficiency or deficiency of academic achievement.

Achievement gaps are all about outcomes; the results of the educational system, with metrics like standardized test scores, grades, course-taking, and graduation rates (McClellan et al., 2018), however, the term opportunity gap refers to the ways in which race, ethnicity, socioeconomic status, English proficiency, community wealth, familial situations, or other factors contribute to or perpetuate lower educational aspirations, achievement, and attainment for certain groups of students (The Glossary of Education Reform, 2013). The opportunity gaps illuminate the impact of inequities in resources and access on children's lives and their educational experiences. These differences can limit their acquisition of the knowledge, skills, and dispositions, essential for post-secondary life and the ability to contribute to the communities in which they live (McClellan et al., 2018).

This is significant to educators and policymakers because addressing the root of the opportunity gap increases the chances of improving the academic achievement gap. Educators addressing the areas that affect the opportunity gap can narrow the academic achievement gap among disadvantaged students. Narrowing the academic achievement gap offers the opportunity to increase the academic persistence and long-term success of students who usually have a difficult time in educational settings (Porter, 2015). Recent research has suggested that the apparent widening of inequalities is an artifact of the way children's ability is measured and analyzed (Quinn, 2015; Von Hippel, 2019). The National Summer Learning Association asserts on its website that the cumulative effect of summer learning loss is a crisis in the making. By the fifth grade, summer learning loss can leave low-income students two-and-a-half to three years behind their peers (NSLA, 2020).

A student who can't read on grade level by 3rd grade is four times less likely to graduate by age 19 than a child who does read proficiently by that time (Hernandez, 2011). Three out of four low-income children in the U.S. fail to meet standards for mathematical proficiency in the fourth grade, as do 43% of middle-income children (McFarland et al., 2017). Early difficulties in mathematical understanding can diminish children's likelihood of success in advanced mathematics coursework in the later grades, which is a pivotal gatekeeper to science, technology, engineering, and mathematics (STEM) careers (National Science Board, 2008). Given the significant wage premium of STEM employment, unequal access for children from economically disadvantaged backgrounds can effectively inhibit opportunities for socioeconomic mobility and reinforce social inequality (Deming & Noray, 2020).

There is a general agreement among scholars that children learn reading and math more slowly during the summer than during the school year, and that summer, therefore, affords children opportunities to not only catch up but to enrich their learning capability (Von Hippel, 2019). As a result, children's summertime use is often determined by family resources, with low-income children having fewer learning and enrichment opportunities. Children from socioeconomically advantaged families are more likely to participate in summer camps and enrichment activities, whereas low-income children are disproportionately exposed to television (Gershenson, 2013). In response to these issues, many school districts have adopted summer learning programs to advance remediation and equity goals, supported in part by research indicating that extending school time can be an effective way to support student learning for those most at risk of school failure (Patall et al., 2010).

A meta-analysis conducted on summer programs assessed research spanning from 1998-2020, to examine the resources and characteristics that predicted stronger student achievement. The research study included 37 experimental and quasi-experimental studies of summer programs in mathematics for children in grades Pre-K-12. Data were collected in three phases, 1. Utilizing search sites and databases such as Academic Search Premier, Education Abstracts, ERIC, PsycINFO, EconLit, and ProQuest Dissertations and Theses. 2. Searching targeted internet sites using keywords like summer program, summer school, or summer enrichment and scanning the reference lists of previously reviewed articles. 3. Identified states and districts that required summer school, then contacted government agencies in these localities requesting any relevant research reports (Lynch et al., 2021).

Results found that participants in summer programs that included mathematics activities experienced significantly better mathematics achievement outcomes compared to their control group counterparts. The average weighted impact estimate of +0.10 standard deviations were found on mathematics achievement outcomes; similar effects were found for programs conducted in higher- and lower-poverty settings (Lynch et al., 2021). The study also undertook a secondary analysis exploring the effect of summer programs on non-cognitive outcomes and found positive mean impacts. The results indicated that summer programs are a promising tool to strengthen children's mathematical proficiency outside of school time (Lynch et al., 2021).

This work is particularly appropriate given the impacts of COVID-19. The Coronavirus (COVID-19) pandemic had swiftly become a major dilemma for educational leaders with how it severely affected students' academics, especially in

underserved communities across the United States (Anderson, 2020). While estimates of educational ramifications of the COVID-19 pandemic to date have varied (Pier et al., 2021), it has generally acknowledged the inequity that has been exacerbated and that substantial efforts are needed to help low-income students recover (Darling-Hammond et al., 2020). Summer school is a key policy mechanism for addressing these learning disruptions, with the American Rescue Plan Act of 2021 having allocated $29 billion for planning and implementing activities related to summer learning and supplemental afterschool programs, including providing classroom instruction or online learning during the summer months'' (Lynch et al., 2021).

Although research of this specific study does not focus on the recent pandemic, there are parallels that exist for the need for more summer learning opportunities; therefore, more information on the Coronavirus (COVID-19) pandemic will be presented in the recommendations for the further research portion of this study.

The Achievement Gap

According to the National Educational Association (NEA), the academic achievement gap is the observed persistent disparity in measured educational performance among subgroups, defined by socio-economic status, race/ethnicity, and gender (NEA, 2015). James Coleman was the first to document the term achievement gap in a report titled The Coleman Report (1966). Congress commissioned *The Coleman Report* in response to the Civil Rights Act of 1964, and Coleman championed the study because of his educational background and support of civil rights (Hill et al., 2017). The report was widely considered the most important educational study of the 20th century because it detailed an academic achievement gap between black students

and their white counterparts (Dickinson, 2016). It also revealed that disadvantaged black children learned better in well-integrated classrooms (Kiviat, 2000).

Scholars argue that the achievement gap exists prior to kindergarten entrance. At kindergarten entry, developmental gaps are already significant among minorities and low socioeconomic status (SES) children (Puccioni, 2019). Children in African American families are more likely than other children to experience ineffective kindergarten transitions (Jarrett & Coba-Rodriquez, 2018). Reading scores at kindergarten entrance for Black students were approximately .32 standard deviations lower than for White students, and the gap increased by the spring of the kindergarten year, despite kindergarten instruction (Bond & Lang, 2018). Children who grow up in middle class homes acquire 60% more words than children who grow up in lower class homes and by the time they enter kindergarten the gap had broadened (Hindman et al., 2016).

The achievement gap is measured in several ways with standardized test scores being the most frequently used, followed by grade point average, dropout rates, college enrollment, and graduation rates. Since 1971, the National Assessment of Educational Progress (NAEP) has monitored the academic performance of 9, 13, and 17-year-old students to track their long-term performance in reading and mathematics. The NAEP reported that African American students showed overall gains; however, white students continued to outperform them on the reading and math assessments by wide margins:

- White students outperformed African American 9-year-old and 13-year-old students in reading by 23 points (National Center for Education Statistics, 2015)

- White students outperformed African American 17-year-olds in reading by 26 points (National Center for Education Statistics, 2015)
- White students outperformed African American 9-year-old students in mathematics by 25 points (National Center for Education Statistics, 2015)
- White students outperformed African American 13-year-old students in mathematics by 28 points (National Center for Education Statistics, 2015)
- White students outperformed African American 17-year-old students in mathematics by 26 points (National Center for Education Statistics, 2015)

Nearly 50 years have passed since The Coleman Report, yet unfortunately, America's schools today are as economically and racially segregated as they were 50 years ago (Orfield, 2009). Although African American students have improved in reading and math, white students are still outperforming them; therefore, exploration and understanding the underlying causes of the achievement gap is essential to addressing it.

The achievement gaps refer to multiple gaps rather than a singular gap because there are multiple disparities that exist in academic achievement amongst different groups in the United States (Wenner, 2017). Literature provides a glimpse at the intersection of achievement and disparities, which will be discussed later in this chapter. To date, the most rigorous empirical study to explicitly examine the relationship between the achievement gap and the discipline gap was in a school district in

Kentucky. The study found that the Black-White discipline gaps (specific demographic groups) accounted for approximately one fifth of the Black-White achievement gap in that district (Morris & Perry, 2016). However, it remained unclear whether the patterns observed in Kentucky were the norm or an outlier nationwide, or whether the inverse relation might exist as well, that is, whether the achievement gap distinctively predicts the discipline gap. (Pearman et al., 2019). While the achievement gap continues to grow as students pass through each year of school, it is driven primarily by different rates of learning during the summer months'' when students are exposed to vastly different learning opportunities (Atteberry & McEachin, 2016). The loss of learning during the summer is explained by a term called the faucet theory.

Summer Learning Loss/Faucet Theory

The faucet theory, developed by Doris Entwisle in 1997, states that the resource faucets (learning opportunities) are turned on during the school year, enabling learning gains (Borman & Benson, 2005); however, when school is not in session during the extended summer recess (June to August), the school resource faucet is turned off, creating inequalities in educational opportunity and outcomes (Alexander et al., 2001). During the summer, poor families could not make up for the resources that the school had been providing, and so their children's achievement reached a plateau or even fell back (Alexander et al., 2001). This potential mechanism suggests that a quality summer intervention is necessary to mitigate the effects of socioeconomic status on summer learning loss (McAlister, 2014). States are conducting research studies with similar results.

A study conducted within the Baltimore School system sought to identify why poor children academically performed worse in comparison to middle-class and wealthy families. The study focused on two main areas, the first area of focus was the difference in schools, and the second area of focus was the difference in home environments. The study took a random sampling of 790 first graders from twenty schools and was based on racial background and economic status, results indicated that the achievement levels of all children, regardless of their socio-economic status, increased substantially during the school year (less affluent children gained fifty-seven points in reading and forty-nine points in math). Their more affluent counterparts gained almost the same number of points, (sixty-one points in reading and forty-five points in math) (Kahlenberg, 2014). During the summer, students that were more affluent gained fifteen points in reading and nine points in math, while the less affluent children lost ground, losing four points in reading and five points in math (Alexander et al., 2001).

According to a 2020 study in the American Educational Research Journal, more than half of students in the United States between grades one and six experienced summer learning loss five years in a row (Boulay & McChesney, 2021). The study examined two hundred million student test scores and found that the average student lost between seventeen and twenty-eight percent of school year gains in English language arts during the following summer. In math, the average student lost between twenty-five and thirty-four percent of each school year gain during the following summer (Lakhami, 2020). Based on this information, the school district began looking at new strategies, such as providing summer school programs during the months'' of

June through August. Students who fall behind during the summer may start off with a deficit during the academic school year, which lends to the continued growth of the academic achievement gap. By recognizing that the summer slide is a problem and accepting the faucet theory as a plausible explanation, the next step should be identifying reasonable and sustainable steps teachers can take to combat the slide.

Opportunity Gap

The effects of summer learning loss on the achievement gap are evident by understanding the opportunity gap. The opportunity gap refers to the circumstances in which people are born such as their race, ethnicity, and socioeconomic status, and how that determine opportunities in life, rather than all people having the chance to achieve to the best of their potential (Mooney, 2018). While sometimes the terms opportunity gap and achievement gap are used interchangeably, it is important to distinguish the differences.

The achievement gap refers to the differences in test scores, graduation rates, and college matriculation rates, while the opportunity gap refers to the differences in students' access to highly effective educators, curricula, and materials (Cruz, 2021). Achievement looks at where a person is, but opportunity looks at why they are where they are and if they faced any barriers along the way. For example, an out-of-school learning (OSL) programs can be a context for positive development and learning for children and youth; however, research points to potential racial and socioeconomic disparities, or opportunity gaps, in this context (McNamara et al., 2020). In many places in the U.S., school funding is based mainly on local property taxes. Additionally, in many places a large proportion of African American and Latino students live in districts

with less funding available (Rodgers, 2019). According to a report by the Schott Foundation for Public Education (SFPE), the opportunity gap has long-term consequences for individuals and our nation.

- Having a high-quality education system for all students regardless of their ZIP codes is not only the democratic measure for leadership, but also increasingly the major determinant of a nation's economic fate.
- Over the next 30 years, U.S. cities and states probably will be defined by what happens for the bottom two-thirds of citizens rather than the top one-third.
- Only one-third of Americans have any college or postsecondary credentials, and the bottom two-thirds of Americans are more likely to drop out of school and be incarcerated.
- Black males are pushed out of high school and into the pipeline to prison at rates higher than they graduate and reach high levels of academic achievement (Darling-Hammond, 2019).

OSL programs that expose participants to new experiences and provides appropriate developmental support can serve as a unique and important developmental context. However, research that addresses how OSL program experiences differ based on participants' race and SES limits (McNamara et al., 2020). The opportunity gap draws attention to these conditions and other obstacles that students face throughout their educational careers. It, therefore, accurately places responsibility on an inequitable system that is not providing the opportunities for all students to thrive and succeed (Mooney, 2018). To successfully close both the achievement and opportunity gaps,

schools will need to take a proactive and innovative approach to supporting the whole student and not just looking at test scores (Rodgers, 2019).

How Summer Learning Loss Contributes to the Achievement Gap

The loss of summer learning for students varies across grade levels, subject matter, and family income, widening the already existing achievement gap (Isaacs, 2012) and is one of the strongest contributors to the high school dropout rates (Jaquith, 2016). Two-thirds of the income-based achievement gap is attributed to summer learning loss which lends to a student on average being two years behind their peers (Borman & Benson, 2005). Summer learning loss accounts for up to 66% percent of the academic achievement gap and is linked to whether students attend college preparatory classes, graduate high school, and enroll in postsecondary educational opportunities (Alexander et al., 2007).

Research demonstrates that summer learning loss rates between low-income and higher-income students contribute substantially to the achievement gap (McCombs et al., 2011). A comprehensive analysis published by the RAND Corporation summarized several findings regarding summer loss:

1. On average, students' achievement scores declined over the summer break by one month worth of school year learning.
2. Declines were sharper for math than reading.
3. Those who participated in a summer program outperformed others with significant improvements of those who participated for two consecutive years.

A similar study showed 53 percent of students (sample size of 75 students) stayed at their reading level or increased by at least one reading level with an intervention plan that provided access to books and magazine subscriptions. It also found that a two-day literacy camp may reduce or eliminate the summer slide in reading in elementary students (Petty & Kern, 2017). Many major school districts are turning to the summer months'' to accelerate the academic goals that they are hard pressed to achieve during the school year. Research shows that rigorous studies provided during the summer encourage students to read at home and have rendered positive outcomes related to student academic achievement (Mccombs et al., 2011). Summertime, which makes up about one-quarter of the calendar year, can be used to provide programs that support the academic achievement goals as well as physical/mental health, development of interests, and the social and emotional well-being of the student. Addressing issues and providing interventions during out-of-school time proves to be vital to addressing the achievement gap; these issues and interventions are identified through the lens of the theoretical perspective, human capital theory.

Human Capital Theory

Human Capital Theory (HCT) is a framework that examines the relationship between education, economic growth, and social wellbeing, and is frequently used in educational research and policy development (Netcoh, 2016). While human capital research has not been limited to education, it usually includes empirical measures of education and produces results that affect educators and educational policy. It provides the idea that formal education is extremely contributory and essential to increase the capacity of a population. Since the 1960s, HCT has dominated economics, policy, and

the public understanding of relations between education and work where intellectual formation constitutes a mode of economic capital, and higher education is preparation for work, and determines graduate outcomes (Marginson, 2019).

> In the foundational narrative of human capital theory, education drives the marginal productivity of labor and marginal productivity drives earnings. Correspondingly, the value of an investment in education is defined by the lifetime earnings of educated labor. Education, work, productivity, and earnings are seen in a linear continuum. When educated students acquire the embodied productivity (the portable human capital) used by employers, graduate earnings follow (Marginson, 2019).

In the past, economic strength was largely dependent on tangible physical assets such as land, factories, and equipment. Labor was a necessary component, but the increase in the value of business came from the investment in capital equipment (Almendarez, 2010). Currently, modern economists seem to concur that education is one of the keys to improving human capital and ultimately increasing the economic outputs of the nation (Becker 1975). The relationship between HCT and this study includes the participants within the study who come from low-income backgrounds with little access to resources, therefore, the relationships between the schools and other community organizations become vital to their academic and social growth. The academic disparity between middle-and-low-income children is among the most pressing concerns in the county today. In the United States, one in five children lives in poverty, with a family of four making $24,600 per year in 2016 (US Census, 2016).

Research has shown that there is a gap in educational achievement between socioeconomic and racial groups in the public education system in the United States, and social capital plays a consequential role in students' performance in school (Zeisler, 2012). A study conducted by the University of Wisconsin and Johns Hopkins University measured the summer gains of 300 elementary school students from high poverty schools. They used a combination of academically intensive community-based summer school programs, parent surveys identifying family characteristics, and summer activities. The study found that regular attendance in summer school averts summer learning loss (Borman et al., 2005).

Public spending on education is a form of investment with a demonstrably high rate of return and the capacity to contribute to the achievement of important national goals (Holden & Biddle, 2016). Higher-income students tend to have access to financial and human capital resources over the summer, thereby facilitating learning (Borman et al., 2005). Therefore, the framework that examines the relationship between education and HCT, is evident when it is directly related to economic growth.

Economic Growth

Research indicates that children from low socio-economic status (SES) households and communities develop academic skills slower than children from higher SES groups. (Morgan et al., 2008). A recent report by the Annie E. Casey Foundation, "The First Eight Years: Giving Kids a Foundation for Lifetime Success" showed for many low-income children, the gap starts early because of health problems at birth that slow cognitive, social, and emotional development (Potts, 2014). Low SES in childhood is related to poor cognitive development, language, memory, socio-emotional

processing, and consequently poor income and health in adulthood; therefore, under-resourced communities negatively affect students' academic progress and outcomes (Aikens & Barbarin, 2008). One out of five children in the United States lives in poverty, which makes them likely to begin the school year already behind their higher-income peers (Reardon et al., 2013). Gaps in reading and math test scores between children in families with low and high incomes were twice as large as the gap between White and Black students (Porter, 2015).

The American Psychological Association reports that the literacy gaps in children from different socioeconomic backgrounds existed before formal schooling began; by three years of age, children in poverty have underdeveloped vocabularies and language skills than their counterparts from middle-class families (Hart & Risley, 1995). Students' initial reading competency is correlated with the home literacy environment and number of books owned (Bergen et al., 2016). Children from low-SES families enter high school with average literacy skills five years behind those of high-income students (Reardon et al., 2013) and are less likely to have experiences that encourage the development of fundamental skills of reading acquisition, such as phonological awareness, vocabulary, and oral language (Buckingham et al., 2013).

According to Race to the Top (n.d.), approximately 66% of students from low-income households do not meet grade-level standards. Lack of early learning spans beyond primary education. Students from low-SES backgrounds are less likely to have access to resources about college (Brown et al., 2016). Additionally, compared to high-SES counterparts, young adults from low-SES backgrounds are at higher risk of accruing student loan debt burdens that exceed the national average (Houle, 2013).

Government-mandated programs struggle to find and implement meaningful education policies that tackle the detrimental impact of poverty and accompanying achievement gap issues (Anderson, 2017).

In the 1960s, economists Gary Becker and Theodore Schultz pointed out that education and training were investments that could add to productivity therefore education became an increasingly important component of the workforce (Becker, 1975); however, summer learning loss based on socio-economic status detailed a significant pattern of underachievement due to the lack of education and access to resources (Jha & Kelleher, 1970). According to the 2018 U.S. Census Bureau, 12.3% of people lived below the poverty level (earning ten and a half thousand dollars per year). The Commonwealth of Kentucky had 17.2 persons living in poverty, this rate is 4.9% higher than the national average. According to the World Population Review, the Commonwealth of Kentucky ranked fourth for the highest poverty rate of the United States on averages. Achievement having a direct correlation to poverty means that the Commonwealth of Kentucky is challenged with addressing the achievement gap.

Researchers argue that the design of better economic and social policies can do more to improve our schools than continued work on educational policy. Results of school reforms carried out over the past few decades need to be abandoned. In their place must come recognition that income inequality causes many social problems, including problems associated with education (Berliner, 2013).

According to Babalola (2003), the rationality behind investment in human capital is based on three arguments:

1. The new generation must be given the appropriate parts of the knowledge which has already been accumulated by previous generations.
2. The new generation should be taught how existing knowledge should be used to develop new products, to introduce new processes and production methods and social services.
3. People must be encouraged to develop entirely new ideas, products, processes, and methods through creative approaches (Almendarez, 2010).

By addressing summer learning loss, educators can narrow the academic achievement gap among disadvantaged students. This offers the opportunity to increase the academic persistence and long-term success of students who are a part of an achievement gap group.

Education

Human capital can be broadly defined as the stock of knowledge, and skills personified in people that help them to be productive; therefore, formal education, whether early childhood or adult training programs, all represent an investment in human capital. High quality early childhood programs promote healthy development; they can generate savings by obviating the need for more expensive interventions later in a child's life. For example, studies show that participation in high-quality early care can help children avoid special education, grade repetition, early parenthood, and incarceration, all of which are outcomes that imply high costs for government and for society (Karoly, 2017). Analysis shows that the private average global rate of return to one extra year of schooling is about nine percent a year and has been very stable over decades. Private returns to higher education have increased over time, raising issues of

financing and equity. Social returns to schooling remain high, above ten percent at the secondary and higher education levels (Psacharopoulos & Patrinos, 2018).

Research has shown that there is a gap in educational achievement between socioeconomic and racial groups in the public education system in the United States (Zeisler, 2012). Learning is strictly connected to development in the cognitive, emotional, and social spheres, and it implies the human skill of giving sense, coherence, and meaning to experience (Miglino et al., 2015). The racial-ethnic achievement gaps originate from two kinds of social processes (direct and signal influences) that operate across developmental contexts (McKown, 2013).

1. Direct influences are social processes that support achievement. Direct influences contribute to the racial-ethnic achievement gap when they are distributed differently to people from different racial-ethnic groups.
2. Signal influences are cues that communicate negative expectations about a child's racial-ethnic group. When children from negatively stereotyped groups detect such cues, this can erode achievement. Signal influences depend on children's ability to detect cues signaling a stereotyped expectation, and this ability increases significantly during the elementary grades (McKown, 2013).

As with any social problem, how policy makers, practitioners, and the public formulate the cause of the achievement gap, guides what is done or not done to solve the problem (Humphreys & Rappaport, 1993; McKown, 2005; Seidman, 1983). Our nation is currently experiencing growing levels of income and wealth inequality, which are contributing to longstanding racial and ethnic gaps in education outcomes and other

areas. These large gaps, in combination with the significant demographic changes already underway, are threatening the economic future of this country. Thus, closing racial and ethnic gaps is not only key to fulfilling the potential of people of color; it is also crucial to the well-being of our nation (Lynch & Oakford, 2014). The human capital theory suggests that people can increase their productive capacity through greater education and skills training (Ross, 2022); therefore, educational policies tend to boost human capital with more children attending pre-primary education (Botev, 2019).

Summer programs are key in the nation's efforts to address loss; therefore, the U.S. Department of Education (ED) launched the Summer Learning & Enrichment Collaborative, which provided support to 46 states, the District of Columbia, the Commonwealth of Puerto Rico, the Bureau of Indian Education, and three territories working together to use American Rescue Plan relief funding to support as many students as possible through enriching and educational summer programming (U.S. Department of Education, 2021). This is an example of how policy has contributed to student learning, but in the past, it was met with mixed reviews. Federal regulations and programs are deemed favorable by some and unsuccessful by others.

No Child Left Behind

The No Child Left Behind (NCLB) law served as the 2002 reauthorization of the Elementary and Secondary Education Act (ESEA), and it scaled up the federal role in holding schools accountable for student outcomes. It required states to test students in reading and math in grades 3-8 and in high school. ESEA sought to advance American competitiveness and close the achievement gap between poor and minority students and their more advantaged peers (Klein, 2018). Since 2002, it has had an outsized impact on

teaching, learning, and school improvement and has become increasingly controversial with educators and the public. According to the Office of Superintendents of Public Instruction (OSPI), the major focus of NCLB was to close student achievement gaps by providing all children with fair, equal, and significant opportunities to obtain a high-quality education. The U.S. Department of Education emphasized four pillars within the bill:

- Accountability: To ensure those students who are disadvantaged achieve academic proficiency.
- Flexibility: Allowed school districts flexibility in how they use federal education funds to improve student achievement.
- Research-based education: Emphasized educational programs and practices that have been proven effective through scientific research.
- Parent options: Increased the choices available to the parents of students attending Title I schools. (WOSP No Child Left Behind of 2001).

NCLB required each state to establish academic standards and a state testing system that met federal requirements called Adequate Yearly Progress (AYP), which determined the success of schools. Results from state tests were compared to prior year scores to determine if schools made adequate progress toward proficiency goals (Klein, 2018). If one group of disadvantaged students underperformed, the entire school was considered underperforming (Turner, 2015).

Most schools did not come close to achieving the 100-percent-proficiency mandate. Thirty-four of Kentucky's schools fell into Tier 5 status after failing to make "No Child" targets during a six-year period (Innes, 2015). Research found that the law's

penalties did little to improve student performance and large achievement gaps remained (Casselman, 2015). Congress closed the book on NCLB when it passed Every Student Succeeds Act (ESSA), which stripped away many of the old laws' most rigid requirements, including dismantling the metric that labeled schools a failure more than a decade earlier (Casselman, 2015).

Every Student Succeeds Act

Every Student Succeeds Act (ESSA) of 2015 represented a major shift from the increased federal authority of No Child Left Behind (NCLB). Some of the changes included:

- Eliminated AYP
- Eliminated teacher/principal evaluations that were linked to student test scores
- Eliminated the School Improvement grants
- Reduced the authority of the U.S. Secretary of Education (ESSA, 2019)

ESSA funding was authorized until 2020-2021 and allowed states and school districts to take charge by creating new opportunities and flexibility while also requiring states to balance many decisions (ESSA, 2019). According to the Department of Education, in 2019 high school graduation rates were at all-time highs, dropout rates were at historic lows, and more students were going to college than ever before. These achievements provided a firm foundation for further work to expand educational opportunities and improve student outcomes under ESSA (2019).

Race to the Top Mandate

In 2009, the government signed Race to The Top (RTTT), which set 2020 as the year in which all high school seniors would be college ready. Through Race to the Top, the Department of Education asked states to advance reforms around four specific areas:

- Adopting standards and assessments that prepare students to succeed in college, the workplace, and compete in the global economy
- Building data systems that measure student growth and success and inform teachers and principals about how they can improve instruction
- Recruiting, developing, rewarding, and retaining effective teachers and principals, especially where they are needed most
- Turning around our lowest-achieving schools (Center for Public Impact, 2016).

Government mandates proved ineffective because of the mistaken belief that standardization would result in effective schools because research consistently showed that increased standardization makes teachers less effective in meeting students' needs (Babione, 2010; Herbert, 2010).

The public is inundated with school reform strategies, such as charter schools, magnet schools, small schools, schools-within schools, Teach for America, and merit pay, yet most of these reform strategies have failed to produce substantive results over time because they operate under the false assumption that schools alone can close the achievement gap (Werblow, 2011). Not knowing the true magnitude of the achievement gap creates problems for lawmakers and educators trying to understand if policies designed to close the gaps are working (Soland, 2017). Policymakers have long

searched for tools that will help schools break the linkage between students' learning and their SES background (Cameron & Heckman, 2001). If the tools applied thus far have been unable to lessen the relationship between SES and achievement, policy makers need to consider alternatives (Hanushek et al., 2019).

The persistent gap in achievement is caused by a gap in opportunities due to systemic and institutional inequalities in resources and supports (Johns & Jones-Castro, 2016). While policymakers generally understand that family and community characteristics affect performance, they are perplexed about addressing their impact, therefore, pushing policies that address these social class characteristics that have the potential to influence the achievement of disadvantaged students more than school improvement strategies (Morsy & Rothstein, 2015).

Social Wellbeing

Human Capital Theory has been criticized for the narrow instrumental role that it assigns to education, as well as for its inability to satisfactorily reflect the cultural, gender-based, emotional, and historical differences that can influence educational choices and individual well-being (Chiappero-Martinetti & Sabadash, 1970). While some argue that the education world is obsessed with culture: cultural competence, cultural proficiency, culturally relevant teaching, culturally responsive teaching, multicultural education, intercultural education, cross-cultural education, and intercultural communication (Gorski & Swalwell, 2015); others argue pure language because language matters, culturally and linguistically diverse students or racially, economically, and linguistically marginalized students. How we frame the problem

drives what we can imagine as solutions (Leonardatos & Zahedi, 2014). To examine social wellbeing of HTC, cultural competence must be addressed.

Frameworks, including culturally responsive teaching, multicultural education, and cultural proficiency, are rooted theoretically in principles of equality and justice; however, when it comes to matters of equity, transformative aspects often fade to invisible in practice (Gorski, 2016). The academic achievement of culturally, racially, and ethnically diverse students from high poverty and/or high-risk communities will require more than national and/or state policies and mandates. It necessitates a transformative view of the teacher as a change agent with the ability to alter the culture, climate, and level of student achievement in a classroom (Byrd, 2020).

Students' social well-being may be defined as the extent to which they feel a sense of belonging and social inclusion in their academic environment (Pang, 2018). Culturally responsive pedagogy is a student-centered approach to teaching in which the students' unique cultural strengths are identified and nurtured to promote student achievement and a sense of well-being about the student's cultural place in the world (Lynch, 2016). Research shows that culturally responsive practices in schools and classrooms are effective means of addressing the achievement gap. It also addresses the disproportionate representation of racially, culturally, ethnically, and linguistically diverse students in programs serving students with special needs (Griner & Stewart, 2012).

Various educators have espoused the use of culturally responsive instruction (CRI) for closing achievement gaps, yet there is a lack of research supporting its effectiveness. A mixed methods study conducted to examine the use of the Culturally

Responsive Instruction Observation Protocol (CRIOP) as a framework for the professional development of twenty-seven elementary school teachers and their classrooms totaling 456 students. CRIOP framed the Project PLACE professional learning experiences; it was grounded in research on culturally responsive instruction and designed to be a tool for guiding practitioners in their development as culturally responsive educators (University of Kentucky, 2022). CRIOPs comprehensive model and evaluation tool were centered around seven elements: Classroom Relationships, Family Collaboration; Assessment; Curriculum/ Planned Experiences; Instruction/Pedagogy; Discourse/Instructional Conversation; and Sociopolitical Consciousness/Diverse Perspectives (Powell et al., 2016).

Student achievement data were collected using the Measures of Academic Progress (MAP) test; data was only collected from the students enrolled in classrooms of participating teachers. The population of the student participants included those who received free or reduced lunch and/or were classified as English Language Learners (ELLs). The study answered three questions:

1. Do teachers increase their use of culturally responsive practices as they participate in CRIOP professional development?
2. What is the relationship between implementation of culturally responsive instruction and student achievement in reading and mathematics?
3. What are teachers' perceptions of their successes and challenges in implementing culturally responsive instruction?

Data on student achievement indicated that students of high implementers of the CRIOP had significantly higher achievement scores in reading and mathematics than

students of low implementers. Although there was limited research on its effectiveness, the results of the study suggest that the CRIOP model showed promise for both as a framework for teacher professional development and as an observation instrument in investigations of culturally responsive instruction (Powell et al., 2016).

Literature provides compelling evidence that race and class matter when examining the effects of the achievement gap. To understand the complexity of the achievement gap, it is important to consider the pattern of systemic exclusion and racial segregation of African American students throughout the history of education (Amerson, 2014). According to the 2013 Center for Education Policy Analysis, racial and ethnic inequality in education has a long and persistent history in the United States, beginning in 1954 when the Supreme Court ruled in Brown v. Board of Education that racial segregation of public schools was unconstitutional.

Although there has been progress in improving racial and educational disparities, progress has been slow. The academic achievement of African Americans has improved in recent decades, but whites have as well, so racial achievement gaps remain (Strauss, 2015). A 10-year systematic review of the international use of social-emotional learning (SEL) interventions were conducted in fifty-one urban schools. The study incorporated culturally responsive SEL instruction to utilize the lived experiences and frames of reference of the students to reinforce and teach SEL competencies. Thirty-eight of the fifty-one studies included in the review were conducted in the United States. The study indicated promising results for the schools that used the SEL interventions in supporting student learning outcomes (McCallops et al., 2019). To effectively teach an increasingly diverse student population throughout the United

States, scholars and teacher educators have become proponents of using culturally responsive pedagogy (Jackson et al., 2019). While the use of test scores and teaching to the test has pros and cons, other leaders in academia have extended their methods to holistic approaches to the social wellbeing of students in education.

Holistic Approaches to Education

In holistic education environments, students learn to deal with challenges and care about the world around them by making informed and ethical decisions that affect their communities (Miller, 2019). Holistic approaches to education vary by discipline, subject matter, and participants, but all are centered around supporting the whole student by integrating hands-on activities, building critical thinking, cultivating social skills, and encouraging a growth mindset. These approaches supported the teachers working with the PSA participants in providing a holistic educational environment through academic and enrichment activities that supported each individual student.

- *Hands-On Activities* provided experiential/kinesthetic learning, it allowed students to engage in learning through trial and error (Think Fun, 2015).

Hand-on learning encourages students to think outside of the box and experiment and explore problems to find solutions. Students apply knowledge from classes to real-world situations, all while honing their writing and communication skills, as well as their ability to analyze and synthesize information; these skills that are critical to success in a wide variety of careers (Bradberry & DeMaio, 2019). Educational researchers are developing a variety of methods to incorporate hands-on activities into the classroom; for example, the flipped classroom is a teaching methodology that

inverts traditional teaching methods to problem solving, with the teacher's role becoming that of a learning coach and facilitator (Altemueller & Lindquist, 2017). Hands- on learning supports different learning styles and has the opportunity to increase student motivation and success.

- *Critical Thinking* involved analyzing information to make an informed decision, it allowed students to conceptualize and/or evaluate information (Lumen Learning, 2016).

Critical thinking skills are used every day to help process and make decisions. A study conducted with 78 students of the Department of Geography, used Spatial Problem Based Learning (SPBL) to improve critical thinking skills. The study found that 25% of students were able to think critically. However, based on the Gain-Score calculation, it showed effectiveness <40%, so the recommendation for teachers was to apply relevant learning models so that students are more critical and active in the geography learning process (Silviariza et al., 2021). Incorporating critical thinking into the classroom curriculum will provide instructors with feedback on how to enhance the students' academic development and experience.

- *Social Skills* used verbal and non-verbal communication, it allowed students to communicate thoughts and feeling through language and body gestures (Victoria State Government, 2020).

Social commentators worry that exposure to new technologies (e.g., TV, computers, phones, tablets, video games) has reduced the development of children's and youths' ability to negotiate successful face-to-face interactions. This concern became popularized by the TED talk "Connected but Alone?" (Turkle, 2012). Social skills are

lower for children who access online gaming and social networking many times a day (Downey & Gibbs, 2020). As technology grows with generations teaching social skills will become even more vital because developing the social skills of students increases their ability to communicate and reduces negative behaviors. Students who know how to communicate their ideas, listen to what others have to say, and cooperate with others, are more confident in the classroom and have a higher probability for educational success.

- *Differentiated Instruction* is an approach of teaching and learning for students of differing abilities in the same class. The intent is to maximize each student's growth and individual success by meeting each student where he or she is, rather than expecting students to modify themselves for the curriculum. (Hall, 2002)

A growing body of research shows positive results for full implementation of differentiated instruction in mixed-ability classrooms (Rock et al., 2008). In a three-year study of a school in Canada, scholars researched the application and effects of differentiated instruction in K–12 classrooms. They found that differentiated instruction consistently yielded positive results across a broad range of targeted groups. Compared with the general student population, students with mild or severe learning disabilities received more benefits from differentiated and intensive support, especially when the differentiation was delivered in small groups or with targeted instruction (McQuarrie et al., 2008).

- *Growth Mindset* involves developing abilities through dedication and hard work, it allowed students to use positive expressions toward learning (Jacovidis et al., 2020).

The extent to which students view their intelligence as improvable (their mindset) influences their thoughts, behaviors, and, ultimately their academic success (Limeri et al., 2020). A wide range of mindset interventions has been designed to tackle the educational gap and improve the academic achievements of underperforming students. (Corradi et al., 2019). Recent evidence suggests that students' mindsets continue to develop and change during their first year of college.

A mindset survey conducted on 875 upper-level STEM students determined that students attribute their beliefs about intelligence to five factors: academic experiences, observing peers, deducing logically, taking societal cues, and formal learning (Limeri et al., 2020). These results suggest that academic outcome depends on more than whether students are located on the positive or negative side of the mindset spectrum. The mindset of students is important for education professionals working to understand and promote student success because it provides an opportunity to explore a wide range of interventions designed to tackle the academic gap and improve the self-efficacy of underperforming students.

Summary

Research showed that student achievement is largely a function of poverty and lack of resources, which leads to lower test scores on standardized tests. Variances in achievement during the summer between low-income students and their more affluent peers were due to the disproportions of their summer experiences. Summer learning loss

also known as the faucet theory, described how children learn at similar rates during the school year; however, during the summer, the learning faucet is turned off for low-income children leading to a lack of academic gains by the start of the school year. This loss of learning during the summer contributed to the academic achievement gap and made summer learning loss one of the primary contributors.

Research showed that a lapse in learning for any student leads to failing grades and low-test scores, factoring in low-income students with little to no access to resources contributed to summer learning regression and the academic achievement gap, which grows wider each year. To truly investigate the avenues of the academic achievement gap, one must explore the opportunity gap. Although used interchangeably, they are very different; the academic achievement gap looks at performance, where the opportunity gap looks at the systems that resulted in performance. In order to seek ways of closing the academic achievement gap, one must first understand that it cannot be done without closing the gap in opportunities.

This chapter presented human capital theory and its relation to the program participants within this study. Human capital theory addressed socio-economic status and its relationship to education and social wellbeing. Government mandated programs designed to increase the academic capacity of students like NCLB, ESSA, and RTTT, had mixed reviews. Lastly, holistic approaches to education were presented. These approaches were designed to meet the needs of varying academic levels and to build the self-efficacy and confidence of students.

Summertime, which makes up about one-quarter of the calendar year, can be used to provide programs that support academic achievement goals as well as

physical/mental health, social and emotional well-being, the acquisition of skills, and the development of interests. Addressing issues and providing interventions during out-of-school time proved to be vital to improving summer learning loss and addressing the academic achievement gap.

III. Methodology

A correlational research design investigates the relationships between two or more variables without the researcher controlling or manipulating any of them (Bhandari, 2021). This design does not establish what causes what, it looks at two variables that are measured and compared, but neither are changed (Bhandari, 2021). The researcher of the study utilized the correlational research design method as characterized by quantification since the magnitude of variables must be ascertained (e.g., age, income, number of privacy settings) and nominal-scale variables, categories (e.g., personality type, gender) (MacKenzie, 2013). This quantitative research study looked at correlations between assessment scores which are ascertained variables, and nominal-scale variables such as gender. Using the correlational research method, the researcher examined the parallels between variables to identify their relationship and answer the research question. This chapter highlights the research methodology and procedure used in the study to evaluate the PSA summer program.

Research Design

The aim of the study was to examine the impact that the PSA summer program had on the summer learning of a specific group of students. PSA is a preventative learning enrichment program designed to address the achievement gap by decreasing summer learning loss. The following dependent variables were evaluated in the study and used to operationalize student academic success of program participants: (1) pretest scores, (2) post-test scores, and (3) the correlations between demographics of students participating in the summer program. Only student data from the PSA program was

utilized for the study. The population assessed consisted of students from diverse backgrounds but all live in low income communities.

Variable Relationships

Variables within this study are commonly used within this empirical research; both experience and data lend to the variables, and their relationship to this study is described below.

- Pretest- Test scores in reading and math of participants at entry of the program. It provides baseline data that determines initial understanding.
- Posttest- Test scores in reading and math at the end of the program to determine what the participant has learned.
- Correlation- Determine the association between the pretest, post-test and participant demographics such as gender to assess the statistical relationship between them.

Research Question

The study will examine the impact that the PSA program had on the summer learning of students by answering the following question:

1. Does the summer learning loss prevention program, Power Scholars Academy have a positive impact on the achievement of students in literacy/reading and math?

Literature and previous studies support the conclusion that participants receiving engaging academic instruction during the summer months'' will show growth. Due to the holistic approaches to education such as differentiated instruction and growth

mindset practices provided through the PSA summer program, the research may deem favorable for the program examined within this study.

Rationale for Design

Improving summer learning experiences that effects change within the academic achievement gap requires a closer look at the opportunity gap. By addressing the opportunity gap, educators and policy makers have the ability to change the trajectory of the lives of economically disadvantaged families, therefore this research is significant to educators and officials making decisions in educational policy. Policymakers' efforts towards narrowing the achievement gap offered the opportunity to increase the academic persistence and long-term success of students who usually have a difficult time in educational settings (Porter, 2015). Not only does this research have the ability to increase academic persistence and success, but also the economic health of poor families.

This quantitative research study measured the performance in reading and math of participants in the Power Scholars Academy summer program and served as the best statistical approach when measuring pre and post-test scores. This study used a correlational and causal comparative approach to identify commonalities within the research as well as examine potential causes for observed differences found among the research participants. Measuring variables (pretest, posttest, & demographic correlations) provided a baseline and assessed growth, regression, and statistical relationships. Data was collected through an approval, signed consent form from students' parents/guardians. Assessment data was only accessed from the Standardized Test for the Assessment of Reading (STAR), which is password protected. Program

sites only employ one person with access to the data system, and authorizations prohibit downloading or exporting files in which program data is stored. The program also had stringent written staff policies explicitly prohibiting any data sharing without permission. Lastly, no individual student data was shared externally, and only aggregate site-level analyses were provided at the end of the program.

Population and Sample Selection

The participants analyzed in the study were from the Power Scholars Academy (PSA) program. PSA is a partnership between BellXcel and academic/community organizations; the program is designed to provide academic and enrichment opportunities when school is not in session. PSA works with local school districts and community-based organizations to address the need for educational transformation. The design of the PSA program aims to achieve the following goals:

- Increase literacy and math skills
- Strengthen self-confidence
- Improve social skills
- Engage parents and guardians in children's education. (Cooper-Martin & Wade, 2017)

Precisely 1,567 students were selected to participate in the PSA program between 2017-2021. Participants of the study were identified by school administrators and invited to participate in the program. Participants were selected based on reading and math skills or were students who just needed the extra help. Participants were asked to commit to the full summer program and to submit a signed application from a parent or guardian, which served as a confirmation. Daily attendance was used to track the

participation commitment. Data were collected and stored by the BellXcel, in which the PI received permission for use by submitting a letter requesting the opportunity to measure the effectiveness of the program.

Research Instrument

As with most evaluation studies, this research study only estimated the overall impact for a specific group of students participating in the Power Scholars Academy program from 2017-2021. The intervention elements described within the fidelity of the BellXcel model deemed successful program outcomes and thus of potential importance. The instrument used to collect the data in this quantitative study consist of test scores compiled by the researcher to assess and determine whether the PSA program increased the reading and math skills of students. The following were evaluated by the PI for determination:

- Test scores: pretest and post-test in subject areas of reading and math skills were collected between 2017-2021 to analyze growth or regression.

Data Collection

The instrument used to collect data in this study included scholastic scores from the STAR assessment reported by BellXcel. Pre-existing data included a pretest and post-test in the subject areas of reading and math to measure participants' growth and the programs' success in addressing summer learning loss. This non-experimental quantitative analysis used preexisting data provided by the BellXcel which measured the success of the participants observed during the study.

Table 1

Variable Relationships between Academic Assessments

VARIABLE	DESCRIPTION	RELATIONSHIP
Pretest	Test scores in reading and math of participants at entry of the program.	Provide baseline data that determined initial understanding.
Post-test	Test scores in reading and math at the end of the program.	Conducted at the end of the program to determine what the participant learned.
Correlation	Determine the association between variables within the study.	Measures variables to assess the statistical relationship between them.

Note. Compiled by the Primary Investigator (PI).

Data collection includes the pre and post-test scores of students participating in the PSA summer program in 2017, 2018, 2019, 2020, and 2021 for the purpose of examining the growth or regression in specific subjects. Demographic information allowed for extended research on the established factors that affect the achievement gap, such as economics, race, and ethnicity, to show potential similarities in program participants. BellXcel granted permission to use the non-identifiable data for the purpose of this study. A completed application from the PI, including the letter of permission from BellXcel, was submitted to the Internal Review Board (IRB) for approval of this study.

State test scores, learning ability, and lack of self-confidence determined the selection of the participants (groups) of this study. Pretest assessments in reading and math (measure) were provided to each participant, and the data was analyzed to

determine the best approach to the students' learning (treatment). Data-driven instruction served as a guide for instructors to modify their teaching methods, also known as differentiated instruction (intervention), to meet the needs of the student. Participants were later provided with a post-test (a measure of results) to determine if the instruction was helpful to the student.

The study also assessed the correlation/relationship between variables. Based on the research questions identified for the study, dependent, independent, and control variables have been identified.

- Dependent variables: participants ethnicity and income demographics
- Independent variables: pre and post-test scores
- Controlled variable: differentiated instruction

Formative assessments were provided throughout the summer to track areas of need and to adjust instruction. Differentiated instruction and growth mindset built into academic and enrichment activities, as defined in Chapter 2 of this study, was introduced, and implemented by teachers after the pretest, in each classroom throughout the day during the summer program to build knowledge, self-esteem, confidence, develop social skills, and change the participants' overall view of learning.

Data Analysis

Data that were analyzed within the study consisted of the STAR assessment, which is a computer-adaptive test designed to give educators accurate, reliable, and valid data quickly so that they can make good decisions about instruction and intervention. The STAR assessment which is parallel to the Measure of Academic Progress (MAP) assessment used by the school district during the academic school year.

MAP assessment scores were not essential to this study; however, school districts are able to compare the assessments. A student who showed gains scores on the STAR assessment during the summer were more likely to also have gained on the MAP assessment. For the research study, the STAR assessment is used to show reading and math levels at the beginning (pretest) and at the conclusion of the summer program (post-test) (Cooper-Martin & Wade, 2017) to measure growth.

Data were collected and entered in the Statistical Package for the Social Science (SPSS) software to analyze test scores and demographic correlations to address the research question. This study utilized a causal-comparative design by calculating statistical outliers using differences in pre, and post-test scaled scores. Any mean difference that was more than +/- 2 standard deviations was considered an outlier in the data set and was not included in any major analysis. Once the outliers were identified, a Paired T-Test was run on the pre and post-test metrics to determine the mean differences and to identify if those differences were statistically significant.

Reliability

All data collected were stored in a secure file located on the PI's personal desktop computer, which was password protected and only accessible by the PI. The collection of data used for the study is credible, as reported by the Standardized Test for the Assessment of Reading (STAR) system. There were no perceived ethical issues, bias, or threats to internal validity within the study. The STAR assessment is an adaptive computer assessment aligned to Common Core State Standards that measure a student's skillset in math and reading. Power Scholar Academy (PSA) participants

complete the STAR assessment administered by the Academic Coach hired through the school district (Chaplin & Capizzano, 2006).

Students were evaluated on materials for the grade level they recently completed at the end of the academic school year (i.e., a rising first-grade student is tested on kindergarten materials because kindergarten would be the most recent grade completed). The STAR assessment is comparable to the MAP assessment, which is provided throughout the school district and ensures that students are tested on similar information. Therefore, if a student displays growth as determined by the STAR assessment during the summer, there is a higher probability that the student would have similar results on the MAP assessment during the upcoming academic school year.

The STAR assessment was not developed by BellXcel. It was only used as a tool to measure and improve students learning outcomes. The STAR assessment is a computer-adaptive test (CAT), designed to adjust the difficulty of a test administered by selecting assessment items based on a student's performance on each previously answered question. Research also suggests that CAT is a sound choice for monitoring student performance in Response to Intervention (RTI), a process of providing high-quality interventions that are matched to student needs and using frequent progress monitoring of student's response to interventions to assist in making important educational decisions (Bray & Kehle, 2011).

To create a link between assessment and instruction, Renaissance Learning developed, tested, and validated the progressions. For both subjects, educational content experts identified the initial order of items difficulty by researching reading and math theory, examining widely accepted frameworks and state standards, reviewing college-

and-career-readiness standards, and consulting nationally recognized subject-area experts (Renaissance Learning, 2014).

Ethical Consideration

Data for the research study were obtained by using preexisting data of the PSA participants provided by the programs' creator, BellXcel. The PI only had access to the test scores and variable information such as grade level, race, and gender. Names of participants, or any other identifiable information were not provided. Anonymity and confidentiality are of the utmost importance; therefore, research data were securely maintained on a locked computer only available to the PI of the study. There were no perceived ethical issues, bias, or threats to internal validity within the study. The research is void of potential harm to the participants, school districts, and the wider community.

Summary

This chapter provided the framework used to answer the research question. First, providing background of the framework and participants of this study, then describing variables within the study and draw parallels of their relationship to examine the research thoroughly. Variables identified within the study, the group: dependent variables, included participants gender, the measure: independent variables such as the pre and post-test scores and the intervention: controlled variable, which was the differentiated instruction provided to program participants, as well as exploring correlations between variables to round out the data of this study.

This quantitative analysis used preexisting data from BellXcel of the program participants in order to determine if the goal of the Power Scholars Academy program

was achieved. The quantitative design used for the framework of the study examined summer learning loss prevention as an effective tool in addressing the achievement gap. Utilizing the computer-adaptive STAR reading and math assessment, which measured the academic progress provided a great way for school districts to utilize the assessments to assist students at the start of each school year. STAR monitors performance in response to intervention which provides instructors with detailed information on the areas in which growth is needed so that the instructor can provide quality intervention methods while working with students.

Data were collected between 2017-2021 in order to determine growth or regression during the summer program. Incorporating holistic education such as hands-on activities, building critical thinking, social skills, differentiated instruction, and a growth mindset supported the differentiated instruction provided to participants throughout the course of the program to build the self-confidence of participants. It also provided an evidence-based style of teaching and learning that benefits students of all levels and learning styles.

IV. Results

The purpose of the study was to evaluate the impact that the Power Scholars Academy program had on program participants. This chapter presents the results of this quantitative study which explored the impact of a summer learning loss prevention program. The investigation was conducted within the context of the summer learning loss prevention programs being a viable means of addressing the academic achievement gap. The purpose of the study was guided by the following research question:

1. Does the summer learning loss prevention program, Power Scholars Academy have a positive impact on the achievement of students in literacy/reading and math?

The findings from this study were drawn from preexisting quantitative data provided by BellXcel. The following variables were evaluated in the study: (1) pretest scores, (2) post-test scores, and (3) correlations between the demographics of the participant population. To analyze the participants' assessment data, raw data files were exported from the online assessment system, then descriptive and inferential analyses in SPSS were performed. To determine loss/gains, paired-sample T-tests were conducted to get the mean pre and post-test scores and a mean difference.

Regardless of the results of this study, the findings are not indicative of the participants and should not be deemed absolute for any student, school district, or academic program. Although this study emphasizes the importance of utilizing summers to continuously engage students learning, summers may not work for all demographics and/or school districts. Specific demographics of the participants in this study will be presented later in this chapter.

Background

PSA is a collaboration of BellXel, local school districts, and community organizations that support the learning of students during out-of-school time. BellXcel, formally called Building Educated Leaders for Life (BELL), designed a program model that included intensive math and reading curriculum, growth mindset to build self-efficacy, and parent and community involvement, working with school districts and community organizations across the country. The BellXcel, Power Scholars Academy program had a strong academic and enrichment model and had highly qualified teachers teaching each academic course. The core goal of the program is to improve academics, self-esteem, and gain a healthy viewpoint towards learning.

Curriculum

Power Scholars Academy is a summer opportunity was designed as a five or six-week accelerated learning program. Program participants completed the STAR assessment within the first week of the program, reports for each participant were provided with details on learning strengths and the areas of growth for the student. The curriculum was then arranged for certified teachers to follow a grade-specific plan that could be tailored to the participants' academic levels. Participants are assessed a second time during the last week of the program to determine growth. The STAR assessment produces metrics that allowed teachers to drive instruction in regular everyday classroom. Using data to drive instruction is an ongoing process that leads to responsive and differentiated teaching and learning for students (Children's Literacy Initiative, 2018), therefore, when curriculum is tailored to the needs of the student, there is a higher probability of success. Participants also practice holistic intervention like a

growth mindset throughout the course of the program to build their confidence in learning.

Growth Mindset

The model of a growth mindset was established by psychologist Carol Dweck in her book, Mindset: The New Psychology of Success, as a term used to describe a person who believes that they can develop talents through hard work, mentorship, and applying good strategies (Dweck, 2021). In her 2006 book *Mindset*, Dweck applied the incremental and entity implicit theories to the personal attribute of intelligence related to mindset. The idea of two different mindsets was born from Dweck and her doctoral students attempting to understand why some students were focused on proving ability while other students just seemed to let go and learn (Castiglione, 2019).

Growth mindset develops a can-do attitude instead of saying I can't, which is an example of a fixed mindset. For instance, growth-minded individuals perceive task setbacks as a necessary part of the learning process and they "bounce back" by increasing their motivational effort (O'Rourke et al., 2014). Students with growth mindset are likely to learn by a mastery approach, embrace challenges and put in the effort to learn. In the world of the growth mindset, ability is malleable, and success is found not by proving ability, but rather by demonstrating the ability to persevere through a challenging task rather than be stopped by it (Castiglione, 2019).

Growth mindset played a large part of the Power Scholars Academy. Growth mindset techniques are intertwined into the evidence-based curriculum tailored to support the learning outcomes for students. Through visuals, chants, songs, and cheers,

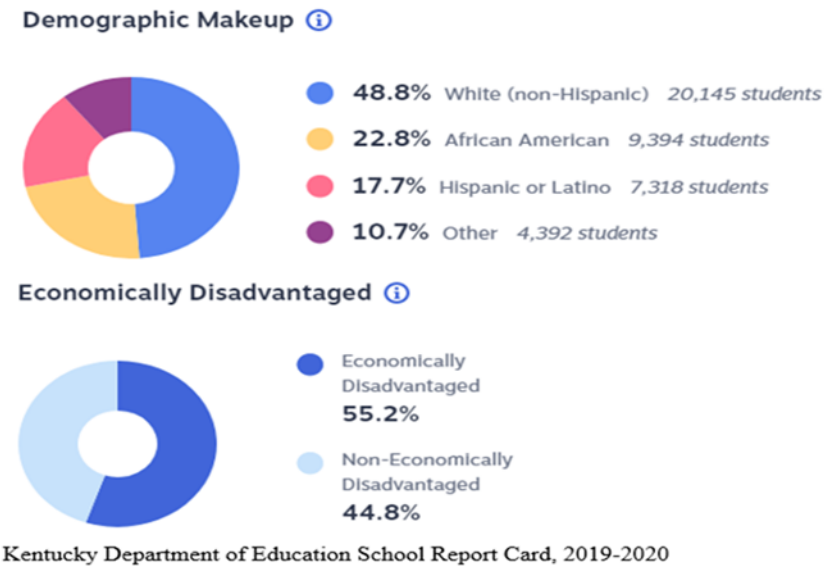
this holistic form of teaching was built into the day for program participants to help build self-efficacy and self-confidence of the participants.

Demographics Background

This subsection summarizes background characteristics of the program participants. Demographic characteristics for this study include gender and income. Race, and ethnicity data were collected for general participant purpose, but were not linked to the assessment data. Participants within this study attended schools in the second largest county in the Commonwealth of Kentucky, with more than half of the student population coming from economically disadvantaged populations, meaning they were amongst a population group potentially at risk of education exclusion.

Figure 1

Kentucky Department of Education School Report Card, 2019-2020



Note. Each year, Kentucky schools publish School Report Cards (SRC) and post them on the Kentucky Department of Education website. The School and District Report Cards were established by statute, KRS 158.6453 (20), and regulation, 703 KAR 5:140.

Additionally, the report card must incorporate the requirements of the federal Every Student Succeeds Act (ESSA).

Results

The intervention elements described within the fidelity of the BellXcel deemed successful program outcomes and thus are of potential importance to the outcome of this research study. The outcomes of the current study are presented in two parts. The first part includes the profile of 1,567 program participants during 2017-2021, while the second part presents assessment results.

Profile of Participants

The demographic profile of the program participants in this study included the gender demographic data of the 1,567 participants: 749 (47.8%) females, 653 (41.67%) males, and 165 (10.53%) participants who either did not disclose their gender or the data was not collected. The race of the participants included 319 (20.36%) African Americans/Black, 17 (1.08%) Asian/Pacific Islanders, 142 (9.06%) Caucasian/White, and 280 (17.87%) Hispanic/Latino, leaving 809 (51.63%) participants who either did not disclose their race or the data was not collected. There are two reasons why data were not collected 1. the information was not added on the original application, the program decided to collect additional demographic data after the inaugural year, and 2. families chose not to reveal the information on the application.

The sample size of the participants increased over the years of the program. It started with 83 participants in 2017 and ended with 609 participants in 2021, an increase of 526 participants, 633.73% participation growth. Although by close margins, female participants outnumbered male participants each year. In both 2019 and 2021,

African American and Hispanic/Latino students had the highest participation rate (African American- 179 (31.24%) in 2019 and 141 (23.15%) in 2021 and Hispanic/Latino- 181 (31.59%) in 2019 and 99 (16.26%) in 2021, but many participants did not disclose their race/ethnicity (159 (27.75%) in 2019 and 265 (43.51%) in 2021). Data for race was not collected during the program's inception years of 2017 and 2018, and no data was collected on race or gender in 2020 due to coronavirus (COVID-19).

Table 2

A Profile of Student Population 2017-2021

Years	2017	2018	2019	2020	2021
Total Participants	83	334	573	169	609
Female Participants	44	151	288	N/A	266
Male Participants	38	130	255	0	230
Non-Gender Identified	1	53	0	0	113
Races	N/A	N/A	AA- 178	N/A	AA-141
AA=African American/Black			Asian/PI- 4		Asian/PI- 13
H/L= Hispanic/Latino			Cauc- 51		Cauc- 91
Cauc= Caucasian/White			H/L- 181		H/L- 99
Asian/PI- Asian/Pacific			N/A- 159		N/A- 265
Islander					
Total Income	N/A	N/A	N/A	N/A	N/A

Note. The Power Scholars Academy program was comprised of 1,567 participants from 2017 to 2020 (81 in 2017, 334 in 2018, 543 in 2019, 169 in 2020, and 609 in 2021).

Data on race were not collected during the first two years of the program's inception and during the 2020 program year due to COVID.

Assessment Results

Data analyzed to answer the research question showed that the PSA program had a positive impact on participants' literacy and math scores. There were 912 participants assessed in the reading during 2017-2021, with the most alarming years being in 2019 and 2021. In 2019 the total number of program participants was 573, but only 262 (45.72%) were tested, and in 2021 there were 609 participants, with only 199 (32.68%) being tested. This gap in assessment was due to low attendance. Participants were assessed during the first week of the program and the last week of the program only, and although there were options for makeup assessments, because of the short five-week program timeframe, it was best for the fidelity of the program to have assessments within the proper testing window.

The participants that were assessed exhibited gains each year, with the largest percentage of gains in 2017. In 2017, 75 participants took the literacy/reading assessment and showed +5.7 months'' growth.

Table 3

Literacy pretest and posttest assessment scores from 2017-2021

Years	2017	2018	2019	2020	2021
Sample Size	75	286	262	90	1999
Pre NCE	31.661	29.666	26.656	38.934	24.445
Post NCE	37.413	33.416	28.555	39.991	27.007

Overall NCE Gains/Lose	+5.752	+3.7497	+1.8981	+1.0567	+2.5613
Gains/Lose by Gender	N/A	F:+3.1151 M: +4.7539 Unknown: +3.5066	F: +1.8929 M: +2.0436 Unknown: +1.4853	N/A	F: +3.0158 M: +3.5966 Unknown: +2.3053
Gains/Lose by Race	N/A	N/A	N/A	N/A	N/A
Gains/Lose by Income	N/A	N/A	NA	N/A	N/A

Note. Participants of the Power Scholars Academy program were comprised of 1,567 participants from 2017 to 2020. Of that, 912 participants were assessed in literacy. The year 2017 showed the largest number of growths. Other years fluctuated in a range between +1.05 to 3.7.

Math Assessment Results

There were 784 participants assessed during the summers of 2017-2021. The years of 2017 and 2018 had the highest math gain scores (+5.8 months'' in 2017 and +5.3 months'' in 2018). The lowest math gains were in 2020, where 90 students participated in the program, and 78 (86.67%) were assessed. Of the 78 that were assessed, the math gains were +1.5 months'', while other years ranged from +2.26 to +5.88 months''.

Table 4

Math pretest and posttest assessment scores from 2017-2021

Years	2017	2018	2019	2020	2021
Sample Size	45	256	272	78	133
Pre NCE	31.631	35.360	31.735	40.418	20.588
Post NCE	37.513	40.715	33.997	41.996	23.706
Overall NCE Gains/Lose	+5.8822	+5.3547	+2.2621	+1.5782	+3.118
Gains/Lose by Gender	N/A	F: +4.5565 M: +5.7372 Unknown: +5.7634	F: +2.2855 M: +2.2380 Unknown: +1.8515	N/A	F: +6.2400 M: +4.6800 Unknown: +2.3214
Gains/Lose by Race	N/A	N/A	N/A	N/A	N/A
Gains/Lose by Income	N/A	N/A	NA	N/A	N/A

Note. Participants of the Power Scholars Academy program were comprised of 1,567 participants from 2017 to 2020. Of that, 784 participants were assessed in math. The year 2017 showed the largest number of assessment gains at +5.88, and 2020 had the lowest number of gains at am +1.5. Other years fluctuated in a range between +2.26 to 5.3.

Demographic Correlations

A growing body of evidence indicates that the test scores of low-income students drop significantly relative to their higher-income counterparts during the summer months', therefore summer intervention are vital to educators. While analyzing

academic data, this study also aimed to analyze correlations between student demographic information to determine if there were any intersections between participants. Demographic information of participants included gender, race, and economic status; however race and income were collected for the entire program, it was not provided by test scores. Correlations were conducted on gender, and the results found that female participants scored higher in math while male participants scored higher in reading.

Table 5

Literacy and Math Pretest and Posttest By Gender From 2017-2021

Years	2017	2018	2019	2020	2021
Reading Gains/Lose by Gender	N/A	F: +3.1151 M: +4.7539 Unknown: +3.5066	F: +1.8929 M: +2.0436 Unknown: +1.4853	N/A	F: +3.0158 M: +3.5966 Unknown: +2.3053
Math Gains/Lose by Gender	N/A	F: +4.5565 M: +5.7372 Unknown: 5.7634	F: +2.3855 M: +2.2380 Unknown: +1.8515	N/A	F: +6.2400 M: +4.6800 Unknown: +2.3214

Note. Participants of the Power Scholars Academy program were comprised of 1,567 participants from 2017 to 2020. Male participants scored higher in reading than female participants. Female participants scored higher than male participants in math.

Summary of Findings

This section highlighted the demographics of the Power Scholars Academy student population of 1,567 within the study as well as the literacy and math results of the program to answer the research questions. The study was limited to only those students who participated in the Power Scholars Academy program during the year 2017-2021.

Does the summer learning loss prevention program Power Scholars Academy have a positive impact on the achievement of students in literacy/ready and math?

The results of the study yield positive results that the Power Scholars Academy program demonstrated a positive impact on students in literacy/reading (+1.05-3.7) and math (+1.5-5.88), showing both an increase in both reading and math throughout the course of the program from 2017-2021. The analysis of data for gender were provided for program participants, and although by slim margins, overall, girls performed better in math and boys performed better in reading. Gils had the highest months' growth in math in 2019 and 2021 and boys had the highest months' growth in reading for 2018, 2019, and 2021.

With the core goal of the program to improve academics and gain healthy views towards learning, the PSA curriculum utilized conventional methods of differentiated study with non-conventional, holistic methods such as growth mindset to engage student learning in a variety of ways. Overall, the data presented indicated that utilizing summer for continued academic development and growth is a viable option for the long-term success of students, and educational policy leaders working towards closing the academic achievement gap.

Summary

This study set out to examine the relationship between the achievement gap and summer learning loss. In addition to examining whether a summer learning loss prevention program improved the academic literacy of students during the summer, it also explored whether any correlations existed based on another demographic status. The study was limited to only the 1,567 students who participated in the Power Scholars Academy program during the 2017-2021 summer terms. Participants within this study live in low-income communities where access to summer opportunities were limited. As outlined in chapter 2, the effects of the achievement gap are under constant discussion with the government mandating programs to solve the issue, yet it persists. The results of the study yield positive results that the Power Scholars Academy program demonstrates a positive impact on students' performance in literacy/reading (+1.05-3.7) and math (+1.5-5.88) during a 5-week summer program. Summer learning loss prevention programs such as Power Scholars Academy is a viable option for students who lack access to educational and enrichment opportunities during the summer and can benefit the long term success of all students.

V. Summary, Conclusions, and Recommendations

Summer learning loss prevention programs should become an essential part of how educators approach the learning outcomes of students. From the inception of this research and the profound changes that the world has experienced with the onset of a pandemic, institutions of learning have had to be creative with learning practices, including providing virtual academic environments. Summer learning will become vital during this time for the success of students who fell behind during the pandemic. The theoretical perspective of this interpretive study was described through the lens of Human Capital Theory (HTC) because its framework examines relationships to the specific areas identified within this study. This chapter will analyze the findings presented in Chapter 4. First, the researcher will investigate the significant findings of Chapter 2 before examining the achievement scores to evaluate the overarching question of if the Power Scholars Academy program had a positive effect on achievement in literacy and math. Lastly, the limitations and conceptual framework will be articulated to address future studies.

In 2017, the primary investigator assisted with the startup of the Power Scholars Academy program located within the territory examined within the study. As a low-income student myself, I experience first-hand how the lack of access to resources created challenges and barriers to academic success. As the Site Leader of Power Scholars, I witnessed program participants that ranged from a strong family support system to very little support, but all participants had a lack of resources, income, and academic supports during the summer months'' that could make a difference in the

students' lives beyond the summer. The remainder of this chapter will address the research questions and other significant findings of the research.

Summary of Findings

The operation of summer programs varies by school districts and by schools within the district. A plethora of studies regarding the academic achievement gap and summer learning loss exists in literature and will continue to grow as learning needs are assessed. Research shows that student achievement is largely a function of poverty and lack of resources. Educators are incorporating nontraditional methods such as growth mindset into daily class activities to build on students' self-efficacy and confidence in their learning environments. Although there were no significant correlations between gender and race, outcomes of this analysis show a positive impact on the achievement of students in literacy/reading (+1.05 - +3.7 months'' growth) and math (+1.5 - 5.88 months'' growth) for participants in the Power Scholars Academy program. Findings from this research informs these educational leaders that the PSA program not only benefits students of economically disadvantaged populations but all students.

Implications

The focus of this study was to evaluate the Power Scholars Academy program. The program is offered during the summer and serves as an academic bridge between the summer and the school year. This study focused on literacy/reading and math specifically to measure the growth of program participants rather than including data from students who did not attend the summer program. This was done for several reasons. First, this study was designed to measure the success of participants who participated in this specific summer program. Second, BellXcel was only able to

provide data for actual PSA participants. It would be difficult to measure the growth of students who were not a part of the summer program. Third, BellXcel offered more opportunities. for example, BellXcel also provides a curriculum for after-school programs, which would yield the same results and show gains for an afterschool program in addition to the summer program.

Themes emerged from the analysis of this study; findings carry implications for various audiences to improve future efforts to reduce the summer learning gap:

Educators- early identification of literacy challenges are critical in addressing the needs of students and finding assessment tools that are effective. Given the positive results within this research study, utilizing specific elements of a successful summer program can be replicated to reach and impact the lives of more students in need of the program.

Power Scholars Academy educators- increasing staff, training, and working on ways to improve the attendance rates of students could help better identify and improve the optimal balance between components and the fidelity measures of the program. Participants benefited from the program, but this benefit could be greater with carrying out all the fidelity measures of the program and finding solutions that work in supporting students.

For policymakers- evidence suggests that low-income students lose more in reading and math during the summer relative to their higher-income counterparts, therefore, there is value in considering the finding of this study. Power Scholars Academy is an innovative, academic summer program with a strong asset-based youth development approach. Identifying additional funding to provide more staff, training,

materials, and supplies would benefit students that fall within the achievement gap group.

As presented in Chapter 2, government-mandated educational policies and programs have always aimed at addressing the academic achievement gaps, but the success of said programs is questionable. Addressing summer learning loss and leveraging access to academic resources during out-of-school time is an effective way to address the gap. During the climate where the outbreak of COVID-19 paused education and many schools closing, the gap will grow even more if we do not look at education in informal ways and address it from a holistic approach. As discussed in Chapter 4 and addressing educational theories that emerge as we attempt to find the best recourse in addressing an ever-growing issue during a national pandemic.

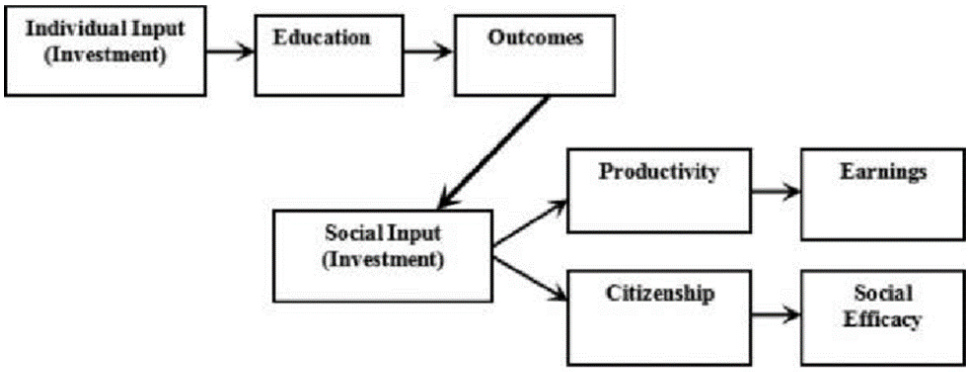
Holistic approaches such as growth mindset, as discussed in Chapter 2, are important to help students think differently with the idea that *if you change the way you think, you can change the way you learn* as they overcome obstacles they may face in educational environments- switching the focus from barriers and obstacles to confidence and expectation. We are experiencing a shift in the way we live, work, worship, and now, how we educate.

This type of study will also explore if 5-weeks during the summer is enough time for significant gains that would affect students' academic performance during the school year.

Theoretical Framework

The theoretical aspect that emerged included human capital theory (HTC). HTC was utilized within this study because its framework examined the relationships

between education, economic growth, and social well-being. The infiltration of HCT into education policy is observed primarily in the use of economic reasoning to justify the need to educate students for the twenty-first century (Choo, 2018). HCT is investment in people through training and education which has a direct and indirect impact on all stakeholders at large (Nafukho et al.,2004; Swanson & Holton, 2001).



Source: Swanson and Holton (2001, p. 110)

Research demonstrates that when more money is spent on education for students from low-income families, achievement and graduation rates improve (Darling-Hammond, 2019). Participants within the study were lived-in low-income communities where educational institutions rely on state and federal funding to provide services in addressing the needs of students. Offering Power Scholars Academy shows the investment of policymakers and educational leaders in academic achievement of low income students. With education serving as one of the key components to improving human capital, building the scholastic ability of all students is vital to increasing the capacity of the nation. Cultivating knowledge by developing new processes for how we educate and being creative in those approaches is the true way of building human capital and increase educational impact.

Assessment Achievement

Although this study was limited to only the students who participated in the Power Scholars Academy program during 2017-2021. It showed that participants during increased their learning during the 5-week summer academic programs; therefore, the program has proven to have a positive impact on the achievement of students in literacy/reading and math.

Tables were presented in chapter four, highlighting the profile of the participants within this research study, including data on test scores, race, and gender. Although participants in the program came from low-income communities, there was not enough data on income in order for the information to be captured for this study; however, the demographic information of the county in which participants live confirmed that over the county has a high percentage of economically disadvantaged populations. Tables measured the growth of participants in both literacy and math, and that gender was not statistically significant between the two groups. Students who participated in the Power Scholars Academy summer program for 5-weeks during the years 2017-2021 and were assessed showed gains in both literacy/reading and in math.

Recommendations for Further Research

While thousands of studies have been previously conducted to study various aspects of learning loss, this topic is far from being exhausted as a research area. If Summer loss is not incorporated into the models of student ability growth, assumptions will be violated because Fall scores will be overestimated, and Spring scores will be underestimated, which can be particularly problematic when evaluating teacher or school effectiveness (McNeish & Dumas, 2020). Specifically, new studies can be

conducted in the areas of using summer learning as an opportunity to support the loss of education during the pandemic. The impacts of summer learning and its long-term effects during a student's academic career can be reviewed in all areas of education. The following recommendations are offered as a starting place for future research and for school districts to consider:

1. Attendance was a clear issue, especially when more than half of the program's participants missed either the pretest or the posttest. Assessment days are vital in measuring scores to determine if the fidelity of the program was beneficial. Future research could investigate the reason for lack of attendance and identify if there were any barriers such as transportation or family problems that hindered regular participation.
2. Exploring the impacts of variations summer learning programs and how it could help better support the different lifestyles of the students' learning environments. For example, examine if in-person, virtual, full-day, or half-day sessions work better for different student populations and if the time influence participation.
3. Tracking the success of program participants throughout the year to see if the summer program improved students' overall performance.
4. Examining the impact that parent involvement has on summer learning programs. Does an engaged parent yield a better test result? And to what extent should parent involvement be required.
5. Examine the effectiveness of schools and community-based organizations that are providing the program. Would a student score differently if they were in a

different environment? Comparing different locations such as schools, churches, and community centers to see if different locations yield better results.

6. Explore more holistic forms of teaching to determine if it makes a difference in a student's learning environment and learning success.
7. Addressing the problems identified by the COVID 19 Pandemic and its effect on students learning, and how the use of summer programs can help students get back on track after an almost two year closure of schools.

This listing of future directions for research is certainly not conclusive but is a starting place for researchers and school districts interested in examining the effectiveness of summer programs and summer learning overall.

Summary

In summary, this study outlined the impact of the summer learning loss prevention program, Power Scholars Academy. This research suggests that the BellXcel program had an important impact on the summer learning of its participants during 2017-2021. These results are of particular importance given the shift of public policy focusing on education after living through a pandemic. It is the result of this study that suggests that the Power Scholars Academy program has positive and substantively important impacts on the learning of not only economically disadvantaged student populations, but all students. These findings may also be relevant for other summer learning programs and for questions related to addressing the achievement gap through summer learning initiatives. Further research on the impacts of variations of summer learning programs could help to better identify the optimal balance and thereby improve future efforts to reduce the summer learning gap.

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