

**Access to Quality Supplemental Educational Programs for K–12 Students in Underserved
Communities**

by

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Abstract

This organizational study employed a qualitative design approach, utilizing semi-structured interviews, to understand the experiences of 13 participants from underserved communities who attended a summer STEM program between 2015 and 2020 and examine whether their experiences impacted their academic outcomes. The study, premised on Bronfenbrenner's ecological model and critical race theory, explored how the influences in children's environment impact their developmental outcomes, positive or negative. It also sought to understand how the permeation of systemic racial barriers impacts access to salient educational resources for children in underserved communities. Three questions guided this research into expanding access to quality supplemental educational programs for K–12 students in underserved communities: How do students from underserved communities who participated in Strive Academy's summer STEM program perceive their experience? Based on students' perceptions, what role does Strive Academy's summer STEM program play in improving students' academic outcomes? Based on students' perceptions, how does Strive Academy's summer STEM program help students overcome stereotyping related to race and class? The prevailing findings from the study revealed the positive impact of the summer STEM program on the participants' academic outcomes and underscored the organization as offering an exemplar supplemental educational program to students in underserved communities. Additionally, the study highlighted an opportunity for the organization to reimagine its supplemental educational program in a move toward a culturally inclusive design comprising antiracist and antibias components. The recommendations presented aim to improve and expand Strive Academy's summer STEM program to reach more underserved communities. Finally, the study offered considerations for future research, salient to addressing the problem of practice.

Keywords: supplemental educational programs, afterschool programs, ecological model, critical race theory, academic outcomes

Dedication

To Clementine Maragh, my beloved grandmother—words fail to express the depth and breadth of the impact of your love and nurturing. I am at this milestone because of your selflessness and sacrifices. How I wish you were alive to see me now.

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Chapter One: Introduction to the Study

Parents across the United States seek the support of supplemental educational programs to provide an academically enriching and safe environment for their children during out-of-school hours (Afterschool Alliance, 2017). Supplemental educational programs, also known as out-of-school or afterschool programs, provide a safe, nurturing, and academically enriching environment for children before school, after school, and during the summer (Strawhun et al., 2014). Research indicates that what children do during out-of-school hours has significant implications on their overall academic, social, and personal development (Durlak et al., 2010). The authors posited that children benefit from structured programs promoting positive engagement, improving academic performance, and providing a safe and enriching environment. Kneebone et al. (2011) found that where children live impacts the quality of traditional education they obtain and their access to quality supplemental educational programs influences the degree of success they achieve in the future. Furthermore, children typically attend schools in their neighborhoods, and for those living in underserved communities, these schools receive low scores on standardized tests, have high dropout rates, and are of subpar quality. In many underserved communities, the demand for and access to quality supplemental educational programs are disproportionate compared to other communities.

Juxtaposed to students living in higher-income communities, students from underserved communities do not have equal access to quality supplemental educational programs (Annie E. Casey Foundation, 2012; Gentry et al., 2017; Malone & Donahue, 2017). When traditional school systems do not meet children's educational needs, parents look to supplemental educational programs to compensate for the deficit (Afterschool Alliance, 2016). However, the options are limited in underserved communities comprising predominantly Black and Latinx

students, contributing to higher high school dropout rates, greater barriers to college entry, and limits placed on students realizing their full potential. The present research comprises an evaluation study of a quality supplemental educational program that provides students with educational resources typically lacking in underserved communities.

Background of the Problem

Students living in underserved communities have historically experienced disproportionality in access to quality educational resources compared to their peers in other communities (Scott et al., 2018). Research shows that participation in quality supplemental educational programs improves learning and academic outcomes for K–12 students, accounting for higher high school graduation rates and college acceptance and completion (Farmer-Hinton et al., 2009; Shernoff, 2010). Nevertheless, in 2016, only 46% of students graduating high school from underserved communities enrolled in postsecondary institutions compared to 78% of students from higher-income families (Cahalan et al., 2018). This problem of practice addresses expanding access to quality supplemental educational programs for K–12 students in underserved communities. The evidence highlights disparity due to systemic racial barriers present in underserved communities resulting in disproportionality in access to funding and other resources needed to create and administer quality supplemental educational programs (Cornelli-Sanderson & Richards, 2010; Gandolfi et al., 2021; McNamara et al., 2020).

Dorn et al. (2020) highlighted that the long-term effect of the COVID-19 pandemic on the achievement gaps among students in underserved communities compared to higher-income communities speaks further to the need for equal access to quality supplemental educational programs. Afterschool Alliance's (2020) research underscored the significance of supplemental educational programs in offering academic resources and support to K–12 students during the

pandemic when traditional schools curtailed curriculum and face to face learning, impacting families in underserved communities. Furthermore, systemic racial barriers exacerbated the digital divide and inequality experienced by K–12 students in these communities limiting access to required resources conducive to learning (Gandolfi et al., 2021). Gordon and Cui (2018) revealed that the intersectionality of race and neighborhood has influenced academic outcomes. Accordingly, the quality of education available to children and the opportunities contributing to academic success are corollary to the communities in which they live, and as a result, those living in underserved communities are at a disadvantage.

Context of the Study

This organizational study explored expanding access to quality supplemental educational programs for students in underserved communities and employed a qualitative design approach in understanding the experiences of students who participated in Strive Academy’s (a pseudonym) summer STEM program. According to its website and promotional materials, Strive Academy is a nonprofit community-based organization that provides supplemental educational programs for students in the 1st through 12th grades, preparing them for academic success through their K–12 school journey and acceptance to college. Strive Academy began offering supplemental educational programs in the early 2000s as an affiliate to a local community church that provides a significant portion of Strive Academy’s financial and management support, and assists with recruiting students from its congregation and neighboring communities for the programs. Additional funding for Strive Academy originates from grants, including an annual partnership with a local university, and donations from individuals and corporations. Strive Academy’s mission underscores bridging the achievement gaps in underserved communities, comprising primarily Black and Latinx students, by providing access to quality educational

programs and resources that supplement the traditional school curriculum and creating a leveled playing field for students in these communities.

Before the COVID-19 pandemic in 2020, Strive Academy served an average of 250 students annually through its supplemental educational programs, including a year-round after-school tutoring and homework program, college preparation workshops, and a summer (science, technology, engineering, and mathematics) STEM program. The primary foci of these programs are to equip students with the skills and resources needed to excel academically through all grade levels, build self-efficacy in mathematics, improve overall self-confidence, prepare for college entry, expose them to a wide range of STEM related career paths, and enable them to become good citizens of their communities. The student population comprises approximately 90% Blacks, 9% Latinxs, and 1% other races from local elementary through high schools.

Organizational Structure

Strive Academy's organizational structure includes a board of directors, an administrator, program directors, teachers, tutors, and administrative support, with 100% of the staff employed with part time status and holding full time positions at the affiliated church and at outside K–12 educational institutions and other organizations, bringing their experiences and expertise to the organization's supplemental educational programs. Additionally, the program directors hold graduate degrees in education, counseling and related majors, and each has over 15 years of experience working with K–12 students. The teachers are experienced and credentialed, bringing their classroom management and mentoring experiences to their roles at Strive Academy. The tutors are primarily current college students. Volunteerism is also a central part of the staffing pattern, with experienced professionals in various supporting roles, enhancing the organization's capacity to administer the programs to underserved students. Recruitment of students for the

supplemental educational programs occurs in various forms, through parents sharing with other parents, staff sharing information with their respective K–12 school systems, and through the organization’s periodic marketing campaigns through its website and social media platforms, promoting the benefits of the programs.

Strive Academy’s Summer STEM Program

Strive Academy’s summer STEM program is the organization’s premier program, offered over a four to six-week period annually during the period when local schools are on recess for the summer. Program classes are held five days per week for four to six hours daily. Each year, an average of 70 rising 6th through 12th-grade students participate in this intensive yet engaging summer program that delivers an interactive STEM focused curriculum, designed around mathematics as the core subject. The program aims to mitigate the summer learning loss, improve efficacy in mathematics, prepare students for the new school year, increase exposure to STEM careers and role models in the field, and create a college going mindset through college tours and related workshops, thereby enabling students, especially those from underserved communities, to see others who look like them succeeding.

The program is fully sponsored through partnerships with a local university system, the affiliated church, and other donors. In addition, parents may pay a minimal incidental fee to offset some indirect program costs, further discounted to accommodate financial needs. Student recruitment for the summer STEM programs is ongoing, with parents reserving spots at the end of the previous year’s program or early in the school year. Student recruitment drive begins early Spring with promotion materials shared through the organization’s website and social media pages. Additionally, students are recruited from local middle through high schools through new and established relationships with school administrators and counselors.

Organizational Goals

As the prevailing COVID-19 pandemic exposes the growing disparities in the underserved communities, Strive Academy seeks to expand awareness to its program services, in particular, its summer STEM program, to reach more underserved communities, increasing the number of students who participate in its quality supplemental educational programs. Research revealed the inequitable access to educational resources due to systemic racial barriers threatens any recent gains made in closing the opportunity and achievement gaps for Black and Latinx students in underserved communities (Gandolfi et al., 2021). Thus, the results of this evaluation study into Strive Academy's summer STEM program stand to benefit the organization's leadership, families seeking quality supplemental educational programs, and K–12 school administrators looking for community partnership in closing achievement and opportunity gaps existing in underserved communities. In addition, the study of students who participated in Strive Academy's summer STEM program enables the organization to glean insights into its program's strengths and opportunities for improvements as it positions itself as an exemplar supplemental educational program and expand its reach to more students in underserved communities, a move toward closing the achievement and attainment gaps.

Purpose of the Project and Research Questions

The purpose of this evaluation study was to understand the experiences of students from underserved communities who participated in Strive Academy's summer STEM program and to examine whether their experiences influenced their academic outcomes. The findings generated from this study will be used to create recommendations for improving and expanding Strive Academy's supplemental educational programs, increasing the reach to more students in

underserved communities. The questions that guided research into expanding access to quality supplemental educational programs for K–12 students in underserved communities are:

1. How do students from underserved communities who participated in Strive Academy's summer STEM program perceive their experience?
2. Based on students' perceptions, what role does Strive Academy's summer STEM program play in improving students' academic outcomes?
3. Based on students' perceptions, how does Strive Academy's summer STEM program help students in overcoming stereotyping related to race and class?

Significance of the Study

Addressing the problem of expanding access to quality supplemental educational programs in underserved communities is paramount for several reasons. First, research revealed that participation in quality supplemental educational programs positively impacts children's behavior, improves academic performance, reduces dropout rates, and strengthens the community in which they live (McCombs et al., 2017; Newman, 2020). Second, when children participate in supplemental educational programs, they are more likely to excel through high school and are better prepared academically to secure acceptance to college (Philp & Gill, 2020). Third, Philp and Gill's (2020) study showed that parents in higher-income communities invest their resources and use their influences to ensure their children's academic success from preschool to college graduation. Conversely, many parents in underserved communities lack adequate quality educational resources to guide their children from preschool to college graduation with fewer choices and limited resources. Fourth, Dorn et al. (2020) revealed that the learning loss exacerbated by the ongoing COVID-19 pandemic has disproportionately impacted students in underserved communities, already experiencing gaps in achievement, compared to

students living in higher-income communities. Finally, despite progress toward racial equity in the United States, systemic racial barriers continue to impact underserved communities, preventing or limiting access to salient educational resources needed to close achievement and attainment gaps for Black and Latinx students (Dorn et al., 2020). When children are exposed to a positive and enriching environment early, they excel through high school and enter college with a mindset to succeed and become productive citizens, regardless of their socioeconomic status. This evaluation study situated Strive Academy's summer STEM program as an exemplar, providing much needed supplemental educational resources to K–12 students in its surrounding communities with the goal for expansion.

Overview of Theoretical Framework and Methodology

Urie Bronfenbrenner's ecological theory and critical race theory (CRT) were used in this study to explore expanding access to quality supplemental educational programs for K–12 students in underserved communities. The Bronfenbrenner model demonstrates the importance of the five nested layers of environmental influences surrounding children, shaping their behavior and development through to adulthood. Bronfenbrenner (2009) defined the microsystem as the first layer of influences and comprises relationships and resources in developing children's immediate environment, directly impacting their experiences and outcomes. The mesosystem is the second level of influences that interconnects the relationships in the immediate environment, or microsystem, with those external to the developing children, illustrating how decisions and behaviors in one or more settings impact children. The exosystem comprises influences and relationships, including policymaking, that are external to the developing children but impact the decisions made concerning them. The macrosystem encompasses the cultural values and beliefs impacting the developing children. These layers of

environmental influences continue through to the chronosystem, which comprises the changes across time spent in the environment.

The CRT framework postulates that racism is not an isolated and random act by individuals, but rather it is the standard order of how society functions, systemically influencing policies and access to resources for underrepresented communities (Ladson-Billings, 2013), comprising primarily families of color. Additionally, the CRT framework suggests race and racism originate from a position of dominance and dispels the notion that people of color function from deficit thinking and are solely responsible for their poor academic outcomes (Yosso, 2005). Understanding the environment and influences that impact K–12 students in underserved communities enables Strive Academy to seek resources to address the disparities and move toward closing the existing opportunity and achievement gaps.

The Bronfenbrenner’s ecological model illustrates a salient understanding of the environment and interconnected influences that impact K–12 students in underserved communities. The reciprocating relationships encountered enable an evaluation of resources available and needed in K–12 students’ environment to address the inequality in access to quality supplemental educational programs and move on a trajectory toward closing the opportunity and achievement gaps. Applying CRT as a framework provided the lens for critical analysis of systemic racial policies and practices that impact access to supplemental educational resources for students in underserved communities. It also provided a deeper understanding of White-dominant historical thinking that students of color, especially those from underserved communities, enter the school system with cultural deficiencies (Yosso, 2005). Additionally, the concept of converging interest enables the CRT framework to promote mutually beneficial

approaches to addressing education barriers that impact students of color, especially those in underserved communities (Ladson-Billings, 2013).

This evaluation study employed the qualitative inquiry approach, using semi-structured interviews, in understanding how students who participated in Strive Academy's summer STEM program interpreted and made meaning of their experiences. The qualitative research approach comprised the purposeful sampling method, defined as non-probabilistic (Merriam & Tisdell, 2016), allowing the researcher to gain understanding and insight from the sample selection. Merriam and Tisdell (2016) also described qualitative research as premised on the belief that people construct knowledge to make meaning as they engage in an activity, experience, or phenomenon. Accordingly, the researcher analyzes words as data and interprets them to understand participants' experiences. Utilizing semi-structured interviews enables the researcher to hear the participants' experiences and analyze how their stories shaped their academic outcomes. McIntosh and Morse (2015) highlighted semi-structured interviews as a data collection strategy that utilizes open-ended questions to engage the participants and facilitate responses regarding the phenomenon under study. Thus, the semi-structured interview, known for its flexibility, enabled me to probe further the participants' responses resulting in an information-rich data collection, leading to the recommendations pertaining to expanding access to quality supplemental educational programs at Strive Academy.

Definition of Terms

The definitions clarify key concepts enhancing the readers' understanding of the problem of practice and the current literature underscoring the impact of access to quality supplemental educational programs for K–12 students in underserved communities.

Academic performance is synonymous with academic success or achievement. Farooda et al. (2011) underscored academic performance in their study as understanding “the factors that benefit and hinder the academic progress of an individual's education” (p. 10).

Deficit thinking comprises the belief that the cultures, languages, and families and communities’ influences are blamable for the low academic performances of students of color, especially Blacks and Latinxs, and not the systemic racial barriers, resulting in inequities (Valencia, 2010).

Equal access refers to eliminating structural inequities in society, including disparities in financial and social capital (Culver & Aziza, 2020) that primarily impact Black and Latinx students living in underserved communities.

The quality of the supplemental educational programs comprises attributes such as caring adults building warm and supportive relationships and a space that offers physical and emotional safety for developing children to feel at home (BGCA, 2017; Kataoka & Vandell, 2013).

Stereotyping holds negative perspectives toward members of a race, class or group based on their membership or association with that race, class or group (Brown, 1995).

Systemic racism encompasses the systematic oppression embedded in institutions and social structures through laws, policies, and practices that inhibit or limit crucial resources to people of color, resulting in sustained inequalities (Feagan, 2006).

Underserved communities, also referred to as low-income, marginalized, or underrepresented communities, are areas where the average family income is 80 percent or less than the benchmarked areas or where the poverty rate is at least 20 percent (Benzow et al., 2020) and comprise a majority of Black and Latinx neighborhoods.

Organization of the Study

This evaluation study comprised the five-chapter dissertation model. This chapter introduced the readers to the problem of practice for this study, the importance of the study, the theoretical frameworks and methodologies, and the definition of concepts used in the study. Chapter Two provides a review of current literature underscoring the scope of the study and will address current research congruent to the study and the conceptual framework undergirding the study. Chapter Three describes the methodologies used in the qualitative design to select the participants and the collection and analysis of data, the ethical underpinnings and the limitations and delimitations of the study. Chapter Four details the findings of the study. Chapter Five will summarize the recommendations for improving and expanding Strive Academy's supplemental educational programs.

Chapter Two: Review of the Literature

This chapter encompasses a review of relevant literature related to the importance of access to quality supplemental educational programs in shaping the academic outcomes of K–12 students living in underserved communities and the conceptual framework used to develop the research and data collection process. The chapter commences by examining the historical context of supplemental educational programs, followed by a study of the impact of access to and participation in quality supplemental educational programs on K–12 students living in underserved communities. It then discusses the disproportionality of access to educational resources in underserved communities compared to higher-income communities by exploring how racial barriers, costs, and availability preclude Black and Latinx students from maximizing these programs' benefits. Finally, it introduces the conceptual framework premised on Bronfenbrenner ecological theory and critical race theory (CRT) to understand this problem of practice.

Historical Context: Supplemental Educational Programs

Supplemental educational programs have become an integral contributor to providing a safe, nurturing, and academically enriching environment for children during out-of-school hours. Parents look to these programs beyond simple childcare needs and seek programs that offer academic support in preparing students for college and careers (Philp & Gill, 2020). While the attention to and demand for these programs have increased over the last two decades, research revealed that they have been a significant part of American culture for at least a century (Kleiber & Powell, 2005; Maloney et al., 2009; Vandell et al., 2005). As the studies indicated, during the 1930s through 1960s, changes to the adult labor force, reduction in child labor, and the concern for children's nurturing, safety, and social development during out-of-school hours led to the

emergence of afterschool programs (Maloney et al., 2009; Toomey, 2019). Furthermore, during the 1980s, afterschool programs began defining the quality standards of the programs as they address juvenile crime prevention, gaps in academic achievements, and changes to the family structure with the influx of mothers and primary caregivers in the workforce (Kremer et al., 2015). The United States (U.S.) Department of Labor's 2005 report found that, in 2004, 78% of mothers with children under 18 years old were in the workforce compared to 46% in 1965 (Maloney et al., 2009), and in 2019, 76% of mothers with children under 18 years old were in the workforce (Pew Research Center, 2015). Additionally, the report highlighted that 46% of households have both parents working full-time compared to 31% in 1970. As parents and guardians spend more time out of the home, they look to supplemental educational programs to provide their children an enriching and safe environment.

Carnegie Council on Adolescent Development's (1992) report examined the risks and opportunities associated with out-of-school hours, positing that children are impacted by the influences in their home environment and those in their neighborhoods and broader communities. The report revealed that while many American children experience healthy support from their families, schools, and communities, it is not the same for other children who face inequities in access to fundamental support and resources. Halpern's (2002) study on the history of afterschool programs emphasized how the ethnic and racial changes in low-income communities impact the number and quality of programs available to Black and Latinx children during the 20th century. As more parents work outside the home, juggling myriad personal and professional challenges, and as low-income communities become less safe, the demand for afterschool programs increases. This program demand competes for the limited financial resources available to provide quality enriching programs (Halpern, 2002) in these communities.

Thus, notwithstanding the passage of time, underserved communities continue to experience an increased yet unmet demand for supplemental educational programs.

The demand for structured out-of-school school programs that support social-emotional learning and provide a supportive environment for children gave rise to organizations such as the YMCA, Boys and Girls Clubs of America, 4-H Club, and other community-based programs (Hurd & Deutsch, 2017). While the earlier programs offered academic support, the primary focus was to provide a safe and nurturing environment to aid children in building social and emotional competencies and self-expression (Hurd & Deutsch, 2017). However, as the testing and academic requirements for schools placed a demand on students and parents, afterschool programs were also pressured to expand their activities to include academic support for their students (Halpren, 2002; Hurd & Deutsch, 2017). Likewise, studies illustrated children attending high-quality childcare and afterschool programs demonstrated higher achievements in mathematics and reading throughout adolescence, leading to higher income in adulthood (Dearing et al., 2009; Roth et al., 2010). Students in higher-income communities utilize supplemental educational programs as enrichment resources for college and career preparation and not merely for providing a safe environment (Philp & Gill, 2020). Conversely, the needs in underserved communities encompass addressing the achievement and attainment gaps while providing a safe and nurturing environment. As students' achievement and attainment gaps in underserved communities continue to widen, parents look to supplemental educational programs to compensate for the deficit.

Impact of Access to and Participation in Quality Supplemental Educational Programs

There is disproportionality in access to quality supplemental educational programs for students living in underserved communities impacting their development and academic

outcomes. Parents rely on supplemental educational programs to provide supervision and academic and developmental support for their children during hours that they would generally be unsupervised (Afterschool Alliance, 2014). The study found that 23% of families depend on supplemental educational programs to provide an environment where their children are safe, engaged, and feel supported during out-of-school hours when parents are at work. Moreover, 83% of these parents believe that participation in supplemental educational programs helps to reduce academic and behavioral problems associated with unsupervised children. As the demand grows, so does the need for quality programming, a lack evident in underserved communities. Quality supplemental educational programs create an environment where children thrive, feel safe, build meaningful relationships with nurturing adults and peers, develop academic and social skills that reinforce positive behavior and success through their K–12 school years and beyond (Strawhun et al., 2014). The limited availability of quality supplemental educational programs in underserved communities contributes to higher high school dropout rates and significant barriers to college entry, placing limitations on Black and Latinx students’ realization of their full potential.

A Safe and Enriching Environment for Students

Bronfenbrenner and Ceci (1994) examined the importance of the interconnected layers of influences surrounding children shaping their development, behavior, and outcomes. Supplemental educational programs are located in the microsystem of the Bronfenbrenner ecological model and provide education and social resources that are crucial to the development of children. The relationships experienced in these environments impact both the service providers and developing children, thereby fostering connections (Guy-Evans, 2020) that transcend childhood years. According to Hayes et al. (2017), these relationships and systems

impact children's learning and development through a holistic approach. Furthermore, the effectiveness of high quality and regular interactions of reciprocating relationships between nurturing adults and developing children shape who they become. Using the framework of nurturing environments, Biglan et al. (2012) emphasized the role environments play in influencing children's developmental outcomes. This study showed that nurturing environments mitigate adverse biological and psychological problems impacting children's successful development and accentuated the need for targeted programs and public policies as interventions to promote such environments. Consequently, there is a compounded effect that lack of access to educational resources has on the development of children in the neighborhoods in which they live.

Kataoka and Vandell's (2013) study highlighted that the quality of the supplemental educational programs correlates with the impact of participation and outcomes students experience. The study conducted on 186 sixth and seventh-grade students over a two-year period, 78% of whom were from low-income communities, revealed that students reported improvements in prosocial behavior and tasks completion in programs with emotionally supportive staff. According to Kuperminc et al. (2019), the relationships between nurturing staff and students in enhancing the students' experience contribute to positive development through adolescence. While the quality of supplemental educational programs is subjective, the authors illustrated the relational practices of the staff in establishing nurturing relationships with the students as a critical component of assessing the programs' quality. BGCA (2017) and Kataoka and Vandell (2013) also asserted that the quality of the supplemental educational programs comprises salient attributes such as caring adults who foster warm and supportive relationships in a space that offers physical and emotional safety where the developing children feel at home.

Consequently, children benefit from environments that provide supportive and nurturing relationships, especially those lacking strong support from their family structure or underserved communities.

Academic Importance and Impact

Access to and participation in quality supplemental educational programs benefit students socially and academically regardless of the communities in which they live. Gentry et al. (2017) conducted a qualitative study that assessed the effects of participation in supplemental educational programs on high-achieving students from underserved communities. This three-year study evaluated the participants through standardized testing and included 44% of high-achieving students from underserved communities sponsored through a grant. The result emphasized that, when given access to the same quality supplemental educational programs, students from underserved communities excelled academically, similar to students from other communities who have easier access to these programs. While research on the relationship between participation in supplemental educational programs and academic outcomes offers mixed results (James-Burdumy et al., 2007; Leos-Urbel, 2015), a longitudinal study of nine afterschool programs revealed that students who consistently participated in the programs reported a positive impact on their academic skills and achievements (Grogan et al., 2014). As children grow and develop, they excel socially and achieve academic success when exposed to academically enriching environments.

Springer and Diffily's (2012) research underscored that the programs' quality and frequent participation contribute to students' engagement and academic achievement regardless of their socioeconomic status. This six-week study of 719 students in 2nd-grade through 8th-grade during the 2009-2010 academic year, comprising variables such as regular participation,

students' demographics, academic reports, and attendance records, demonstrated that frequent participation in quality supplemental educational programs positively affects the students' overall academic performance. The results affirmed that students who consistently participated in quality supplemental programs reported grade improvement. Furthermore, Hurd and Deutsch (2017) expounded that the social-emotional learning environment created for children who participate in these programs, enables them to build nurturing relationships with caring and supportive adults. The study showed that children's relationships with programs' staff provide an avenue for self-expression and mentorship, empowering them to build psychological safety and a sense of belonging. Supplemental educational programs provide extended family structures for K–12 students regardless of where they live.

Supplementing Traditional Education Systems

Supplemental educational programs play a central role in student's academic development and outcomes regardless of socioeconomic status. However, students in underserved communities face greater barriers to receiving quality education due to underfunding and low-quality K–12 public school systems, widening the achievement and opportunities gaps experienced by Black and Latinx students (Bridges et al., 2012; Leachman et al., 2017; McCombs et al., 2019). Therefore, addressing education inequity through providing access to quality academic preparation resources will prepare students for academic success (McCombs et al., 2019). Furthermore, Bridges et al.'s (2012) research revealed that parents from underserved communities look to community-based organizations to provide supplemental educational support for their children to offset the deficit of neighborhood school systems. The survey of 753 Black parents illustrated that 43% of the parents seek support from supplemental educational programs in their communities to aid their children in performing well in school and

preparing for college. When neighborhood schools fail to meet academic expectations, parents seek schools outside their neighborhood to give their children better access to quality education. However, there are limitations for low-income students.

McCombs et al.'s (2017) research emphasized that students from low-income communities experience widening achievement and opportunity gaps during the summer months when they are out of school as family income impacts access to summer programs. This study of 43 summer programs examined the effectiveness of supplemental educational programs in mitigating summer learning loss, especially for K–12 students in low-income communities, and found that 75% show promising intervention in improving academic outcomes. Likewise, studies further demonstrated that supplemental educational programs complement traditional school day learning to support and improve students' academic, social and emotional development (McCombs et al., 2017; McElvain et al., 2014; Newman, 2020). Additionally, Afterschool Alliance (2017) conducted a two-year study of 3,000 students from eight states living in underserved communities, demonstrating that the students who consistently participated in supplemental educational programs showed low absenteeism, improved attitude toward learning, and reduced dropout rates. The study also underscored that consistent participation in supplemental educational programs reduces the mathematics achievement gap between students from low-income communities and their peers from higher-income communities. Given educational resources and support, students from underserved communities excel socially and academically, positively influencing the achievement and opportunity gaps.

Exposure to Science, Technology, Engineering, and Mathematics (STEM)

The National Research Council (2011) examined the positive effect of science, technology, engineering, and mathematics (STEM) education and STEM-related jobs on

people's lives and offered STEM as the driving indicator of economic expansion in the 21st century. Conversely, while there is a direct connection between economic expansion and an increase in K–12 STEM learning, about 75% of students in the 8th grade in the United States schools are not proficient in mathematics, the majority of whom are Black and Latinx students. Moreover, the study illustrated that the United States trails most industrialized countries in STEM learning and achievements. Brown et al.'s (2020) examination of a nationwide STEM enrichment program led by scientists and serves over 4,000 middle and high school students annually emphasized the prevalence of educational inequity in the United States, resulting in barriers to access for students living in underserved communities. The study asserted that access to quality STEM education, including well-trained teachers, is disproportionate for students of color, limiting the realization of their full potential.

Chittum et al.'s (2017) research demonstrated that a leading characteristic to engaging children in STEM career fields is garnering their motivation and interest before they reach the 8th grade. This mixed-methods study found that participation in quality STEM-related afterschool programs impacts students' motivational beliefs about STEM. Furthermore, studies showed that investments in STEM education result in high returns in promoting group collaboration, critical thinking, positive academic outcomes, and increased interest in STEM fields, among other achievements, for students (Allen et al., 2019; Sahin et al., 2014). Accordingly, introducing and exposing K–12 students from underserved communities to STEM education create a pathway enabling competitiveness and sustainability beyond the 21st century.

Quality supplemental educational programs create a foundation for K–12 students' ecological development, cultivating their interests in STEM education (Krishnamurthi et al., 2014). In addition, the study postulated that students who participated more frequently in STEM-

based programs reported higher scores in science and improved critical thinking skills compared to those who participated with less frequency or not at all. Moreover, supplemental educational programs provide greater access to STEM-related activities, offsetting the constraints of traditional school day learning (Noam & Shah, 2013). The authors underscored that expanding supplemental educational programs to include STEM-focused activities contributed to narrowing the achievement gaps for students in underserved communities who participate in the programs. The jobs of the 21st century require skills that speak to the importance of early exposure to STEM education (Krishnamurthi et al., 2014). Conversely, majority of the schools in underserved communities continue to be underfunded and poorly resourced, thereby not equipped to meet the needs of students often left behind in the STEM revolution.

The Disproportionality of Access to Quality Educational Resources

There is an unmet demand for quality supplemental educational programs in underserved communities as parents seek academic support and safety for their children during out-of-school hours. However, compared to students living in higher-income communities, students from underserved communities do not have the same access to quality supplemental educational programs, impacting their academic outcomes (Gentry et al., 2017). When children are given access to needed educational resources to aid in their social and educational development, they thrive and succeed academically, irrespective of their socioeconomic status. Nevertheless, in underserved communities, these resources are scarce, further widening the achievement and opportunity gaps.

Cost and Availability of Supplemental Educational Resources

As families seek quality supplemental educational programs for their children, the cost, location, and availability determine their course of action. The cost of not investing in quality

educational programs for children, especially those in underserved communities, becomes a burden on society, including the impact on the justice system through an increase in juvenile and adult crimes and the economy through lower employment rates, higher healthcare, and welfare costs (Strong Nation, 2019). Notwithstanding these discoveries, there remains a disparity in access to quality supplemental educational programs in underserved communities due to high program costs and limited options. McCombs et al. (2017) found that supplemental educational programs in underserved communities rely on federal, state, and local governmental agencies for 78% of their funding; however, budgetary cuts and changes in funding priorities of these agencies adversely impact the amount allocated annually. Leachman et al.'s (2017) study demonstrated that the formula allocation for K–12 school funding in the United States reflected 45% from local government revenue, 47% from State revenue, and 8% from federal revenue, with local revenue primarily generated from property taxes, resulting in the incommensurate allocation of resources to underserved communities. Thus, budgetary cuts and changes in funding priorities of these agencies impact the amount allocated annually to needed educational resources in underserved communities.

Ushomirsky and Williams' (2015) analysis of school funding posited that schools in the highest poverty districts receive approximately \$1,200 less per student than those in the lowest poverty or higher-income areas. Additionally, school districts serving predominantly students of color receive approximately \$2,000 less per student than other districts. The authors further emphasized that the widening disparities in school funding translate to disparities in access to support and resources needed for underserved students' academic success. Afterschool Alliance (2014) asserted that higher-income communities have access to quality educational resources benefiting their residents; however, families in underserved communities experience the

opposite. Consequently, the options are limited in underserved communities, leading to higher dropout rates, greater college entry barriers, and widening achievement and attainment gaps.

Strong Nation's (2019) research demonstrated that \$1 is saved and returned to the community for every \$3 invested in supplemental educational programs. The effects include increased graduation rates and college enrollment, contributing to improved future earning potential, crime reduction, and lower welfare-related costs. The study showed that the high costs of quality supplemental educational programs dissuade parents in underserved communities from pursuing supplemental educational resources. Instead, they seek less expensive alternatives, including leaving their children unsupervised or placing them in programs of subpar quality (Afterschool Alliance, 2017; Gersick et al., 2009). Furthermore, the recession of 2007 continues to have a lasting impact on funding allocation to K–12 schools, curtailing the efforts to eliminate disparity in access to quality education in underserved communities (Baker et al., 2014). As a result, the decentralization of the U.S. Education system spawns uneven funding across school districts, with the highest poverty areas impacted the most. Likewise, McCombs et al.'s (2017) analysis of the economic benefits of quality supplemental educational programs on students from underserved communities found that access to and participation in these programs lead to increased high school graduation rates and financial returns for taxpayers from increased employment and income. When children are exposed to a positive and enriching environment early, they excel through high school and enter college with a mindset to succeed and become productive citizens, regardless of their socioeconomic status.

The Poverty Impact

Examining the impact of poverty on children's mental, physical health, behavioral and academic development, Yoshikawa et al. (2012) underscored that it exacerbates stress, producing

detrimental outcomes. This study offered that the cumulative effects of poverty, when present in early childhood, can impede development and outcomes through later stages in life. The U. S. Census Bureau reported that while the annual poverty rate is consecutively declining, about 34 million or 10.5% of people in the United States live in communities of poverty, of which 14.4% are children under age 18 (Semega et al., 2020). The report further highlighted that Blacks and Latinxs' poverty rates were 18.8% and 15.7%, respectively. Moreover, the Annie E. Casey Foundation's (2021) study illustrated that Black and Latinx children collectively represent 58% of children in all racial groups living in poverty, compared to the national average of 18%. This revelation underscored disparities in access to high-performing schools, among other salient education and support resources for children living in poverty, impacting the development and realization of their full potential.

The U. S. Bureau of Labor data revealed that, in 2020, the national unemployment rate was 9.8% compared to 4.9% in 2019, and included in the 2020 data are the unemployment rates for Blacks and Latinxs of 13.4% and 14.3%, respectively, while the unemployment rate for White was 9% (U.S. Department of Labor, 2020). According to Macartney (2011), children living in poverty are more likely to complete fewer years of school and exhibit cognitive and behavioral problems compared to children in other communities. The author posited that these children's transition to adulthood is further impacted by higher unemployment, perpetuating a cycle of privation. In addition, Scott et al. (2018) disclosed that schools in underserved communities lack access to quality educators providing foundational knowledge and role models for children to emulate. The study illustrated that the wealth gap impacts childhood development and college preparation and acceptance, impeding future upward mobility of those living in underserved communities. Likewise, as the U.S. economy thrives, the U.S. Census Bureau

showed that almost 28% of individuals under the age of 24 live below the poverty threshold exposed to mental, physical, and economic disadvantages (Matthews, 2020). Consequently, Black and Latinx students living in poverty continue to face barriers to a trajectory leading to college access and higher-paying jobs, a contradiction to addressing and achieving educational equity.

There is a high risk of exposure to drug use and other juvenile behavioral problems for children in underserved communities during out of school hours when they are typically left unsupervised (Afterschool Alliance, 2016; Durlak et al., 2010; Strong Nation, 2019). According to Strong Nation (2019), 70% of juvenile crimes are committed during out-of-school hours. While there has been an increase in supplemental educational programs enrollment, more than 11 million children are left unsupervised during the out of school hours (Afterschool Alliance, 2016). Hence, participation in quality supplemental educational programs during these hours is one of the causative factors in reducing juvenile crimes and increasing graduation rates among students living in underserved communities. When children have access to quality supplemental education, regardless of their socioeconomic status, the barriers impeding success are reduced, giving them opportunities to excel through school and beyond.

COVID-19 Pandemic Impact

The effect of the COVID-19 pandemic has pervaded families worldwide and impacted the delivery of traditional K–12 education. Current studies examined the long-term effect on students, particularly those in underserved communities where the learning deficit was already ubiquitous, and found that the COVID-19 pandemic has worsened the disparities in learning and achievement gaps between high-income and low-income students (Adams & Todd, 2020; Afterschool Alliance, 2020; Dorn et al., 2020). Working families with K–12 students face

challenges of maintaining a safe and academically enriching environment amidst working from home or managing an out-of-home schedule during the pandemic (Adams & Todd, 2020). Additionally, supplemental educational programs face COVID-19 related impact posing challenges to the programs offered, staffing, and the number of students served. Dorn et al. (2020) evaluated the impact of the COVID-19 pandemic on the U.S. economy and offered that while the average student will experience approximately seven months of learning loss, Black and Latinx students will experience at least nine months of learning loss, resulting in higher dropout rates and adding to the existing education inequity. Furthermore, the study emphasized the increase in lifetime earning loss for Blacks and Latinxs, contributing to Gross Domestic Product (GDP) decline over the next two decades. Thus, students in underserved communities face persistent challenges to access to quality education, worsened by the COVID-19 pandemic.

Burgess and Sievertsen (2020) posited supplemental educational programs as pivotal to lessening the learning loss experienced during the 2019–2020 school year; however, access to funding and resources has decreased, heightening concerns about continuing programs. Consequently, Afterschool Alliance's (2020) nationwide study of supplemental educational programs reported a decrease in the number of students served. The study examined the impact of the COVID-19 pandemic on afterschool programs and found that at least 78% of program providers are concerned about losing connection with vulnerable children. Additionally, more than 80% of program providers need additional funding to avoid laying off program staff. Adams and Todd (2020) highlighted that as the COVID-19 pandemic prevails, women of color face added workplace barriers, fueled biases, and stereotype threats due to the intersectionality of their race and gender. A 2018 survey showed that women of color comprise a majority of households as primary breadwinners, with 67.5% for Black and 41.4% of Latinx mothers,

compared to 37% for White mothers (Frye, 2020). Furthermore, women of color experience higher and longer unemployment than their White counterparts, contributing to the disparities in providing needed resources for their children.

The Impact of Systemic Racial Barriers

Despite progress toward racial equity in the United States, underserved communities continue to experience systemic racial barriers that inhibit or limit access to resources needed to close achievement and attainment gaps for Black and Latinx students. Ladson-Billings' (2013) study on critical race theory (CRT) underscored racism as the regular order of society imbued with disparities in policies and access to crucial resources, primarily impacting Black and Latinx families. Research showed that governmental policies and historical and societal attitudes promote racial inequities toward citizens of color, creating normalization of racism in organizational, social, and cultural settings (Gerlach et al., 2018). Likewise, the U.S. Census Bureau reported that, in 2019, 14.4% of children under age 17 live in households with income below the threshold of poverty (Matthews, 2020). The study showed that the disparity resulting from systemic racism anteceded the COVID-19 pandemic with 26.4% of Black and 20.9% of Latinx children compared to 8.3% of White children living in poverty. As a result, Black and Latinx students continue to be left behind as the equity and achievement gaps widen, worsened by changes in the economy.

Gordon and Cui (2016) examined the role race plays in children's academic achievements and asserted that regardless of the socioeconomic status of the community, Black students performed lower academically than White students. Additionally, students living in communities of poverty encountered greater racial disparity in academic performance when compared to other communities. Although far removed from the *Brown v. Board of Education's* (1954), research

highlighted that academic achievement and attainment gaps persist between White and Black students and offered that the intersectionality of race and community determine the quality of education available to students, impacting academic outcomes (Gordon & Cui, 2016).

Notwithstanding the community in which they live, Black students underperform White students in academic achievement with a wider achievement gap in communities of poverty.

While the lack of resources in communities of poverty impacts academic outcomes for all ethnic groups, Carter (2008) showed that Black students experience greater discrimination because of their race. The author's qualitative study of nine high-achieving students examined how race informs their belief in self and achievement and found that students who demonstrated strength in racial and achievement identities tend to develop resilience and adaptive behaviors when faced with race related challenges. Furthermore, Umaña-Taylor et al. (2012) offered that Black students who attend schools in higher-income neighborhoods achieve lower academic outcomes compared to their White peers resulting from systemic racial factors undermining their academic achievements. Black students face racial discrimination regardless of the community in which they live; however, for those living in underserved communities, there is a historical lack of quality education leading to low academic outcomes.

Conceptual Framework

This research study utilized Urie Bronfenbrenner's ecological theory and critical race theory (CRT) to derive a conceptual framework that examines the interconnected relationships between environmental influences and systemic racial barriers impacting the academic outcomes for Black and Latinx students living in underserved communities. The key concepts explore the influence children's environment and exposure to quality educational resources have on their academic outcomes. Bronfenbrenner (2009) postulated that the interconnected relationships

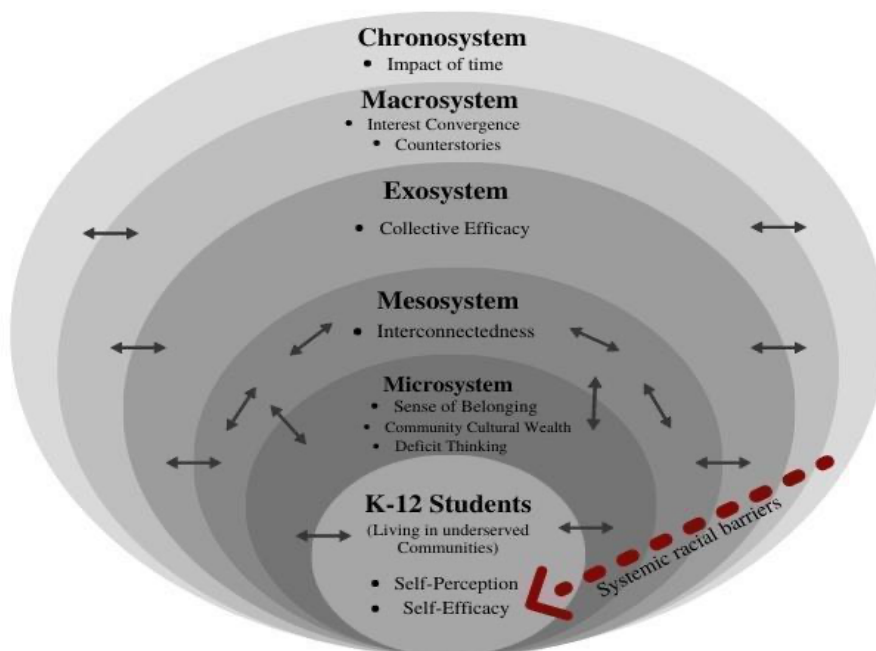
between the individual and their ecological systems have an enduring impact on children's self-perception as they traverse their environments. Bronfenbrenner and Morris' (2006) study examined how the relationships between developing children and those in their immediate environment are sustained over time through reciprocity and affect their social and developmental outcomes.

As a foundation for the conceptual framework, CRT enables the understanding of racial inequity that permeates the K–12 educational systems through promoting and implementing race-neutral policies and laws (Dixson et al., 2017) that disproportionately serve students of color. CRT frames the normalization of racism in U.S. society to explain the racial inequities prominent in organizations and social structures (Ladson-Billings, 2013), including K–12 education systems that impede access to crucial educational resources for students of color, especially those living in underserved communities. Ladson-Billings (2013) revealed that the design of the educational system positions Black and Latinx students as academically and culturally inept and viewed from a perspective of failure with the need to apply remediation to their educational plans. Furthermore, the intersection of race and racism with other social constructs, such as gender, sexuality, and class, result in different forms of oppression and subordination of marginalized individuals (Crenshaw, 1995). The intersecting axes of privilege, domination, and oppression (Cooper, 2017) illustrate how the combination of individuals' identities provides the prescription for the lens through which they operate. Omi and Winant (2014) asserted that race as a mastery category has not only shaped culture in the United States but has also become the model for inequality and difference.

The conceptual framework outlined in Figure 1 illustrates the pervasive impact of systemic racism, denoted by the red arrow, seen through the symbiotic relationships and influences that directly and indirectly impact K–12 students living in underserved communities.

Figure 1

Modified Bronfenbrenner Ecological Model Reflecting Inclusion of Systemic Racial Barriers



The first or innermost circle represents K–12 children living in underserved communities surrounded by relationships and resources that can enable or limit the development and maximization of their full potential. Children, as learners, explore and reflect the values of their environment and those around them (Hayes et al., 2017). As the developing children navigate the complexity of their environment, they form long-lasting relationships that influence multifaceted outcomes, both positive and negative. Bronfenbrenner (2009) demonstrated that as children develop, adults in their immediate environment are simultaneously experiencing changes that may affect the children’s development and processing of events in their environment. Adults in these dyadic relationships, including parents, guardians, relatives, caregivers, and teachers,

become salient contributors to the developmental continuum of the children. The dyadic relationships expand to include other relevant interpersonal and professional relationships that are either disruptive or enhancing to the developing children (Bronfenbrenner, 2009). As children grow and navigate their environment, self-perception and self-efficacy are central factors in determining their outcomes.

The theory of self-perception, introduced by Daryl Bem, describes how individuals develop attitudinal or emotional responses based on observing their behaviors and concluding what particular attitudes may have motivated the behaviors (Bem, 1967). Developing children's perception of their environment, rather than the objective reality, creates an enduring factor in their development and behavioral outcomes (Hayes et al., 2017). Children's perceptions of others in their immediate environment and interaction with said individuals influence their development (Bronfenbrenner, 1995). Thus, the perception of oneself is connected to influences in the environment. Likewise, self-efficacy, another salient attribute in children's development and academic outcomes, accentuates an individual's belief concerning his or her capabilities in accomplishing specific tasks (Stajkovic & Luthans, 2002). According to Bandura (2001), self-efficacy determines how the individual approaches life, including the decisions made, goals set and accomplished, and the effort exerted to produce desired outcomes. The author further revealed that individuals live in concert with interdependency on others, working together to accomplish desired outcomes. Consequently, perceived efficacy influences how developing children respond to factors directly or indirectly in their environment.

The second circle in Figure 1, the microsystem, encompasses relationships, roles, and activities experienced by developing children that directly influence them, providing resources and relationships to support their well-being and development. The interconnectedness between

the relationships and resources available in this setting is pivotal to the developing children. Bronfenbrenner (2009) highlighted the ecological transitions throughout the lifetime of children that are potent to their behavioral and developmental outcomes. In this environment, the parents or guardians' roles are either supported or hindered by access to resources or lack thereof emanating from the immediate or external settings. Supporting systems in this environment include workplaces, K–12 schools, churches, community organizations, like Strive Academy, and other agencies. As a result, children develop the feeling of belonging and connection to people and entities that directly influence their development and behavioral outcomes (Hayes et al., 2017). Notwithstanding the gaps in access to resources evident in underserved communities, parents seek support from groups and other influences to meet the developmental needs of their children.

When groups or communities exhibit collective efficacy, they become motivated to complete tasks, showing resilience in the face of adversities. Bandura (2001) defined collective efficacy as a shared belief that individuals can accomplish desired outcomes through combined efforts. Regardless of race or community identification, children improve in their academic abilities when adults, especially educators, demonstrate belief in their capabilities to achieve successful outcomes (Donohoo et al., 2018). Additionally, Hattie and Zierer (2018) posited collective efficacy as the paramount factor influencing students' academic achievements. Conversely, when educators believe that they do not have influence on students' behavior and academic success, the lack of collective efficacy infiltrates the students' environment with a ripple effect, impacting their academic achievements and outcomes (Donohoo et al., 2018). As children navigate their environment, their relationships with adults determine their trajectory to outcomes, positive or negative.

Yosso (2005) introduced community cultural wealth as a counterstory or alternative narrative in refuting that communities of color function as environments of deficits devoid of social and cultural richness, compared to the dominant White communities. The author proposed that by accentuating the multifaceted cultural depth and strength of communities of color, educational institutions can move toward a model that no longer views students of color entering the classroom as at a disadvantage and instead embrace their under-utilized assets. Deficit thinking blames students of color for poor performance, ascribing it to lack of parental support for the value for education. Conversely, CRT enables the exploration of the cultural wealth in communities of color that students employ in developing persistence in the face of racial and economic adversities. Yosso (2005) defined cultural wealth as the combination of talents, capabilities, and connections that communities of color deploy to overcome systemic racial barriers.

The third circle in Figure 1 represents the mesosystem, which connects the developing children with processes and resources across one or more circles of influence in the ecological model. Bronfenbrenner (2009) defined the mesosystem as interconnections established between two or more settings in which the developing children actively participate, becoming the primary link that brings the settings together. Hayes et al. (2017) postulated that interconnectedness is a dynamic concept showing the correlation between behavior and experiences in one or more settings. The academic and developmental outcomes resulting from participation and connections across the settings in the developing children's lives rely on the availability of quality resources and nurturing relationships existing in their environments. Furthermore, the mesosystem transmits information or attitudes from one setting to the others through direct and

indirect links that define the nature of the relationships the developing children experience, whether supportive or destructive (Bronfenbrenner, 2009).

The fourth circle is the exosystem reflecting relationships and activities between one or more settings that do not require the active participation of the developing children.

Bronfenbrenner (2009) highlighted that the events and decisions that transpire in this circle of influence affect the developing children even though they were not present, including decisions impacting adults connected to the developing children. Likewise, events in the exosystem and outcomes in the microsystem affect the developing children. In the context of quality supplemental educational programs, the exosystem includes policymaking and funding entities that determine access for K–12 students in underserved communities. While children do not directly participate in creating and implementing educational policies, these policies impact the quality of their experiences and academic outcomes (Hayes et al., 2017).

The fifth circle is the macrosystem, comprising sociocultural beliefs, values, and other influences impacting access to crucial resources that directly and indirectly affect the developing child's environment. Bronfenbrenner (2009) showed that decisions made predating the birth of the developing children can affect them throughout their lifetime. These decisions may include systemic racial practices in the medical system that deprioritize critical services for Black mothers who may resort to alternative health care means impacting childbirth and childcare (Shippee et al., 2012) or changes to the federal budget that retract funding from or limit funding to underserved communities (McCombs et al., 2017). Thus, the availability and quality of support and resources are a function of the culture, public policies, and practices enacted that obstruct or are conducive to the outcomes experienced by the developing children. Finally, the chronosystem is the sixth circle, embodying changes that occur over time, influencing the other

settings and impacting the developing children. Hayes et al. (2017) underscored children's transition through the different stages of the school system and the historical timeframe during development impacting the quality of the children's experiences. Children encounter transitions daily, whether from home to daycare or from preschool to elementary school, and so forth, with each move having different impacts, positive and negative. Accordingly, exposure to influences and individuals inside and outside the home increases vulnerability, risking or enabling healthy social and academic development in children during pivotal times in their lives.

In addressing racial inequities, the CRT tenet of interest convergence speaks to the alignment of those who control the power and resources with marginalized groups to release access to consequential resources and enact equitable policies and practices (Ladson-Billings, 2013). Analysis of the *Brown v. Board of Education (1954)* case illustrated the importance of interest convergence in a move toward equal access to quality education for Black and other students of color (Bell, 1980). By highlighting the economic and political goodwill of the desegregation of public schools to those in power, policymakers acquiesced to policies and laws signaling racial equality in educational access for all students of color (Bell, 1980). Achieving interest convergence aligns the racial equality pursuits for people of color with satisfying the interests of policymakers of the dominant White race, where both groups attain mutual benefits. Moreover, these systems or layers, chronologically ordered from the microsystem, closest to the developing children, to the macrosystems and chronosystem, furthest from the developing children, encompass influences salient to their social and academic development (Hayes et al., 2017), the full impact of which may not be evident until later in their lives. Consequently, an understanding of the interconnectedness of the multilayers of influences in the developing

children's lives, along with the systemic racial barriers through the lens of CRT, provides deeper insight into the problem of practice outlined in this study.

Summary

The foregoing literature review explicated the importance of expanding access to quality supplemental educational programs for K–12 students in underserved communities. It expounded that by exposing children to a safe, nurturing, and academically enriching environment, they thrive socially and academically, regardless of the communities in which they live. The study premised Bronfenbrenner's ecological theory and CRT to examine the impact of environmental influences on children's development, self-perception, and outcomes, socially and academically. The literature highlighted that the achievement and attainment gaps between White and students of color, especially Blacks and Latinxs, continue to widen, worsened by systemic racial barriers (Gordon & Cui, 2016) and the COVID-19 pandemic (Dorn et al., 2020). Families living in underserved communities, especially Blacks and Latinxs, have historically experienced disproportionality in access to fundamental resources, including quality supplemental educational programs. Therefore, the disclosures from the literature provided insights to organizations, like Strive Academy, in expanding access to quality supplemental educational programs, enabling Black and Latinx students to realize their full potential.

Chapter Three: Methodology

The purpose of this evaluation study sought to understand the experiences of students from underserved communities who participated in Strive Academy's summer STEM program and to examine how their experiences influenced their academic outcomes. Chapter Two examined literature encompassing previous research in this area of study. Figure 1, in Chapter Two, represents the conceptual framework premised on Urie Bronfenbrenner's ecological model and critical race theory (CRT) and illustrates the interconnectedness of the influences in K–12 students' environment, impacting behavior, development, and academic outcomes. This chapter comprises the restatement of the research questions, explains the research design, participants, and methods used in the collection and data analysis processes. It also provides an overview of the researcher's positionality and outlines the study's credibility, trustworthiness, and ethical considerations. Additionally, the study's limitations and delimitations are covered. The findings from this study, outlined in Chapter Four, will guide the recommendations for expansion of Strive Academy's summer STEM program in reaching more students living in underserved communities and further contribute to emerging research in this crucial area of study.

Research Questions

The research questions, informed by Bronfenbrenner's ecological theory and CRT, directed the study into exploring expanding access to quality supplemental educational programs for K–12 students in underserved communities. The research questions were:

1. How do students from underserved communities who participated in Strive Academy's summer STEM program perceive their experience?
2. Based on students' perceptions, what role does Strive Academy's summer STEM program play in improving students' academic outcomes?

3. Based on students' perceptions, how does Strive Academy's summer STEM program help students in overcoming stereotyping related to race and class?

Overview of Design

This study employed a qualitative design using semi-structured interviews to understand how students who participated in the summer STEM program at Strive Academy interpreted and made meaning of their experiences. As outlined in Chapter One, the qualitative research approach is non-probabilistic and utilizes purposeful sampling, enabling the researcher to gain understanding and insight from the sample selection in addressing the research problem (Merriam & Tisdell, 2016). The study included the purposeful selection of 13 participants for one-on-one semi-structured interviews. The interview with each participant lasted 40–60 minutes, with enough time allotted for them to share their experiences and enabled the gathering of information-rich data for the study. In addition, the probing questions included prompted the participants to clarify or expound on certain parts of their responses, thereby enabling member checking. After completing each interview, the data gathered from audio recording and notetaking underwent transcription, facilitating the identification and analysis of thematic coding (Sutton & Austin, 2015) connected to the conceptual framework and research questions.

Table 1*Data Sources*

Research Questions	Interviews
RQ1: How do students from underserved communities who participated in Strive Academy's summer STEM program perceive their experience?	X
RQ2: Based on students' perceptions, what role does Strive Academy's summer STEM program play in improving students' academic outcomes?	X
RQ3: Based on students' perceptions, how does Strive Academy's summer STEM program help students in overcoming stereotyping related to race and class?	X

Research Setting

This qualitative study explored the experiences of alumni of Strive Academy who participated in the organization's summer STEM program. Strive Academy, known in its local community as an organization offering quality supplemental educational programs to students in 1st through the 12th grade, including the summer STEM program for rising 6th through 12th-grade students, was central to this research. As a senior leader in the organization, I believed that exploring the experiences of alumni would provide information-rich data suitable to assess the program's effectiveness and offer recommendations for improving and expanding access to the organization's supplemental educational programs for students in underserved communities. The 13 participants who are alumni of the summer STEM program culminated during 2015–2020, and were considered promising students (those who showed potential and excelled academically during their time in the program), shared and ascribed meaning to their experiences. The 2015–2020 timeframe was considered appropriate for this study as alumni would be in a degree program, with more recent connections and memories of being students at Strive Academy. In

light of the ongoing COVID-19 pandemic, the interviews took place via Zoom video platform instead of the traditional face-to-face format, yet still allowed me to see the participants and build rapport with them as they shared and ascribed meaning to their experiences.

The Researcher

As the researcher, my positionality enabled me to identify with the need for expanding access to quality supplemental educational programs for children in underserved communities. As a Black female professional who grew up in a developing country, my low-income familial childhood experiences shaped my worldview and informed the importance of addressing this problem of practice. I credit a stable school system with caring staff, along with a community of nurturing adults, for providing a safe and enriching academic environment that prepared me for college entry and completion and, ultimately, a successful and eclectic professional career. In addition, the intersectionality of meritocracy and access to quality educational resources enabled me to overcome systemic racial barriers that often hinder Blacks and Latinxs' upward mobility. While my experience may parallel the participants', I approached this study understanding that each participant's experience is personal and to be interpreted uniquely. To maintain a level of objectivity, none of the participants were employees of Strive Academy, were ever under my supervision, or were connected to me directly.

Biases and assumptions are inherent to qualitative research design where the researcher is the primary instrument in collecting and analyzing the data (Merriam & Tisdell, 2016). As such, I asserted the facilitator's role in this study, giving space for the participants to share their own stories and make meaning from their lived experiences participating in Strive Academy's summer STEM program and living in underserved communities. To further mitigate biases and

assumptions, I engaged the assistance of the program director to aid in the participants' selection process.

Data Sources

This qualitative study utilized semi-structured interviews as the primary source for data collection using criterion-based purposeful sampling, defined as selecting attributes that are salient to the study, followed by finding the participants that fit the attributes (LeCompte and Schensul, 2010). This sampling selection enabled the gathering of information-rich data for the study. After receiving the University of Southern California (USC) International Review Board (IRB)'s approval to conduct this study, I convened a meeting with the program director of the summer STEM program to discuss the study's purpose, the criteria for the participants' selection and sought her help in reaching out to the selection. As a result, she generated a list of students who had participated in the organization's summer STEM program, culminating between 2015–2020 and met the other criteria for the study. During the research study, the alumni in this group were either enrolled in a degree program at a post-secondary institution or recently graduated from a university. The program director's history with the organization, leadership, and knowledge of the students who completed the program enabled her to select participants who would provide information-rich narratives for the study.

The program director initiated communication with the selected alumni via email, text, and phone, sharing the background of the study and requesting their participation. Upon agreeing to participate in the study, the participants reached out to me via phone call or text message, after which I coordinated the date for the interview, followed by an email that outlined the purpose of the research, my positionality, and an informed consent form that explained the confidentiality understandings and expectations for the interview. The informed consent form also included the

request to record the interview and take notes to capture the experiences they shared.

Additionally, the email had the meeting invitation with the agreed-upon interview date and the link for the Zoom meeting. The one-on-one interview established rapport and created a safe space for the participants to share their experiences, some of which were personal and sensitive. After each interview, I requested a follow-up, if needed, to ensure complete data collection from participants for the study.

Interviews

As the primary source of data collection, semi-structured interviews allow for open-ended questions that guide the participants in uniquely defining their worlds and interpreting their experiences (Merriam & Tisdell, 2016). For this study, I designed 15 interview questions (Appendix A) that included flexibility in wording and sequence to garner information-rich data from each participant. In addition, member checking, done through probing questions, encouraged the participants to expound on specific responses, giving clarity and completeness in relaying their experiences. The interviews with participants were 40–60 minutes, with each participant asked whether they would be available for a follow-up phone call should there be a need to clarify details shared during the interviews. Each of the interviews resulted in complete and clear information-rich data, warranting no follow up interview. Additionally, each interview question connected to a key concept outlined in the conceptual framework and the research questions (See Appendix A). The participants' responses provided data that accentuated their lived experiences and the impact of participation in Strive Academy summer STEM program on their academic outcomes.

Participants

This study included the selection of 13 participants from the list of past students, utilizing a non-probabilistic, purposeful sampling approach. The participants selected comprised alumni who participated in Strive Academy's summer STEM program, culminated between 2015–2020, lived in an underserved community during their K–12 school years, and were either currently in a degree program or recently graduated from a university. At the end of the interviews, I sent \$15 gift cards to the participants to show my appreciation for their time.

Instrumentation

I employed 15 semi-structured questions for the interviews, each linked to the research questions and conceptual framework. Semi-structured interview questions were better suited for this study approach as they allowed for flexibility in the wording and sequence of the questions, adding probes as follow-up questions that enabled the gathering of clear and complete details from the participants (Merriam & Tisdell, 2016). Additionally, at the end of each interview, I reviewed the questions to determine whether to slightly modify them, accommodating the flow of the responses to avoid repetition of details, any gap in connection to research questions, and divergence from central themes. Appendix A reflects the interview protocol comprising the 15 questions used that were sufficient to achieve data saturation in collecting information-rich data for the study.

Data Collection Procedures

Upon receiving IRB approval, I informed the program director of the summer STEM program, who then selected the participants from a list of alumni who met the criteria for the study. The program director commenced communication with the selected alumni, and those who self-elected for the study confirmed by sending me a text message or via a phone call. I then

reached out to the participants via text message or phone call, acknowledging their confirmation and requested their email addresses to which I sent details reiterating the purpose of the study and related protocols (Appendix B). The email to participants informed them of the request to record the interviews and take notes during the process to capture their complete responses. An informed consent form (Appendix C), attached to the email, outlined important protocols, including confidentiality of information shared during the interviews. At the start of the interviews, I reiterated the importance of confidentiality to the study and emphasized that any details shared were privy only to the participants and me and would be stripped of any identifiable attributes. I also reminded the participants of the recording request and obtained their verbal approval to proceed. None of the participants declined the request or reneged on the interview. During the interviews, I gave the participants enough time and space to share their experiences. By utilizing the semi-structured interview approach, I collected information-rich data reflecting the lived experiences of the participants and the meaning they ascribed to their experiences. The 13 interviews, conducted via Zoom video platform, were then transcribed using a mix of Zoom and Sonix transcribing systems with pseudonyms assigned to each participant to preserve anonymity. The transcripts and audio files formed the bases for data analysis and, ultimately, the generation of findings for this study. The data files were password-protected and will remain stored electronically for three years after thesis submission, as required by USC's IRB.

Data Analysis

Merriam and Tisdell (2016) underscored data analysis as a nonlinear process, salient to qualitative research, that occurs in conjunction with the data collection process. Since the qualitative research design is emergent, I lacked foreknowledge of the participants scheduled for

the interviews, the questions asked, and the impending responses. As a result, there is prudence in commencing the data analysis process during the first interview as the researcher develops insights and identifies themes and patterns from the responses (Merriam & Tisdell, 2016). This approach directed subsequent interviews and other aspects of the study, enabling me to build on collected data, adjusting questions to improve the ongoing data collection and analysis processes.

Due to the restrictions imposed by COVID-19, I conducted all interviews via Zoom video conferencing platform with transcripts and audio files generated for data analysis. I utilized Sonix transcription service for transcribing for nine of the 13 interviews and Zoom service for the remaining four interviews, ensuring the verbatim reproduction of the participants' experiences. Data analysis comprised the use of Atlas.ti Scientific Software that enabled automation of the descriptive and axial coding processes. The data analysis process utilized three levels of coding, ensuring rigor of the process. First, the descriptive coding phase included the use of a priori codes (Gibbs, 2018), formulated using keywords or phrases selected from the conceptual framework and literature review in Chapter Two, along with open coding to capture words or phrases from the participants' interviews related to the research questions. Second, after the completion of the descriptive coding process for all transcripts, axial or secondary level coding followed (Gibbs, 2018). This process comprised the categorization of codes capturing similar words or phrases and identifying emerging themes that connected to the research questions. Third, the final level entailed analyzing codes with the highest occurrences for similar themes then grouped into thematic categories per research question for inclusion in the findings for this study.

Credibility and Trustworthiness

The qualitative research design considers credibility and trustworthiness as leading characteristics, enabling the researcher and others to have confidence in the rigor and authenticity of the study and related results (Merriam & Tisdell, 2016). The focus of a qualitative inquiry study using semi-structured interviews is to relay the interpretation and meaning participants attached to their experiences. Credibility and trustworthiness extend to my role in the study and my relationship with the participants. The qualitative research design positions me as central to the process, so clarifying how my biases, worldview, background, culture, and experiences influence the interpretation of the research adds further validity to the research (Creswell & Creswell, 2018).

During each interview, I performed member checks of relevant information disclosed, ensuring that the accuracy of meaning conveyed during the interview was not misinterpreted because of my positionality (Merriam & Tisdell, 2016). Member checking also included replaying each audio recording and matching it against the generated transcript. I created a summary memo of the first seven interviews, sharing each with the respective participants to garner feedback from a majority of the participants on the accuracy and completeness of their experiences before performing the final data analysis. Additionally, Lincoln and Guba (1985) underscored choosing a sampling that results in data redundancy. Therefore, the 13 participants' interviews and the member checking steps contributed to the gathering of information-rich data and achieving data saturation. The interview protocols underwent peer review, tested through a pilot study before this research study, and modified to incorporate feedback, thereby increasing the credibility and trustworthiness of data collected and subsequent results. Furthermore, records

of the interviews, related notes, and memos will be stored to allow for an audit trail of data used in the study.

Ethics

The confidentiality applied to data collected from participants was paramount to this study and included in the informed consent form emailed to participants in advance of their interviews. While the participants' stories were central to the study, they had the option to discontinue the interview and commitment to the study during the process. I reiterated the key clauses of the informed consent agreement before each interview, including the permission to record and take notes. I also used pseudonyms for all the participants and omitted any identifiable attributes from the transcripts and audio files, preserving anonymity of the participants. The \$15 gift card, given to each participant at the end of the study, was not a pay-for-service but a token for enabling this study to move forward. While my position in the organization places me in a senior leadership role, none of the participants are employees and had no direct connection to me. Therefore, there was no concern for conflict of interest, coercion, or issues impacting any employee or affiliate of the organization. Additionally, I exercised transparency with the participants regarding the purpose of the study and its role in expanding access to supplemental educational programs at Strive Academy, aligning with the ethical standards established for researchers by USC's IRB and adhering to protocols set by Strive Academy.

Making ethical decisions is a central part of the research design and guides the researcher in navigating the various epistemological systems that may trigger ethical concerns (Glesne, 2011). The author posited that the qualitative research approach gives rise to ethical considerations that are "inseparable from your everyday interactions with research participants

and with your data” (p. 162). The outcome of this research is to expand access to supplemental educational programs for students in underserved communities, comprising primarily Blacks and Latinxs. The stakeholders who may benefit from this research include students in underserved communities, K–12 school administrators and counselors seeking supplemental programs for students, companies seeking a more diverse workforce, STEM-related employers, college admission personnel, and community organizations that provide similar supplemental educational programs. While this research may harm Strive Academy and its staff with any unfavorable information shared during the interviews, the study results will improve equity and change throughout the organization. I will disseminate the results gleaned from the research to the participants, upon request, and the organization leadership for evaluation and use in designing organizational change efforts.

Limitations and Delimitations

Limitations, defined as factors such as design constraints that the researcher cannot control (Merriam & Tisdell, 2016), are inherent to this study. Several limitations were identified for this study. First, the study’s sample size of 13 participants represented a small percentage of over 2,300 students who culminated from Strive Academy programs since inception in the early 2000s. Therefore, their responses to the interview questions may not have reflected the entire group or phenomena under study. Second, the researcher as the primary instrument of data collection and analysis, may result in biases and assumptions inherent to my lived experience and critical realist worldview, that, according to Saunders et al. (2019), looks for the underlying causes and associated mechanisms that shaped our experiences and social structures. Third, the study relied on responses from participants who may not be as transparent and truthful because of the nature of their experiences. Fourth, the criteria utilized for selecting participants could

have excluded others who may have had more profound and impactful experiences participating in the programs at Strive Academy.

Delimitations encompassed boundaries established for the study (Merriam & Tisdell, 2016), aligning with the purpose of the study to explore the experiences of students who have participated in Strive Academy's summer STEM program. In addition, the study focused on alumni who participated in the program and culminated during a defined timeframe (2015–2020), thus, purposely excluding minors from consideration and alumni who participated in earlier years who may be less likely to recall their experiences participating in the summer STEM program. Member checking was employed to validate participants' responses, mitigating misunderstanding, or misinterpretation of the information shared as the participants ascribed meaning to their experiences (Merriam & Tisdell, 2016). In addition, I reiterated some of the experiences, shared during the interviews, to the selected participants, confirming the completeness of the analysis, and ensuring my biases and own experiences did not obscure the meaning participants ascribed to their stories.

Chapter Four: Findings and Discussions

Chapter Four comprises the findings related to the study of expanding access to quality supplemental educational programs for K–12 students in underserved communities. Postulated on the conceptual framework that combines Bronfenbrenner’s ecological theory and critical race theory (CRT), this qualitative study sought to understand the experiences of students from underserved communities who participated in Strive Academy’s summer STEM program and to examine whether their experiences influenced their academic outcomes. The chapter begins with a synopsis of the participants, including information about their upbringing and academic journey, providing a salient backdrop to the problem of practice. It then underscores the prevailing findings relevant to addressing each research question, followed by the discussion of findings connecting them to the literature review and conceptual framework detailed in Chapter Two.

The prevailing findings from the study position Strive Academy’s summer STEM program as an exemplary supplemental educational program for K–12 students in underserved communities, contributing to improved academic performance during middle through high school and providing college preparation and acceptance support. While the findings varied on whether participation in Strive Academy’s summer STEM program enabled the participants to overcome stereotyping related to their race and socioeconomic backgrounds, participants reported a positive impact on self-perception and self-efficacy in achieving academic success.

Participants

As established as criteria for this study, the 13 participants interviewed are alumni of Strive Academy, who attended its summer STEM program, culminating during 2015–2020, and lived in underserved communities during their K–12 school years. The background information

of the participants excluded any identifiable and confidential details, aligning with the ethical underpinnings for this research, and instead, included information that illuminated the participants' upbringing and academic journey, relevant to the study. At the time of the interviews, 12 of the participants were current undergraduates in colleges and universities across the west and east coasts of the United States and one participant recently graduated from a university. The participants included 11 females and two males. Additionally, 12 of the participants self-identified as Black, three of whom emphasized their biracial identities, and one participant identified as Latinx. Table 2 summarizes the participants' background information salient to the study with each assigned a pseudonym to preserve their anonymity.

Table 2

List of Participants and Background Information

Participants (Pseudonym)	Racial Identity	Sex	Family Structure
Callie	Black	Male	Two-parent household
Cleve	Black	Male	Two-parent household
Dava	Black	Female	Two-parent household
Eva	Black	Female	Two-parent household
Gavin	Black	Female	Two-parent household
Gem	Latinx	Female	Two-parent household
Helen	Black (Biracial)	Female	Two-parent household
Josie	Black	Female	Two-parent household
Keena	Black	Female	One-parent household
Lacy	Black	Female	Two-parent household
Riley	Black (Biracial)	Female	Two-parent household
Ruth	Black (Biracial)	Female	One-parent household
Sonia	Black	Female	Two-parent household

Upbringing and Community Experience

The interviews with the 13 participants revealed the accounts of different lived experiences growing up in various underserved communities. The neighborhoods of all participants were identified as underserved communities, demarcated between areas that they described as “nice” and “safe,” and others considered as “unsafe” and “less than desirable.” For example, six of the participants (46%) spent their K–12 school years living in the same community, three of whom used words such as “nice,” “quiet,” and “safe” as they reflected on childhood memories in their neighborhoods while the other three participants referred to theirs as “kind of rough neighborhood,” “not the best,” and “unsafe.” Overall, eight participants (61%) described their communities as “unsafe” and “not an ideal” neighborhood. Josie shared, “I grew up in a pretty rough neighborhood.” Lacy said that her community, “wasn’t the best environment to live in.” When asked about her least favorite memory about her community, Sonia expressed that for safety concerns, she “wasn’t drawn to going outside and being in the environment with other people.”

Conversely, five participants (38%) shared more favorable opinions about growing up in their communities. Of her community, Riley offered:

I live on the nicer part...I’m not sure how they came up with that but the environment I am in there’s not much violence on my side than it is on some parts. So, I always felt safe when things happened.

In sharing memories of childhood in her community, Eva stated that even though she attended K–12 schools in other areas, there was “nothing bad about the community and it was a nice childhood... everyone over there was very uplifting, at least to the children that were in the neighborhood.” All 13 participants, except for Cleve, grew up in communities that were

predominantly Black and Latinx. Cleve shared that his community was diverse with people of different races and ethnicities. The interviews revealed the connection of each participant to the concept of reciprocating relationships (Bronfenbrenner, 2009), fostered with adults and their peers, some of which may have been nurturing, yet all impacted their developmental outcomes.

Family Structure and Parental Involvement

During the interviews, participants reflected on life at home as they transitioned through their K–12 school years. All participants grew up with at least one supportive parent who provided nurturing and structure for them, encouraging academic achievement. Eight participants (61%) grew up in a two-parent household where both parents were actively engaged in every aspect of their upbringing, including their academic journey and supportive of extracurricular activities. Three of the participants (23%) had both parents present in the home; however, only one parent was directly influential in providing consistent support and encouragement through their K–12 school years. Two participants (15%) grew up in single-parent households, headed by mothers who provided nurturing and support that enabled their academic outcomes.

Notwithstanding the varied family dynamics, all 13 participants credited at least one parent for being very supportive, providing a safe space for them, and encouraging the pursuit of academic excellence. For example, Cleve offered, “my parents were very, very supportive of me achieving academic success. They always wanted me to get to that next level. Always pushing me in college direction.”

Each participant referenced extended family members and friends who were involved in their upbringing, further impacting their development. Keena reflected on what she called her “village” that included her grandmother, uncle, and friends who were there for her during times when her mother was very busy. Gem recalled her childhood as one with “a lot of mothers

helping mothers.” She shared, “we made friends through other moms who would give my mom jobs, who would tell each other like, hey, I’m going to the grocery store to pick this up. Do you want anything for the kids or yourself?” The supporting parents, friends and family members are in the microsystem of the Bronfenbrenner ecological model, providing relationships and nurturing that influenced developmental and behavioral outcomes for the participants.

Another salient aspect of their upbringing that the participants underscored was commuting to and from school and various extracurricular activities. Eleven participants (85%) elaborated on their childhood as being very busy with parents transporting them and siblings to different schools, located outside their neighborhoods, and managing schedules of extracurricular activities. When asked about life at home during her K–12 school years, Helen, who was also an athlete, said that during high school she “wasn’t at home a lot.” She elaborated:

If I am going to be completely honest, I was just there to sleep. I was getting up at 5:30 a.m. for workouts, then we’d come home and shower and get ready to leave for school by 7:30 a.m. to get to school at 8:15 a.m., and then there is practice from 5:00 p.m. to 7:00 p.m. You know, I’m getting out at 7:30 p.m, then go home, do homework, shower up and then go to sleep. That was my day on a typical basis for Monday, Wednesdays and Fridays. On Tuesdays and Thursdays when I was playing club volleyball, I was practicing from 7:30 at night to 9:30 at night.

Cleve shared a similar upbringing with a busy weekly schedule of school and extracurricular activities. While he emphasized his involvement in various activities as part of his “goal-oriented family,” and his parents’ aspiration for him to achieve academic success, in his reflection, he noted the lack of family time as having a negative impact on his upbringing: “As a family, we could be a little more connected, a little more, you know, deeper or spend some more time to get

to know each other better,” a reference to the impact of dyadic relationships present in the developing children’s microsystems that can be enhancing or disruptive.

K–12 School Experience

The K–12 school years elucidated the academic journey of the participants while living in underserved communities and framed the trajectory for college entry and beyond. Table 3 provides a summary of the K–12 schools of the 13 participants.

Table 3

Participants and Their K–12 School Information

Participants (Pseudonym)	K–12 School Journey					
	Elementary	In Community?	Middle	In Community?	High	In Community?
Callie	Public	No	Public	No	Public	No
Cleve	Public	Yes	Public	No	Public	No
Dava	Private	No	Private	No	Public	No
Eva	Public	No	Public	No	Public	No
Gavin	Public	No	Public	No	Public	No
Gem	Public	Yes	Public	Yes	Public	Yes
Helen	Private	No	Private	No	Private	No
Josie	Public	No	Public	No	Public	No
Keena	Public	Yes	Public	Yes	Public	Yes
Lacy	Public	Yes	Private	No	Public	No
Riley	Private	No	Private	No	Private	No
Ruth	Charter	No	Charter	No	Charter	No
Sonia	Public	No	Public	No	Public	No

There were similarities between the majority of the participants’ K–12 school journey. Of the 13 participants, 11 of them (85%) shared that they commuted daily to schools outside of their neighborhoods during middle to high school. The participants further shared that these schools

included charter, private, and public schools in other communities, some of which are considered underserved but better neighborhoods, and others, higher-income communities based on the zip codes shared. Ten participants (77%) shared similar experiences of attending K–8 schools that were either diverse or had a predominantly Black and Latinx population, and nine participants (69%) attended high schools that were predominantly White, where they were the only or one of few Black or Latinx students in their classes.

When asked their understanding of the reason they did not attend school in their immediate communities, the 11 participants' responses converged around their parents wanting the best education for them, implying the schools in their immediate underserved communities did not meet that expectation. Gavin, who commuted about 16 miles daily to public schools in higher income communities throughout her K–12 school years, approved through a school voucher certificate, stated that her parents said, “no” when asked about attending a school in her community. She continued, “so, my parents, would always make sure we either take the school bus or they would drive me to school; it was about an hour drive.” Likewise, Riley, who commuted about 18 miles daily during high school, expressed that, “I’ve always gone to private school in my life because my parents wanted me to have the best possible education I could have.”

Two of the 13 participants (15%) attended K–12 schools in their immediate communities, and their reflections revealed the different dynamics in the underserved communities for parents who do not have the financial means to consider more suitable options, acquiescing to their children attending schools in their neighborhoods. Keena and Gem attended K–12 school in the neighborhoods in which they lived, painting pictures of less-than-ideal environments yet making the most to maximize the education they received, alluding that their participation in the summer

STEM program at Strive Academy offered the educational resources and environment needed to supplement what was missing from their traditional school systems. Gem shared that, “apart from school, I didn’t have much going on. I’d come home to not a very healthy environment and I would try and do my homework to the best of my ability.” She added, “going to the academy was very refreshing for the summer.”

One participant’s high school experience stood out from the rest of the participants. Sonia, who attended public schools in higher-income communities during her K–8 school years, had to attend a public high school in another underserved community because of her sibling’s involvement in sports at that school. She reminisced on her reluctance of starting a new school:

I was forced to go to the same high school with him because my mom didn't want to drive around to multiple places to get us... It didn’t start off well for me because I didn’t really want to go there. I wanted to continue to go to like the performing arts magnet high school with everybody else from my elementary school and middle school...ninth grade was a rough year for me.

However, once Sonia got settled and more serious about school, she was able to make new friends, got involved in various extracurricular activities, had nurturing and supportive teachers and excelled in her academics, leading to acceptance to a prestigious university. She credited her parents who instilled the importance of education as the way for a brighter future for Black people, the exposure to quality education during her K–8 school years, participation in Strive Academy’s summer STEM program, her teachers, and athletic coach who exposed her to academic and social opportunities that enabled her current academic success of being a sophomore at a prestigious university.

Using the lens of a critical realist, looking for the underlying causes and associated mechanisms that shaped the participants' experiences and our social structures, I analyzed the participants' interviews, extracting the salient findings aligned with each research question. The following findings reveal whether Strive Academy's summer STEM program represented a suitable option for students from underserved communities, enabling them to participate in a quality supplemental educational program, a move toward closing the achievement and opportunity gaps in education, and creating a greater pathway to college entry.

Findings for Research Question 1

The first research question sought to understand: how students from underserved communities who participated in Strive Academy's summer STEM program perceive their experience? The findings revealed prevailing themes generated from analysis of the participants' responses. The four prevailing themes that emerged from the study were safe and enriching environment, sense of belonging, self-perception, and exposure to culturally relevant teachings. When asked to describe their experience participating in the summer STEM program, the participants reverberated words such as "nice," "great," "cool," "refreshing," "safe," "fun," and "welcoming" as they each gave meaning to their experience. Figure 2 represents the compilation of frequently occurring phrases that the participants used throughout the interviews as they ascribed meaning to their participation in the summer STEM program.

Figure 2

Participants' Descriptions of Their Experiences at Strive Academy



Safe and enriching environment

When asked to share what it was like participating in Strive Academy's summer program, the 13 participants (100%) had positive reactions, using phrases like "great experience" and "made learning so much fun," among others, as represented in Figure 2. They described an environment that they enjoyed being a part of and where they thrived to be their best. Seven of the participants (54%) used the phrase "safe space" as they reminisced about their time in the summer program. For instance, Gem explicitly used the phrase "safe space" when asked about the most beneficial aspect of the summer program. Josie also shared that not only did the "teachers made it a safe space," but "the students made it a safe space, too." The analysis of the interviews showed that 11 of the 13 participants (85%) expressed that the program staff was supportive and caring. Eva spoke of one of the program directors who, "was so nice, and she was

always encouraging and making sure that you were okay, not only academically, but just as a person.”

Ten participants (77%) shared that even though the focus was on learning during their time in the summer program, they also had fun. Cleve reflected, “I remember having fun in the classroom, not just learning, but really being excited to understand the concepts that we were going over, understanding algebra and the math behind everything. I remember being excited to understand it.” When asked what were the best memories growing up in her community, Josie stated that attending the summer program at Strive Academy “is probably one of my best memories.” As one of the youngest students in the program, she attended over several summers. She continued, “and so growing up with Black kids in my community at such an early age, and being exposed to this program was always like a great thing. I’m very happy my parents encouraged me to do [it].” Gem, who described her home life as “not a very healthy environment” saw the summer program as an outlet that was nurturing and safe. She recalled her experience smilingly, ruminated then uttered that “the environment was positively reinforcing...very refreshing for the summer and I could still interact with kids my age and have a place where I could pick up new skills and information.”

Riley was also unstinting with her approbation of the staff, especially of the tutors. She shared:

The tutors are like super nice. They weren’t like drilling sergeant tutors. They were more like comforting, compassionate tutors and that really helped a lot, because I rather have someone that I can talk to that’s gonna help me right rather than someone that’s gonna get mad at me if I don’t do it right or like you’re frustrated with me.

Lacy underscored the impact of the summer program on providing access to resources not readily available in her community. She expressed, “I felt like it was probably an important part of my life at the time because it was something like a kind of a buffer between school. It gave me a place to go in the summer.” When asked what was her least favorite memory growing up in her community, she shared:

It wasn’t like there was much access... you know how in other communities there’s so much access to different things. And in those programs, there’s good influences, everybody’s positive and stuff like that. I know growing up we don’t get access to much, or much positivity like you have in those other communities.

A safe and enriching environment is one in which developing children thrive resulting from the positive influences of adults and peers. Children benefit from environments that provide safe, supportive and nurturing relationships that enable them to thrive, a need evident in underserved communities.

A Sense of Belonging

The participants used several interchangeable terms denoting their sense of belonging during their time in the summer program. Participants offered phrases such as “felt comfortable in my skin,” “around people who looked like me,” “smart students who looked like me,” “the staff cared about me,” “felt comfortable going to class daily,” and “formed bonds there,” among others. Eleven the 13 participants (85%) referenced a word or phrase symbolizing they experienced a sense of belonging during their time attending the summer program. Gem shared, “um, it was a very tight knit community, even if I didn’t see these students throughout my fall semester, I would see them the next summer break... I didn’t want it to end.” Josie, who attended predominantly White K–12 schools and did not live in a neighborhood that offered safety in

playing with other children outside, stated that while she disliked waking up early for the summer program:

At the end of the day, surrounded by nothing but Black students is always great and learning from them. Having Black teachers was even more like amazing. The fact that I probably had more Black teachers [there] than I have at my [Historically Black College and University] HBCU right now is kind of crazy. It made me feel comfortable seeing others like me thriving.

Josie also spoke about the program director who made:

Each student feels special in their own way... I mean, she would know the names of every single student, which is crazy..., she really made every student feel that she really deeply knew them. She knew their parents, their interests, what they're struggling with, what they're really good with, and things like that. So, she made you feel like you were the only student in the program.

Gavin appreciated spending the summer in an environment where there were other students from underserved communities, who like her, "were striving to be better, and go to college and have a future." She remarked about attending a predominantly White high school in a higher income neighborhood where:

There's nobody there like me but when I went to [Strive Academy] I was like, I have this girl right here she's smart like me. I have other people next to me that are just like me, and their parents want them to succeed, and we are all trying to be college-bound.

The interconnectedness between the relationships and resources available in the developing children's environment is fundamental to their behavioral and academic outcomes. Riley alluded to the feeling of belonging she experienced during her summers participating in the program at

Strive Academy. She recalled that the staff and program director were “nice and comforting” to her. Lacy also shared that:

They had a whole agenda and you get to bond with other people daily. And you also meet really nice teachers and mentors and people that just talk to you and just give you positivity and just to be around.

Attending the summer program resulted in the formation of long-term friendships among the students. Cleve talked about the friends he made during his time in the program who are still his friends, keeping in touch with them frequently through social media. Dava attended the program with her best friend from elementary school. Ruth reflected on her summers in the program and the connections she still maintains with some of the students, who, like her, attend the church affiliated with Strive Academy. Of her experience, she expounded, “it was very, very cool and nice to make memories because I still have good bonds with those people today.” Quality supplemental educational programs provide social and emotional learning and support for students, a predicative factor for positive development, behaviorally and academically, and leading to a sense of belonging. Having a sense of belonging enables students to thrive in spite of the hardship faced in their immediate environments.

Self-Perception

Bronfenbrenner’s ecological model shows that influences in developing children’s microsystem impact the way they perceive themselves. Based on the analysis of the interviews, all of the participants grew up with at least one parent who instilled confidence and self-worth in them; however, seven out of the 13 participants (54%) shared memories of feeling lost or isolated while attending predominantly White high schools. Accordingly, attending the summer STEM program became a place of respite for them. Riley emphasized the impact of the program

on how she began to see herself and her capabilities. Having been bullied, she was very shy and self-conscious; however, while attending the summer program, the director encouraged her to write an essay to express herself and share it publicly during the program's culmination ceremony. As she reflected on the experience, she reminisced that "the program actually helped me not be self-conscious, as well as improved my skills in public speaking." She further offered that the program director was:

Very positive...you could really tell she wanted the best for the kids, to see us thrive, especially seeing that most of the kids that went were African American. She knows the struggle, how hard it can be being Black, and how hard it is just because of the color of your skin. So, she really wanted us to succeed, and she tried to help us see that we're more than just our body. We're more than just a face...we have a beautiful brain and we need to use that brain to see like where we're going.

Gavin, reflecting on attending predominantly White K–12 schools, recounted instances when being the only Black student in her classes made her feel like an outsider and contemplated, "whether something was wrong with me." She marveled when she began attending the summer program at Strive Academy and was in a classroom with students who looked just like her and were as smart as her. Gavin's recollection dispels the notion that students of color, especially Blacks and Latinxs, enter the classroom at a deficit but instead are as academically competent as their White counterparts. Likewise, Lacy spoke about not being able to make many friends during her K–12 school years, being bullied by students who did not look like her. She evoked that she felt "like an outcast and not appealing to the eye because I wasn't in the majority of the other race. It's been like that for most of my life."

While some participants came to the summer program exuding confidence, others built theirs during their interaction with the staff who encouraged them to be their best, and being around peers who struggled with the same issues. Josie offered that the summer program was “definitely an influence in mak[ing] me feel more comfortable in my skin.” She expressed being able to wear different hairstyles during the summer without being placed “under the microscope,” referring to her experience during high school when her White counterparts and a certain teacher frequently brought attention to her hair whenever she changed the style.

Keena, who grew up feeling “disadvantaged,” also had much to contribute about the impact of the summer program on how she began believing in herself. She shared:

I didn’t have high expectations for myself. So, I would say leaving [Strive Academy], my expectations were, you know, it’s like taking the limits off what you think you can do, knowing that you can do more and can achieve more. I should want more, not just settle for what’s being offered to you, but knowing that you can be pushed, you can be motivated to want to dig deeper, you know, to be pushed a little harder.

For Sonia, the summer program enhanced the self-confidence instilled by her mother. She articulated that:

Growing up and how I saw myself, I guess I could say I’ve always been aware of my blackness... and my mom would say, it’s okay for you to be the first Black person to do whatever you want to do. So, I’ve always been okay with seeing myself succeeding in non-Black atmospheres, I guess. But the way I see myself, I’m proud to be Black. And I think being around Black people at a young age, I think that helps me be comfortable because we all wanted to get the highest grades.

Cleve, who was initially reluctant to attend the summer program, wanting to rather hangout with friends and play, shared that, “in hindsight, I’m really appreciative of it.” He referenced a male math teacher in the program who “was influential in changing my outlook on my history and how I saw myself. I’m really glad that he was able to share that wisdom with me and help me to think from a Black lens.” Additionally, Dava expressed how she saw herself as being able to fit well in any environment. She knew from the second grade what career she wanted to pursue and cited various instances of her father introducing her to female professionals in her aspired career field. She credited her parents, who are her role models, and extended family for creating the supportive environment that allows her to thrive. Self-perception, in students, reflects a salient attribute of their ability to achieve academic success. Bronfenbrenner (1995) associated children’s self-perception as connected to the influences in their ecological systems, impacting their developmental outcomes. Accordingly, interactions with adults and peers in the participants’ microsystem and beyond influence their self-perception, positively and negatively.

Exposure to Culturally Relevant Teachings

Another salient theme that emerged from the analysis of the interviews centered around students being exposed to culturally relevant teachings. For the participants this meant, the summer STEM program’s curriculum incorporated content connected to their cultural backgrounds and related history. When asked what aspect of the program they liked the most, seven of the participants (54%) underscored their exposure to culturally relevant content that included learning about Black and Latinx historians in STEM fields. Gem offered, “I loved the end of the week when we would all come together, each class, and learn about the historical figures that were pertinent to what we had been learning.” Gem who is Latinx, elaborated that:

It wasn't until I went to [Strive Academy] that I made a lot of Black friends, and not for a lack of trying, but mostly because I never felt comfortable approaching them but after I went to [Strive Academy] that I felt more comfortable being in an environment with predominantly Black students and learning about their history and mine.

The seven participants (54%) shared that the cultural component was an important part of their weekly learning during their time at the summer program. Cleve recalled:

My teacher introduced me to a lot of prominent African American figures and I just soaked it all in from there. It's very curious, and I'm very glad that he was able to share that wisdom with me and help me to think from a Black lens.

When asked what was his favorite memory of participating in the summer program, Cleve added:

I think the Black experience was my favorite part because it wasn't learning just for the sake of learning, it wasn't doing math just to get ahead. It was like it was math with history behind it. It was math with backing behind it. It was understanding why our ancestors had to fight for us to sit in these classrooms and learn and all that. So, it was a lot more than just getting a head start on the next grade for me, it was learning where we came from, how we can apply that to the future. So, hands down my favorite part was learning how Black is beautiful.

The inclusion of the culturally relevant component as part of the summer STEM program's curriculum reinforced counterstories that exposes Black and Latinx students to successful individuals who looked like them, thereby enabling them to see themselves as capable as their counterparts from the dominant race. Gavin offered:

Learning more about the African Americans that were successful like Benjamin Banneker, I didn't know about those people at first. So just learning more about the history, and then adding in the math to that. So, it just really helped learning math and then learning more about the history of African Americans, just all entwined helped in a lot of ways.

Two participants shared about learning pieces of African languages and dances during their time in the program. Josie shared:

I have a lot of memories of my relationships with the teachers and with the students, and it was always a fun environment. My teacher teaching us some African terminologies, and different languages like Swahili [an African language]. I still remember a few terms that they've taught me here and there, and I just randomly say them to my friends here [in college], who are from Africa. It was definitely a great experience.

The participants' reflections on being exposed to learning that incorporate culturally relevant components provided frames of success that they used to guide their academy journey through their K–12 school years and into college, ultimately adding their own stories to community cultural wealth often overlooked in the White-dominant school systems. Students thrive and achieve academic success when they have relatable role models to pattern.

Discussion for Research Question 1

The environment in which children grow up, the resources available to them, and the relationships they form shape their developmental outcomes, socially, behaviorally and academically (Bronfenbrenner & Ceci, 1994). The findings related to the first research question suggested that all 13 participants benefited from one or more aspects of participating in Strive Academy's summer STEM program. The analysis of data indicated that participants perceived

they were in an environment with supportive and caring staff where they felt safe and nurtured, enabling them to develop connections with the staff and other students that gave them a sense of belonging. For example, this experience led one of the participants to select an HBCU as her college choice, sharing that, “ever since I attended an HBCU, I’ve always felt safe and included.” Harris III’s (2012) study reverberated a similar discovery in examining the feeling of isolation Black students experience when they transition from a predominantly Black high school or environment to a predominantly White university. This contrasts the feeling of being in a village, enabling a sense of warmth and belonging, that Black students experience when they transition from a predominantly Black high school to an HBCU, a sentiment that the participants resounded describing their time at Strive Academy.

Additionally, the participants emphasized that being exposed to culturally relevant learning, salient their identities, contributed to their improved self-perceptions and motivated their pursuit of academic excellence. For the Black participants, their reflections illustrated the positive impact of being around other students and staff that looked like them, exposing them to role models and an environment where they were less concerned about differences relating to racial identities and instead being able to thrive socially and academically. Reflections from the sole Latinx participant indicated that, while she was one of few Latinx students in the program during her time, she was able to thrive in an environment that was warm and welcoming, giving her an opportunity to closely interact with Black students, getting to know them and forming continued friendships with some of them.

The environment created at Strive Academy, as depicted from the interviews, aligns with salient influences in the microsystem of the Bronfenbrenner’s ecological model that support positive behavioral and academic outcomes, thereby contributing to the participants exceling

through their K–12 school journey leading to college acceptance. The review of literature in Chapter Two highlighted that children thrive in environments where there are caring and supportive adults (Hayes et al., 2017), and the analysis of data from the participants' interviews indicated that the staff at Strive Academy fostered an atmosphere that offered physical, social, and emotional safety for the participants. The relationships between nurturing staff and students influence positive development (Kuperminc et al., 2019), transcending beyond their K–12 school years.

The findings outlined for the first research question reaffirmed previous research that environments promoting social-emotional learning facilitate self-expression and self-confidence, leading to positive developmental outcomes for students (Deutsch, 2017), behaviorally and academically. A safe and nurturing environment has more to do with the people than the infrastructure and is a place where caring adults foster warm and supportive relationships with developing children (Kataoka & Vandell, 2013). Children develop a feeling of connection and sense of belonging in environments that comprise supportive adults who are caring, directly influencing their behavioral and developmental outcomes (Hayes et al., 2017). Consequently, when exposed to nurturing adults and environment, developing children thrive, leading to them to excel socially and academically, regardless of their socioeconomic status. The findings indicated that Strive Academy's summer STEM program provided an environment for the participants to thrive socially and excel academically through their K–12 school years and ultimately achieved college acceptance.

Findings for Research Question 2

The second research question was: based on students' perception, what role does Strive Academy's summer STEM program play in improving students' academic outcome? The

question explored the impact of Strive Academy's summer STEM program on the 13 participants' academic journey from K–12 schools to their current context as college students and college graduate. The participants described the various influences in their microsystems that impacted their academic pursuits and outcomes, underscoring the summer STEM program as a salient aspect of their academic journey. The findings from the analysis of data revealed four prevailing themes that aligned with the second research question. The themes that emerged were academic enrichment, college preparation and acceptance, collective efficacy, and self-efficacy.

Academic Enrichment

Supplemental educational programs play an important role in children's development, behaviorally, socially and academically. The analysis of the interviews with the 13 participants revealed that Strive Academy's summer STEM program offered them an environment that not only mitigated the summer learning loss but also introduced them to new mathematical concepts they would encounter in the new school year, in addition to providing academic support as they navigate their learning capabilities. When asked to share their experiences participating in Strive Academy's summer STEM program, the 13 participants (100%) stated that the program exposed them to mathematics they would cover in the fall semester of the new school year. Eight participants (62%) shared that the program helped them to be ahead in mathematics during the school year, five of whom underscored learning unique techniques that made it easier to solve difficult mathematics problems. Additionally, three of the participants referenced that during their time in the program they created a five-year academic plan that prepared and motivated them to begin planning for college early.

Next Grade Level

The interviews with participants illuminated Strive Academy's summer STEM program as focusing on academic enrichment, preparing students for the new school year as they enter a higher grade level and face more difficult mathematics classes. Josie noted:

I feel like they did a really great job with the whole program in preparing us for the following school semester. Like if you're going to take algebra next semester, they place you in the algebra class or a higher class, based on how you performed on the pre-test.

You wouldn't be placed in a math class that you have already taken.

Gavin conveyed that the program helped her to accelerate in her classes. She shared, "it just helped me know what I needed to work on, it helped my comprehension. It helped me focus on what I need work on the next [school] year." Helen also reflected on her experience and offered that the summer program prepared her for the next level of mathematics so she did not, "go in blind when I went into high school for math."

Sonia expressed her appreciation of feeling prepared for the new school year. She offered:

I like that I was able to have a place to go to during the summer and actually do stuff because most students they don't continue with their studies during the summer break. So summer is a time when your mind gets foggy and you don't remember things when you go into the new semester. I really appreciated that.

Sonja's recount referred to the learning loss students experience during the summer months when traditional schools are on recess. Summer learning loss impacts all students, especially Blacks and Latinxs in underserved communities who may not have access to educational resources when traditional schools are not in session. Strive Academy's summer STEM program

provided the participants an environment that fosters academic achievement, mitigating learning loss and enabling them to excel.

Ahead in Mathematics

In addition to being prepared for the next grade level, eight participants (62%) emphasized that when they returned to school in the fall semester, they were ahead in their mathematics classes. Josie, who started the program when she was a rising sixth grader, shared that as a result of the program she was ahead in her math class by two years. She noted:

At the time when I was in fifth grade, going in sixth grade and we weren't doing algebra or anything like that. So, it wasn't until my seventh-grade year that I would be taking pre-algebra. So that summer, I was taking pre-algebra. So, I was like ahead by two years.

For Josie, Strive Academy was a diversion from a predominantly White school environment, where she expressed feeling isolated, to a place where she felt comfortable being around peers that looked like her, focusing on learning and excelling academically, advancing in mathematics above that of her grade level when she returned to school in the new school year.

Gem spoke of not understanding the gravity of the experience she had during the summer program until she went back to school the following fall semester. Attending Strive Academy was a better alternative to being at home in her community during the summer even though she initially pondered the reason why she had to do mathematics during the summer break. She added, "I realized that I was being put into a class with students maybe two or a year older because I tested at a higher level than most of my other classmates or people in my age range." She continued, "[in the fall] we were in pre-algebra and I had already progressed into algebra the summer before, so it definitely helped me with my math during the fall semester. I was told I was way ahead of my classmates."

Ruth's experience at the summer program paralleled participants who expressed they were ahead in their math class when they returned to school in the fall semester. She spoke of being at an accelerated pace in mathematics when she was in high school because of exposure to the materials during her time in the summer program. She reflected:

I remember taking the pre-exam to see whether we would be having to be held in general algebra, or we can move up to the more accelerated classes a month. I remember I went in there and I killed it because I got placed in Algebra Two instead of Algebra One with a lot of my other classmates. So that was very cool because of the practicing and just having a better understanding from early on, I just feel like it was it was very nice to be able to go into high school already knowing key math concepts and being able to handle the challenges that came my way until I had to like learn the new material.

Analysis of the interviews revealed that participation in Strive Academy's summer STEM program enabled the high-achieving students to be ahead in their mathematics class when they return to school in the fall, and, overall, prepared all the participants to be ready for the next level mathematics class.

Unique Techniques to Solve Difficult Mathematics Problems

Five participants (38%) shared that during their time in summer program they learned different techniques that made it easier to solve difficult mathematics problems. Eva expressed that she had trouble working out problems and assignments in mathematics in school but during the summer program she learned to apply "different techniques to get to the right answer as opposed to just trying to figure out what my teacher is doing or copy what my teacher is doing. I learned other ways to do it, which was nice." When asked about the most beneficial aspect of the

summer program, Ruth answered, “I think having a better understanding in math and learning easier ways to do certain functions.” She elaborated:

I don’t do much math anymore but I would say it impacted me by just, knowing the basic functions of how math works and being able to adapt to any challenges and not being afraid to ask questions and seek out for help whenever I’m struggling.

Keena explained that the most beneficial aspect of her participation in the summer program was the repetitive approach the teachers used to help the students understand solving mathematics problems that allowed it to stick with her. She expounded, “you’ll never forget it,” referring to the techniques she learned. Gavin also expressed her appreciation for being introduced to different techniques to solve math problems that were difficult for her which helped her accelerate in her classes, adding, “because, if I did not have that, I would be so lost.” The participants’ recollection of their experiences in learning different techniques in solving difficult mathematics problems illuminated Strive Academy’s summer STEM program as an environment aligned with dispelling the notion that students of color, especial Blacks and Latinxs, enter the classroom at a deficit and are needing remedial help to compete with their White peers, especially those in higher-income communities where access to quality supplemental educational programs are more readily available.

Five-Year Academic Plan

Gem, Riley, and Helen recalled that their experience during the summer program included creating a five-year academic plan which motivated and helped them to begin thinking about and planning for college. Gem reminisced on working on a project during the summer program where she had to write about life after high school and where she saw herself in the

future, in five years, including what was needed to get into her desired college or university. She added:

We had to build an argument as to like why it was beneficial to go to attend the college I chose, what I had to do to be admitted and get through there. We talked about life after high school, like college and our expectations and where we will be after like two years, five years, and so on.

Riley recounted:

They help me prepare for my five-year plan. I remember they had these speakers come in and tell us like you need to have this certain plan like five years from now, and you can start building on that plan and achieving that goal, or start practicing for what you need to do to succeed in high school and be ready for college. So, knowing that being so young and knowing you can create a five-year plan has really, really helped me.

Helen echoed the same reflection as Riley and highlighted preparing a five-year academic plan. When asked what it was like participating in the summer program, she responded, “they did prepare me when it came down to writing out your future, like your five-year plan and prepared me in the sense of college and stuff like that.”

The participants’ experiences underscored the academic enrichment they received from their participation in Strive Academy’s summer STEM program, preparing them for the new school year and improving their academic outcomes. Furthermore, the participants’ experiences regarding their time at Strive Academy speak to the interconnected layers of influences surrounding children in the Bronfenbrenner’s ecological systems that shape their developmental outcomes, socially, behaviorally and academically. Strive Academy’s awareness of the disparities in educational policies and access to resources available to Black and Latinx students

in underserved communities and the deficit thinking mindsets they face emanating from the influences in the exosystem and macrosystem drives the organization to provide quality educational resources to its students.

College Preparation and Acceptance

The participants had a lot to say about Strive Academy's summer STEM program's role in exposing them to the college process, underscoring the academic preparation aspects and the college tours that took place at the end of each week. Eleven of the 13 participants (85%) shared that their participation in the summer program was pivotal in their college preparation and acceptance journey. Six participants (46%) emphasized the college tours they participated in during their time in the summer program. Dava, who is currently attending one of the universities she visited as a student in the summer program, shared, "it's just nice, especially then, to imagine what it is going to be like when you come here... to think about what you would major in." Callie remembered visiting different colleges during his time in the summer program which helped him envision being able to attend one day. He added that the college tours, "just gave me that hope knowing if I keep working hard, doing necessary steps like coming to this program, you know, doing good in school, all this other stuff then I could get here one day."

Gavin emphasized the workshops for parents and students held during the summer program, where speakers from different universities came and spoke on various topics including college preparation, applying for scholarships and financial aids, and money management. She added, "it was important to go to those because I learned how to manage my credit cards and actually pay them off like right away, which is helping me now in college." She also shared the involvement of her parents in her academic goals. In addition to attending the summer program, she took college courses while in high school, earning her enough credits resulting in her being

able to complete her undergraduate studies in two instead four years. Gavin further recounted that when she was ready to begin the college application process:

I just pulled out all the papers from [the workshops], a stack of them, that had information on the colleges and scholarships to apply to. So, it really helped me because I received so many scholarships. I'm basically going to school for free now because of the summer program.

Gem offered a similar account that when it was time to apply for college, she had a packet of materials about the college application process that she had gathered during the summer STEM program. Having attended the summer program beginning in middle school, she reflected that she had begun gathering college materials then.

Preparing for college can be a daunting and overwhelming task for students regardless of their socio-economic background or K–12 school experience. When asked what was the most challenging part of the college preparation process, Riley spoke of deciding which college to attend, an utterance echoed by several of the participants. Their concerns were not limited to having the required academic grades or SAT scores but rather choosing a college or university, from the many options they had, that would be best suited for them. Cleve, who credited the summer program for providing access to college tours that exposed him to different prestigious universities, also faced the daunting task of deciding which university to attend, a decision that eludes some students in underserved communities who do not have access to a supplemental educational program like the summer STEM program at Strive Academy. Of his experience at the summer program, Cleve shared:

I was exposed to the college process in general. I remember going to [the university] and falling in love with the campus. I remember seeing 20-year-olds, you know, just walking

to class and I remember feeling like, wow, it's going to be me one day. Just to know what a college student looks like, and I just remember wanting to strive to be that.

Sonia recounted her mother instilling the value and importance of education in her and her brother. She expressed:

Because of our race, she knows that it is more difficult for us as Black people to get into higher education systems, to become successful to feel like equals with our non-black counterparts. So, I always knew, if I wanted to have a good job, I need to go to college because a Black person without a college degree, if you're not like applying yourself well, you're not really going to get anywhere far.

Through its summer STEM program, Strive Academy exposed participants to a college-going culture, encompassing college tours and college preparation resources that enhanced related resources some participants may have received at their respective high schools, and providing needed resources to other participants lacking the same at their schools. As the achievement and attainment gaps in underserved communities widen, parents seek the support of programs like Strive Academy's summer STEM program to offset the deficit.

Collective Efficacy

The participants highlighted the support they received from the staff during their time participating in the summer STEM program, impacting their academic outcomes signaling the impact of collective efficacy in action in their ecosystems. Collective efficacy, defined as a shared belief that individuals can achieve success through combined efforts (Bandura, 2001), encompasses program staff, parents, and others working together with the participants to ensure that they maximize their full potential. The interviews with participants revealed many instances of collective efficacy, whether or not the parties were aware, from parents supporting each other

to the coordination with program staff and students building relationships with the staff and each other. Ten of the 13 participants (77%) referenced instances of adults and peers believing in them and encouraging them to be their best as they pursue academic excellence. When asked what was her favorite memory about growing up in her community, Eva shared about the supportive adults in her community, noting, “if something was wrong, you can always go to any of the adults on our street, and they would help you with anything.” She also mentioned that teachers in the schools she attended, “they were really pushing the kids, towards making sure that we were always on the right path... so that was really nice and they believed in us.”

During her time attending the summer program, Eva encountered caring adults who believed in her and encouraged her to be her best. She shared regarding the program director, “she really just encouraged everyone to do their best and strive for that success and that greatness. So, it was really nice to have her support.” Josie reflected on the impact of the teacher-student relationship on ensuring that the students were prepared for the new school year. She stated:

Honestly, I remember the teacher-student relationships the most and how much they made sure that we were prepared to go back to school in the next year. If we didn’t have those relationships, we would be lost going back to school.

Gem spoke of the staff, including the program director. She shared:

They would always check in [on] us making sure we were doing well, not only at the end of the week but several times each day. They believed in us and encouraged us. I will remember their lessons for years to come, even if I forget their names.

Keena’s account echoed what some of the participants articulated about the collective efficacy experienced during the program. She recalled being scared to speak up and participate in class at

her school but during the summer program, the teachers dissuaded that habit and instead offered, “let’s learn this together,” and had the students come to the whiteboard to solve the math problem alongside him. She continued, “it made me have a different mindset, a good attitude toward school and solving problems.”

Gavin spoke of her relationship and interaction with the tutors that were also helpful. She shared:

The TA’s were very helpful, because they were also past students of [Strive Academy] so they also were able to give us feedback, tell us like what to expect, and tell us that we will do well. They also shared their experience when they were students in the summer program; like you don’t want to do this, you want to focus more on this problem.

Cleve also reminisced on the impact of the staff. He said, “I do remember feeling very warm, like just greeting the staff and seeing them every morning. I do remember feeling positive feelings towards them.” Referring to one of the teachers, he continued, “he definitely had a positive impact on me for everything that he taught me. He believed in the students.” Ruth reflected on the patience of the program staff:

I like the patience of the program staff because it was like everybody worked really well with each other, taking time to try to help you better understand the concepts if you were struggling, and I really appreciated that a lot because sometimes I was just getting frustrated and wanted to give up. But then, you know, they give you that extra push to keep going. That was very beneficial.

The collective efficacy of supportive adults in the developing children’s ecological systems is fundamental to their upbringing, enabling them to thrive and, to not only see their potential but, believe in themselves and pursue academic excellence. Strive Academy fostered a culture of

collective efficacy where the staff not only expressed their beliefs in the participants capabilities but they helped them to achieve academic competence, some attaining self-efficacy in mathematics.

Self-Efficacy

Self-efficacy comprises the participants' belief in their capabilities to accomplish specific tasks and, according to Bandura (2001), impacts the goals they set and accomplish. The analysis of the 13 participants' interviews accentuated the impact of Strive Academy's summer STEM program on their performance in mathematics, with some participants highlighting their improvement in the subject and, for others, advancement ahead of their peers when they return to traditional school. Seven of the 13 participants (54%) mentioned that the learning and the work they did during the summer helped them have a better understanding of mathematics, even advancing to higher levels in their math classes. Eva offered that "it made me just more confident and more prepared for when I went back to actual school. I didn't feel like I was lost." Josie stated:

I guess [the program] always taught me to kind of push myself further than anyone else because it's like at the end of the day, enough isn't necessarily always enough when it comes to your academics. You had to devote those extra hours outside of class to go to the library and sit down and really go back over the material that you covered... I feel like that's what [Strive Academy] taught and how they really impacted my academic life.

Five of the participants (38%) shared that they also became a student tutor while participating in the program, inferring an increased understanding of the content, leading them to be able to tutor other students. Dava expressed, "I loved that the teacher let the students who finished their work early to move around the classroom and help other students, instead of sitting

there. I was able to help other people.” Gem offered that during the summer program, when other students needed help:

Instead of giving them my paper because I was already done with the work by the time class was over. Instead of giving them my paper to copy, I’d be like, okay, let’s go through this and I’ll explain it to you. So, it’s much more understandable, you know, you get something out of it. I feel like that did help my social skills a little bit, at least helping them as well.

Josie was a student tutor during her time in the program. She shared, “when I got to high school, I became a tutor for the after-school program. So, when it came to that experience, it helped with getting those extracurricular activities noticed for colleges.” Eva also became a student tutor during her summers in the program and reflected, “not only did I just attend the summer program as a student, I was a student tutor also, so that was nice.” Achieving self-efficacy in a subject matter is proven in various ways, including helping others understand the same subject matter. For Josie and the other four participants, their roles as tutors demonstrated their self-efficacy in mathematics, enabling them to help other students succeed.

Discussion for Research Question 2

The review of literature in Chapter Two highlighted supplemental educational programs as environments that not only provide social and emotional support for developing children but also academic enrichment during out-of-school hours (Afterschool Alliance, 2017). The findings related to the second research question affirmed the contribution of Strive Academy’s summer STEM program to the participants’ academic outcomes, enabling them to successfully complete high school and secure acceptance into a college or university. While some of the participants attended K–12 schools in higher income communities where the education is of higher quality or

other private and charter schools, their summer converged at Strive Academy's summer STEM program where they experienced an environment that was welcoming with supportive and caring staff who empowered the participants to achieve academic success.

Majority of the participants expressed that the program provided them with a space where they were comfortable to be themselves, allowing them to focus more on learning. The participants' experiences align with Afterschool Alliance's (2017) study that when students from underserved communities are exposed to quality educational resources, they excel academically compared to their counterparts in higher income communities who have easier access to these resources. For all participants, Strive Academy's summer STEM program provided equal access to quality supplemental educational resources irrespective of their socioeconomic status. Additionally, the findings reaffirmed Gentry et al.'s (2017) study that when exposed to environments and resources conducive to growth and development, students from underserved communities excel similar to their peers in higher-income communities. Furthermore, during their time in the summer STEM program, the participants experienced the collective efficacy of adults in their ecological systems who believed in them and worked in concert enabling their academic achievements. When collective efficacy is present, students excel in their academic pursuits regardless of race or socioeconomic status (Donohoo et al., (2018).

The participants, located at the center of the Bronfenbrenner's ecological model, navigated the complexities of their family, social and cultural structures as they form connections to influences in their environments that enabled their learning and development (Hayes et al., 2017). Moreover, the participants affirmed that Strive Academy's summer STEM program fostered an environment that incorporated culturally relevant content with its academic enrichment curriculum, thereby providing Black and Latinx students with portraits of positive

and relatable role models who look like them and possibly have traversed similar experiential paths as the participants. Exposing the participants to culturally relevant teachings that comprised salient aspects of their cultural heritage introduced them to the cultural wealth, a multifaceted richness of the depth and strength people of color, acquired through years for resilience in the face of tyranny and disparate treatments (Yosso, 2005), as they persevere in overcoming systemic racial barrier. Consequently, participating in Strive Academy's summer STEM program enabled the participants to excel academically, some achieving self-efficacy in mathematics, a move toward closing the achievement and opportunities gaps existing in underserved communities and recently exacerbated by the COVID-19 pandemic.

Findings for Research Question 3

The third research question was: based on students' perceptions, how does Strive Academy's summer program help students in overcoming stereotyping related to race and class? The question sought to understand the participants' perspectives on whether their participation in Strive Academy's summer STEM program contributed to them overcoming stereotyping and race related issues they faced during their K–12 journey and beyond. The three prevailing themes that emerged from the analysis of the findings were racial identity and impact, overcoming stereotyping and deficit thinking, and navigating racism in America. In addressing the third research question, the analysis also revealed the impact that participation in Strive Academy's summer STEM program had on helping the participants overcome stereotyping related to race and their socioeconomic status.

Racial Identity and Impact

The race of an individual is a salient attribute of their identity and historically has been a determining factor in access to resources. The participants had varying responses when asked

about the first time they became aware of their racial identities. While majority of the participants (69%) attended predominantly White high schools, their K–8 school journey included schools with diverse populations, contributing to when they became aware of their racial identities and the impact on their upbringing and academic journey. Two participants stated that they were always aware that they were Black and could not pinpoint a time when that awareness happened. Dava expressed:

I feel like once you're Black, you have to know, you notice when you're the only one that's Black in a class or like when you notice there's so little of people that look like you. It's never like affected how I see other people.

Cleve, Lacy, Riley, and Helen stated they became aware of their racial identities when they were in elementary school. Cleve recalled:

I remember learning about Birmingham 16th Street Church bombing in elementary school, and just the reasoning behind it. And I felt everything, I just felt very defeated...I just felt that pain that came along with that moment, and I remember resonating with that. I became fully aware of my blackness then.

Lacy reflected on being made to feel like she was different from everyone and had a difficult time making friends. She shared:

I remember that school was never a problem for me I guess, but the experience between everything else was different, because that was when I dealt with my first racial experience. This White girl didn't want to play with me on the playground. And she would always act like she just didn't want to be near me, or just didn't want to touch me at all. And she had brought up because it's the way that I look.

Eva, Gem, and Helen became aware of their racial identities during middle school. Gem reflected:

In middle school, there were suddenly cliques that weren't formed in elementary school. You know, there was suddenly this unspoken habit or rule that you stick to your own kind, I guess, and that was something I never really got either. And then I went back to my old home with my grandparents and realized that things were suddenly different and I no longer had my old friends and couldn't speak to them as freely because their parents didn't approve of the fact that I wasn't like them. So, it was jarring to say the least, but it wasn't something that emotionally kept me back. If anything, I found my own people and made friends with them.

Riley spoke of being biracial and becoming aware that she was Black during the seventh grade in middle school. For Josie, Keena and Callie, it was during high school when they had that awareness that being Black meant they were looked at differently. Josie explained, "I became aware of my racial identity during high school. That's when I started watching movies, reading books, things like that. I became more aware and started kind of picking up on things more in high school." Callie, who attended diverse K–8 schools but a predominantly White high school in a higher income community, added that it was in high school that he became fully aware of being Black. He shared, "it's not like I didn't know before but when I started high school, I became aware because of the area I was in. It was majority of White people and rarely anyone that looked like me."

The participants' varied experiences about awareness of their racial identities highlighted the differences in perceptions and treatment encountered in their pursuit of academic success. The disparities in access to quality educational resources in their respective communities led to

majority of the participants attending predominantly White schools for better education, increasing the racial discrimination they experienced. Each participant's account has some components of systemic racism that has permeated communities of color, especially the education systems, ultimately impacting the academic outcomes of Black and Latinx students residing in these communities.

Stereotyping and Dispelling Deficit Thinking

Stereotyping and deficit thinking create an image of minoritized individuals or groups that is less than favorable compared to other individuals or groups (Ledesma & Calderon, 2015; Quadflieg et al., 2009). The participants were asked whether they perceived their race being a factor in how they saw themselves and how others treated them growing up. Two participants noted not being personally aware of any instances where their race was a factor in how they were treated, whether good or bad. Conversely, 11 of the 13 participants (85%) revealed experiencing instances of stereotyping and deficit thinking mindset from adults and peers toward them during their K–12 school journey and during college, associating the treatment to their race. Sonia, who attended a predominantly Black and Latinx high school, is currently attending a prestigious predominantly White university, and expressed:

People see me and they think, oh, she's just a Black girl. She got into [college] because they wanted to meet a diversity quota. You know, like sometimes I think the imposter syndrome gets me a lot here, like you're not supposed to be there and maybe other people know that you're not supposed to be there, either. So, sometimes I do feel that imposter syndrome being here and I know I stand out in the crowd more than other people, not because of my knowledge, not because of my skills, but because of my race.

The imposter syndrome, represented as a feeling of fraud, failure and not belonging in relations to ones' success and accomplishments (Slank, 2019), may result from internal and external factors impacting high-achieving individuals of a certain group based on gender, race or class (Holden et al., 2021). The feeling Sonia expressed may also be related to stereotype threats, the risks of confirming a negative stereotype associated with one's race or social group (Edwards, 2019), that Black students in predominately White institutions experience that may discourage or motivate her academic performance.

Eva's account of her experience highlighted some of the stereotypical traits ascribed to Black girls that she encountered. She shared:

People are always shocked at the fact that I am not your stereotypical Black girl, being like I'm not, you know, for lack of better words, not ghetto. I'm not loud, I'm not obnoxious, like they have put that stereotype on us. I'm more reserved, I speak 'more white' so to speak, you know. I speak like that, not because I want to be White but because I am educated.

Eva's reference to speaking 'more white' represents a stereotype trait assigned to Blacks or people of color who speak fluent Standard English, most times by people of the same race, confirming the deficit thinking mindset associated with minoritized groups. The synonymous phrase 'acting white' accompanied orators like President Barack Obama, Martin Luther King Jr., Booker T. Washington, and other people of color, referencing their eloquent articulation (Christie, 2010) or how they presented themselves. These phrases also contribute to stereotyping threats that Black and other students of color encounter in fear of being labeled as such (Christie, 2010), sometimes inhibiting said students' motivation to excel academically.

Josie juxtaposed her experience of being treated differently during high school because she is Black with being at an HBCU where the population is predominantly Black and a place where she has a sense of belonging, similar to her time at Strive Academy. She added that:

I really look back and see how much it impacted me and how people kind of treated me differently growing up, especially in school. And I didn't even realize the impact at the time until I got to college and was like, oh, nobody treats me like that way here, the way they treated me during K-12.

Josie's experience, previously discussed, underscored the impact of stereotyping and deficit thinking Black and Latinx students experience as they attempt to assimilate in predominantly White environments. Frequently scrutinized for the changes to her hairstyles, Josie credited her time at Strive Academy, "learning in a classroom environment with nothing but African American kids," for introducing her to HBCUs and enabling the continued experience of being around students who looked like her. She added, "ever since I attended an HBCU, I've always felt safe and included." Students thrive in environments where they are less concerned with stereotyping and deficit thinking mindset, especially being around others that share similar backgrounds.

Navigating Racism in America

Critical race theory (CRT) premises racism as a normal occurrence in the United States, infiltrating the education system, influencing policies and practices, and interwoven in everyday culture. When asked their perceptions and feelings about racism in America today, the participants' responses varied. Three participants (23%) mentioned that they either avoided talking about, reading or watching anything related to racism because of the pain they feel. Seven participants (54%) explicitly stated that racism exists in American society today, five of

whom recalled their parents having the race talk with them, a talk typical for most Black families in the United States. Ruth said:

I would say probably when I was a young age my mom gave me that talk about, you know, the color of my skin. She sat me down and told me that I would be looked at a certain way and that I would just have to prepare to hold myself together when it comes to certain situations and I would be judged and I couldn't really act on it how I wanted to because the outcomes may not be good.

Cleve shared, "I remember my parents giving me the talk, you know, saying, you have to be on your best behavior because you're Black and some people don't like people that look like you." He continued:

I would say my experience validates my feelings about racism. I do feel like I'm looked at differently, especially in such a diverse city. In such an economically diverse city I sometimes feel that if I'm in the more well-off area, I'm under more surveillance, whereas if I was in an average economic area, I wouldn't have as many eyes on me. In my experience, I'm not exempt from it because of my education or my ability to code switch. I do feel like the effects of racism in my life.

Cleve's reference to "code switch" reflects the practice of individuals of different ethnic backgrounds alternating between two or more languages or dialects in one conversation (Auer, 2002) to accommodate the understanding and acceptance of others in the conversation. Similar to other ethnic groups and their related cultural languages or dialects, African Americans alternate between African American English (AAE) and Standard American English (SAE) as they navigate conversations between mixed groups (Kendall & Wolfram, 2009). One's ability to code switch helps with adapting to and navigating mainstream social and cultural settings.

Helen also added her perspective on racism in America. She shared that her mother had the talk about race with her and presented obtaining a college degree as a mandatory pursuit for her. She stated, “[my mother] told me, as a Black woman, nothing will be handed to me so I have to work harder than anyone else for it. So, she put that mindset in me to work harder, work hard.” Gem also reflected, “there’s an abundance of racism in America. Unfortunately, people will dislike people for being any sort of way, the way they look, the color of their skin, for having a certain mindset, for being a certain type.” Dava expressed that racism today is:

More subtle, like microaggressions, at least, from what I’ve seen. I know there are more outright stuff even in the media. But like I said, I’ve never experienced it, but I do think America hasn’t like really changed or really made a difference because there are people who are still speaking out against and still having to deal with that just with like anything... there’s Black people who have to deal with racism. There’s Asian people who deal with racism because of COVID-19.

Lacy shared:

Racism today is just like history repeating itself. You have situation where cops are killing people, and so many things are so racially inclined. It’s just kind of like you know this because people are starting to realize that this exists and it’s sad because it should have never been where things get so bad for people to realize that this is going on.

The participants’ varied perspectives on racism in America speak to its complexities and impact on the affected individuals. As they navigate the Bronfenbrenner’s ecological systems, they adopt coping mechanisms, like “code switching” between their cultural dialects or native languages and socially accepted language, and the parental “race talk,” enabling assimilation into social settings as they contend with systemic racism in their pursuit the academic excellence.

Strive Academy's Summer Program Impact

The participants' responses to awareness of their racial identities and perspectives on racism in America revealed their lived experiences that impacted their perception of self, contributing to their pursuit of academic success during their K–12 school year to their college preparation and acceptance journey. The participants were asked whether their participation in the Strive Academy's summer STEM program helped them to navigate racial issues they encountered during their K–12 school years and in their current college journey. Ten of the participants (77%) expressed that their experience did not directly help them navigate the racial issues they faced at school or in society. Josie shared that while she appreciated spending the summer around predominately Black students and not having to encounter microaggression or stereotyping comments, the environment was more of a shield from the real world during the summer months, and looking back she still had the feeling of isolation and encountered racial issues, including microaggression, through the remainder of high school. When asked what could have been done to make her experience at Strive Academy one that achieved greater results for her, she offered that the program should consider adding:

Workshops and things like about how to navigate through the world and being in the ethnicity or the race that you're in. I don't remember any type of things like that. So, if they had any type of workshops [with] successful Black people who would come in and teach on how to navigate the world and your skin. You know, being around just Black students isn't always enough. So especially if you're going to go from like being around Black students to going back to school with being around other students of other colors, it's like then what was the point? So, yeah, definitely incorporating workshops to help

Black students navigate racial issues they face in school. Yes, that would have helped a lot.

Josie also added, “but that’s also a reason why I attended an HBCU because it is a safe space for everyone. And, you know, ever since I attend an HBCU, you know, I’ve always felt safe and included in a way.” Homogeneous environments, comprising students of a predominant race and culture, may result in the feeling of isolation and disconnect for students who are the minority in numbers (Wong et al., 2021). For Josie, choosing an HBCU over a predominantly White university continued the sense of belonging she experienced at Strive Academy. Furthermore, while Josie’s reflection illuminated an area of growth for Strive Academy as it seeks to expand its summer STEM program to reach more students in underserved communities, not all participants shared the same experience.

Three participants (23%) credited their participation in the summer program for helping them to navigate racial issues they faced. Cleve said:

I really feel like I developed a sense of self-confidence from attending the program. I remember [the teacher] talking to us about Harriet Tubman. And he broke down her full name. He turned it to an acronym. He told us to have a heart that’s courageous and just gave us all these very encouraging words that really stuck with me, and I was able to see my worth. In that lecture, I was able to see who I was based off of what he said about my ancestors and people that came before me. And I really felt like that that stuck with me. So as far as the racism related experiences, I never felt like they were a hindrance to me more than they should have been because I knew who I was personally.

Likewise, Riley reflected on her experience attending the summer STEM program and how it helped her navigate race related issues. She expressed:

It really helped me because [in the program] they really taught against violence among each other and instead to use your mindset, use your intelligence to really shut someone being racist or don't like engage with them. Yes, use your intelligence as your voice. You have a voice. Let it be known your intelligence speaks highly of yourself.

The participants' experiences navigating racism and race related issues during their K–12 journey and beyond resounded the fortitude they developed in pursuit of academic success. Their lived experiences dispel historically deficit thinking that Black and Latinx students from underserved communities are academically inept and needing remedial academic support compared to their White counterparts. Furthermore, the participants' experiences highlighted a need to address the culture of systemic racism that continues to permeate the education systems, primarily impacting Black and Latinx students, limiting the realization of their full potentials.

Discussion for Research Question 3

Race, at the center of systemic racism, not only shaped culture in the United States (Omi & Winant, 2014), but its intersection with other characteristics of individuals influenced their identities and sense of self-worth (Todd, 2020). The findings related to the third research question highlighted the participants' varied perspectives about race related and stereotyping issues they encountered during their K–12 school years and into their college journey. The findings also underscored the degree to which participating in Strive Academy's summer STEM program helped them navigate or overcome racial issues. The different perspectives accentuated the issue of race and racism in the United States as a complex conundrum impacting Black and Latinx students attending predominantly White schools while seeking to obtain the best education (Yosso, 2005). Furthermore, the findings illuminated the racial inequity that continues to pervade society and the effect of racism and stereotyping on students' self-perception during

their upbringing and academic journey, affirming Ladson-Billings' (2013) study on critical race theory that premised racism as a normal day-to-day occurrence in American society.

Black and Latinx students in underserved communities face racial discrimination, through stereotyping and deficit thinking mindset, impacting their academic outcomes. In overcoming the hurdles resulting from systemic racism, Black and Latinx students develop resilience that motivate their academic achievement (Carter, 2008). The finding related to the third research question revealed that Strive Academy's summer STEM program provided culturally relevant teaching for the participants, enabling a better understanding of themselves. However, majority of the participants did not connect their participation in the summer STEM program with helping them overcome race related, deficit thinking mindset of others toward them, and stereotyping issues they continued to face during their K–12 school years and into college.

Furthermore, the findings revealed that majority of the participants attended schools outside of their communities, resulting in an experience that may have been academically beneficial yet rendering a feeling of isolation and disconnect in their school environments devoid of culturally relevant or inclusive teachings salient to the participants' background. Consequently, students from underserved communities face the double-edged sword of subpar quality education in predominantly Black and Latinx K–12 schools or the raw exposure to stereotyping and race related issues in predominantly White K–12 school in pursuit of quality education. In seeking to bridge the gap in access to quality supplemental educational, the findings revealed that Strive Academy's summer STEM program unintendedly did not help students prepare for the isolation they would continue to feel in their external environments, revealing the need to explore ways to remedy the concerns.

Summary of Overall Findings

This qualitative study sought to understand the experiences of students from underserved communities who participated in Strive Academy's summer STEM program and examine whether their experiences influenced their academic outcomes. The prevailing findings affirmed Strive Academy's summer STEM program as an exemplary supplemental educational program providing academic enrichment and support for the participants. The findings illuminated salient attributes of Strive Academy's summer STEM program, including nurturing environment, safe space, supportive and caring staff, college-going culture, and a place exposing participants to STEM curriculum and culturally relevant teaching. The relationships between the staff and participants enabled their behavioral, social, and academic development and established connections that transcended the participants' K–12 school journey. Additionally, the participants reported improved self-perception and a sense of belonging during their time in the program, surrounded by staff and peers from similar cultural and social backgrounds who looked like them and experienced similar issues they encountered in their K–12 school journey.

Likewise, the participants underscored exposure to culturally relevant teachings that introduced them to role models and content reflective of their heritage, providing them with counterstories that dispelled deficit thinking about their academic capabilities. The prevailing findings also illuminated Strive Academy's summer STEM program as providing the participants with access to college preparation support, including college tours that exposed them to college campuses and college preparation workshops that provided resources pivotal to their college acceptance journey. Furthermore, the findings unveiled the collective efficacy the participants experienced in their communities, K–12 schools, and during their time participating

in the summer program, emphasizing that when adults express a belief in children's abilities to accomplish tasks, they excel in goal achievement.

Analysis of the prevailing findings accentuated the participants' self-efficacy in mathematics, with all participants revealing that the summer STEM program prepared them for the next level of mathematics when they returned to school after the summer break. Achieving self-efficacy enhanced the participants' learning and shaped their approach to goal accomplishment. The participants also revealed awareness of their racial identity and its impact as they navigate racism in America and work to overcome stereotyping and deficit thinking mindset of others toward Black and Latinx people. Notwithstanding, the participants continued to experience isolation and disconnect when they returned to their predominantly White K–12 school environments, exposing the pervasive influence of systemic racism embedded in education policies and practices. Consequently, the findings signal an opportunity for Strive Academy to reimagine its operating model for its programs, creating a curriculum premised on a diversity, equity, and inclusion (DEI) centered model encompassing antibias and antiracist teachings. This approach incites a proactive move toward lessening the racial and stereotyping problems Black and Latinx students encounter as they traverse the K–12 educational systems in pursuit of academic success. Chapter Five will explore three recommendations addressing the findings, positioning Strive Academy to address the problem of practice. It will also propose future research to broaden this salient area of study.

Chapter Five: Recommendations

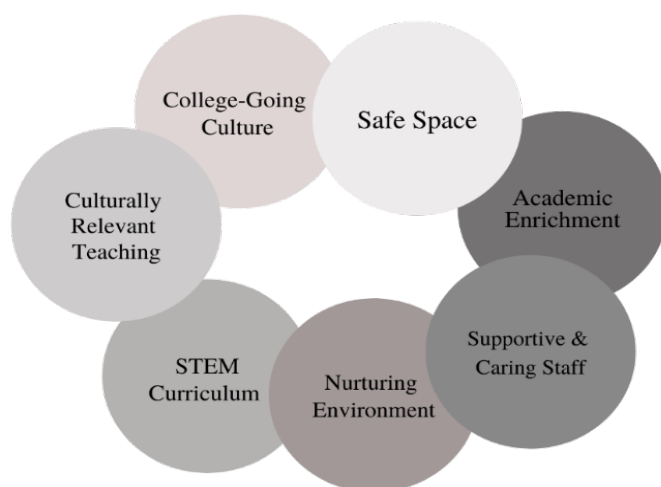
This Chapter presents the recommendations associated with the prevailing findings for this research study of expanding access to quality supplemental educational programs for K–12 students in underserved communities. Chapter Four comprised the prevailing findings that emerged from the research and discussion aligning with the three research questions, revealing the impact of Strive Academy’s summer STEM program on the participants’ academic outcomes as they ascribed meaning to their experiences. The findings related to the first and second research questions affirmed Strive Academy’s summer STEM program as an exemplary supplemental educational program for K–12 students living in underserved communities. In addition, the findings showed that Strive Academy provides an environment that is warm and welcoming with caring and supportive staff who work with the participants to motivate them as they pursue academic success.

Conversely, the findings related to the third research question revealed that majority of the participants did not credit their participation in the summer STEM with empowering them to overcome stereotyping and race related issues when they were back in the K–12 school or other external environments. Thus, the finding related to the third research question presents an area of growth for the Strive Academy in providing tools to its students that will enable them to overcome the stereotyping and race related issues they face as they navigate their academic journey. The recommendations outlined in this Chapter offer improvement to the organization's summer STEM program, aligning with its goal of expanding access to more students in underserved communities. Additionally, recommendations for future research are presented, followed by the conclusion that summarizes and culminates this study.

During the interviews with the 13 participants, they highlighted several salient attributes of Strive Academy's summer STEM program, as they ascribed meaning to their experiences participating in the summer program. Figure 3 captures the attributes that position the summer STEM program as exemplary program.

Figure 3

Salient Attributes of Strive Academy's Summer STEM Program as Shared by the Participants



The findings, generated from the analysis of the participants' interviews, were assessed against the respective research questions to determine alignment and identify any variations or gaps, leading to recommendations for practice and future research in this area of study. Accordingly, the three recommendations for practice, as outlined, represent strategies for improving Strive Academy's summer STEM program by providing tools to its students, enabling them to overcome stereotyping and race related issues they may face in the outside world. The recommendations also encompass strategies for expanding program access to reach more underserved communities, moving toward closing the achievement and attainment gaps. The three recommendations are:

1. Redesign the culturally relevant curriculum to incorporate a diversity, equity, and inclusion (DEI) centered operating model.
2. Expand access to the Strive Academy's programs by establishing formal partnerships with local public and charter middle and high schools.
3. Increase awareness of Strive Academy's summer STEM program through a strategic public marketing campaign.

The recommendations presented stand to benefit the organization's stakeholders including the organization's leadership team, school administrators, and parents in underserved communities seeking quality supplemental educational programs for their children.

Recommendation 1: Redesign the Culturally Relevant Curriculum to Incorporate a Diversity, Equity, and Inclusion (DEI) Centered Operating Model

The findings from the present research unveiled the gap between two contrasting environments that the participants experienced during their academic journey from their K–12 school years to college and the environment they experienced during their time at Strive Academy. Based on the majority of participants' experiences, Strive Academy's summer STEM program comprised caring and supportive staff who fostered a safe and enriching environment that provided them with a sense of belonging. The program also offered culturally relevant teachings that exposed the participants to Black and Latinx historical figures enabling them to improve their self-perception, become more comfortable in their skin, and exposed to successful adults who looked like them. The program provided the needed, yet temporary, summer escape from the White-dominant academic environment, marred with microaggression, stereotyping, and race-neutral policies, and from the underfunded and under-resourced predominantly minoritized K–12 environment in their immediate neighborhoods. Contrariwise, the program did

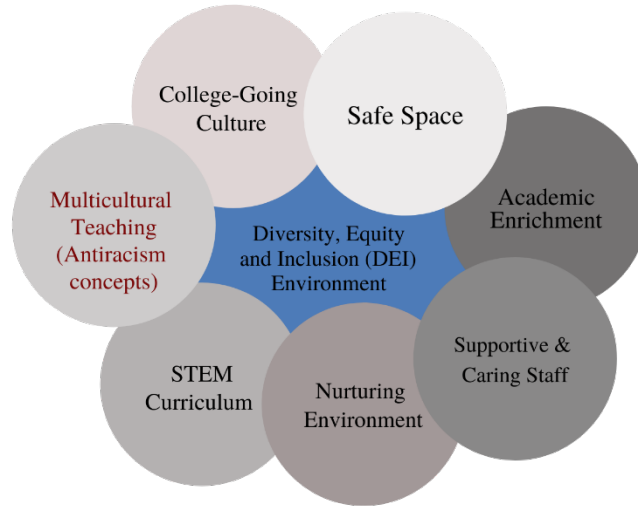
not help them overcome the feeling of isolation or combat microaggression and stereotyping they experienced when they returned to their incongruent K–12 environment for the new school year.

For example, when asked about what could have been done to make the experience at Strive Academy one that achieved greater results for her, Josie expressed that while her time in the program helped her to be more comfortable in her skin, it didn't provide tools to navigate the outside world where she faced stereotyping and race related issues, leading to the feeling of isolation. The identified gap in Josie's reflection, and that of other participants, presents an opportunity for Strive Academy to reimagine the operating model for its summer STEM program and seek to create a diversity, equity, and inclusion (DEI) centered environment. Such an approach would continue to promote and foster culturally relevant teachings but incorporates a multicultural and inclusive teaching model that comprises antibias and antiracism components, covering salient topics such as microaggression, overcoming stereotyping, and strategies to thrive in any environment in which the participants find themselves. Antibias and Antiracism move teaching toward policies and practices that foster racial equity and inclusion, and away from those that are race-based or race-neutral (Blake et al., 2019; Kleinrock, 2021).

Critical race theory (CRT), as a framework, posited that the design of the traditional educational systems presents Black and Latinx students as academically and culturally inept, viewing them from lenses of failure and as individuals needing remedial education (Ladson-Billings, 2013). The findings of this present research dispelled that notion and instead showcased the lived experiences of Black and Latinx participants who excelled through their academic journey while faced with racism, stereotyping, and deficit mindset thinking of those around them in the academic environment. Strive Academy originally designed its summer STEM program to redress the void created by traditionally White-dominant adequately resourced schools where

minoritized students experienced the feeling of isolation and lacking a sense of belonging. It also sought to address the deficit caused by underfunded K–12 school environments that leave promising Black and Latinx students behind or cause a financial burden for parents in underserved communities seeking the best education for their children. Accordingly, the design of the curriculum dispelled deficit thinking and highlighted counterstories of the under-recognized prominent Black and Latinx figures who made significant contributions to the STEM fields, giving Black and Latinx students visuals of accomplished role models who look like them. However, based on the findings of the third research question, Strive Academy’s summer STEM program unintendedly fell short of equipping the students to successfully process the racism, microaggression, and stereotyping they encountered during their academic journey and in their current context.

CRT, a salient foundation for this study’s conceptual framework, postulated that racism is customary in American society and has infiltrated policies and practices that impact underserved communities (Yosso, 2005), comprising primarily Black and Latinx people. Therefore, understanding the systems that influence education for K–12 students in underserved communities will enable Strive Academy to reframe its culturally relevant teaching component and incorporate strategies for students to thrive in homogeneous or heterogeneous environments. By reframing its curriculum to incorporate this holistic approach, Strive Academy will empower its students to confront and overcome racial issues, and ultimately enabling them to add their own counterstories. Figure 4 outlines a revised model for Strive Academy’s summer STEM program that reimagines its program as a DEI learning environment while preserving the salient attributes that made it an exemplary supplemental educational program.

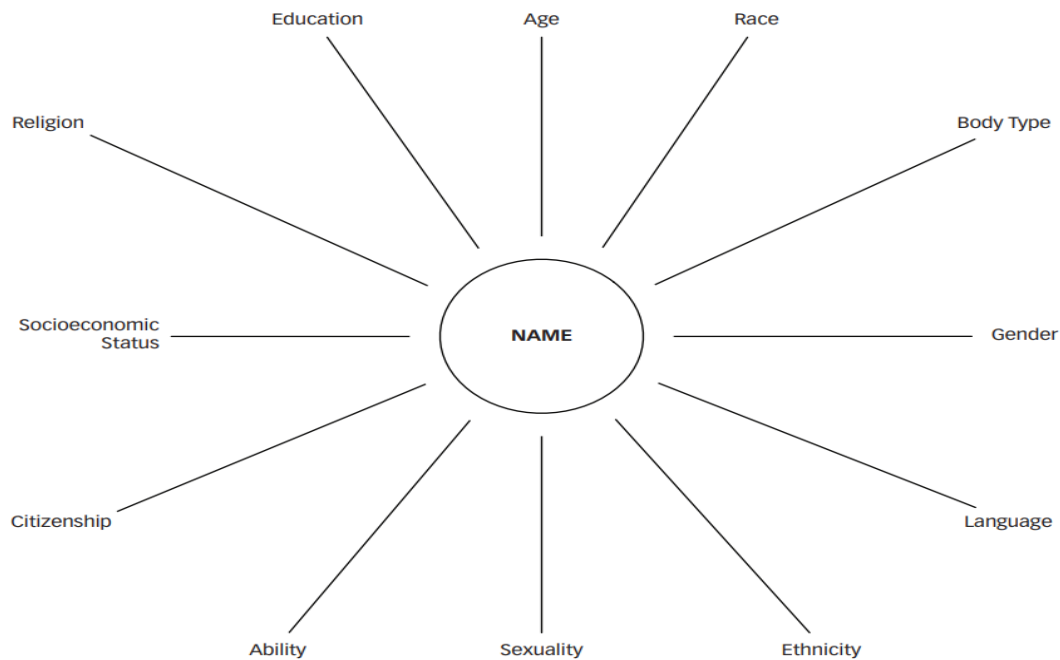
Figure 4*Revised Model Promoting a DEI Centered Environment*

As the population in the United States becomes more diverse and leading organizations move toward embracing cultures that promote DEI in their policies and practices (Wiggin & Watson-Vandiver, 2019), the recommendation is for Strive Academy to be a leader in the supplemental education arena by incorporating DEI practices into its culture, specifically those addressing strategies to counteract race related innuendos and stereotyping. For example, Kleinrock (2021) outlined a guide to developing an antibias and antiracist teaching curriculum comprising salient DEI topics for educators to consider in creating more inclusive spaces for students. The curriculum detailed the following steps that the organization's leadership can adapt and customize:

1. Create an Identity Map, unpacking the background knowledge and experiences salient to the student. The educator should consider creating their own map as an example for the student and assurance that the classroom is a safe space for self-expression. Figure 5 represents a template of an Identity Map that the educator can

adapt to help the students to build their own. Kleinrock (2021) offered that this concept helps educators know their students, enabling them to formulate a culturally responsive lesson plan, bringing in community cultural wealth relevant to their identities.

2. Create the space for students to share their stories and process through emotional and challenging experiences, especially those they face outside of Strive Academy. Kleinrock (2021) recommended that the educator consider different approaches to successfully navigate the process of creating and maintaining the students' social and emotional health.
3. Align antibias and antiracist topics with the curriculum and not as separate components. Kleinrock (2021) suggested that antibias and antiracist teachings become the lens through which the educators teach and not separate components, being cognizant of content perpetuating stereotyping and race related issues.
4. Build a culture of trust through honest and open communication that fosters vulnerability in educators and students. This approach may include assessing how the students are doing through check-ins (Kleinrock, 2021) and giving them space to share.
5. Discuss difficult topics relevant to social justice and the current context. Kleinrock (2021) underscored creating surveys or questionnaires to help assess topics that are difficult for students to discuss.
6. Engage parents, so they know what their children are learning and invite their participation and contribution in creating and sustaining a DEI-centered environment.

Figure 5*Kleinrock's (2021) Identity Map*

Implementing a DEI-centered program enables Strive Academy to provide the needed support for Black and Latinx students navigating environments that are not always inclusive. It will also open the door for the inclusion of students of other races who may reside in underserved communities, allowing them to be in an environment where academic excellence is the norm and not the exception for children in those communities. As more organizations embrace DEI initiatives, training organizations and materials continue to evolve, resulting in various approaches for consideration. For example, Kleinrock (2021) offered a multifaceted approach to a DEI curriculum design that STEM-based programs can incorporate, providing students with the learning and tools needed to thrive in their K–12 school environments and beyond.

Recommendation 2: Expand Access to Strive Academy's Programs by Establishing Formal Partnerships With Local Public and Charter Middle and High Schools

The findings emerging from the first and second research questions illuminated the attributes of Strive Academy's summer STEM program that position it as an exemplary supplemental educational program for K–12 students in underserved communities. Figure 3 captured these salient attributes, with Figure 4 representing the incorporation of a DEI-centered environment. The findings also revealed that majority of the participants attended K–12 schools outside of their immediate neighborhoods, including charter and private schools and public schools in higher-income communities. Research showed that when parents are unable to find quality K–12 schools and quality supplemental educational programs in their communities, they look outside for better educational resources (Afterschool Alliance, 2016). However, this is not a practical alternative for Black and Latinx parents in neighborhoods where the income equity gap is pronounced. While the participants attended various K–12 schools, their summers brought them to Strive Academy, located in and serving students in underserved communities.

Further analysis of the findings presents an opportunity for the Strive Academy to consider expanding its program to reach more students in these communities. Research supporting this recommendation includes Raia-Hawrylak et al.'s (2021) study positing evidence-based partnerships between K–12 schools and universities that create opportunities for collaboration with external consultants to support school leadership teams in improving and promoting changes in schools, a model that community-based organization, like Strive Academy, can employ. Additionally, Furco (2013) illustrated the positive impact of partnerships between community-based organizations and K–12 schools that focus first on learning and understanding the needs of the schools, to garner mutually beneficial outcomes for both parties. Thus, by

expanding its summer STEM program, Strive Academy will move toward leveling the education playing field, giving students living in underserved communities the supplemental educational resources needed to enhance traditional K–12 school learning.

As it expands access to its supplemental educational programs and moves toward achieving education equity for students in underserved communities, Strive Academy could seek to establish formal symbiotic partnerships with local K–12 schools. For example, Murry et al. (2021) outlined the benefits of partnerships between community organizations and K–12 schools, including access to community resources to offset the gaps in schools’ learning and support. Strive Academy would establish the partnerships through memoranda of understanding (MOUs) detailing the mutual benefits of the partnership between the organization and the respective K–12 schools. Strive Academy would provide an academically enriching environment with caring and supportive staff that includes credentialed teachers and college students as tutors, enabling students to thrive academically as they prepare for the next grade level. The K–12 schools would in turn share information about the summer STEM program and Strive Academy’s other afterschool programs with the parents and school staff, promoting the organization as a quality supplemental educational site. Furthermore, the MOUs, customized using boilerplate templates, will comprise:

1. Background information on the organization highlighting its history of success in underserved communities.
2. Terms and conditions to include, but not limited to, the scope of the services being offered, and the responsibilities of each party.

3. Duration of the agreement; for example, a two-to-four-year renewable agreement will enable enough time for the entities to build a working relationship and begin to realize the success of the partnership.
4. Point of contact for both the K–12 schools and the organization.
5. Any special provision, applicable to the K–12 schools and the organization.

Establishing these salient partnerships, via MOUs, with local K–12 schools, provides a formal transparent understanding of the commitment between Strive Academy and the respective K–12 schools to pursue equity in education for students in underserved communities. To this end, Strive Academy will contribute enabling more equitable access to quality supplemental educational programs for students in underserved communities.

Recommendation 3: Increase Awareness of Strive Academy’s Summer STEM Program Through a Strategic Public Marketing Campaign

The findings related to this current research, aligning with the second research question, affirms Strive Academy’s summer STEM program as an exemplary program that fosters a warm and welcoming environment with caring and supportive environment and where the participants consider a safe space. As past research showed, supplemental educational programs provide academic, social and emotional support for students during out of school hours when parents are typically unavailable (Hurd & Deutsch, 2017). Additionally, research highlighted that there is disproportionate access to quality supplemental educational programs in underserved communities, limiting Black and Latinx students realizing their full potential (Afterschool Alliance, 2016). The demand for quality programming and the lack of access to such resources in underserved communities, worsened by the ongoing COVID-19 pandemic, provide an

intersecting opportunity for Strive Academy to expand the its summer STEM program to reach a wider radius of its current service areas.

This recommendation proposes that Strive Academy's expand its summer STEM program through the implementation of a formal marketing campaign, ran over a three-year period, at minimum, and centered around promoting the benefits and successes of the summer STEM program, gleaned from the participants' interviews. Research supporting this recommendation encompasses Alves et al.'s (2016) study encapsulating the impact of internet and social media marketing on consumers' usage and influence in decision-making and perceptions. Yeik Koay et al. (2021) also highlighted the relationship existing between achieving brand equity and social media marketing, enabling organizations to reach a wider base of consumers. The organization should consider hiring a marketing firm or consultant to work alongside the leadership team to design and implement the marketing campaign as training program. This approach enables the organization to design a sustainable marketing campaign that would expand its current target population to a wider breadth of underserved communities. It would also create a culture in the organization where the leaders and staff are trained to become promoting agents of the summer STEM program, moving away from marketing being an isolated function administered by specific individuals.

The recommendation proposes that the leadership team, the key stakeholder, establishes a performance goal aligned with the organization's goal of expanding its summer STEM program to reach more students in underserved communities. Accordingly, the leadership team would outline the specificities of the marketing campaign goal including descriptions of tasks and timelines for task deliverables, making it a SMART (specific, measurable, attainable, realistic, and timely) goal (Lawlor & Hornyak, 2012). For example, Table 4 reflects a proposed SMART

goal for the organization and the leadership team, forming the premise for the marketing campaign.

Table 4

Organization and Stakeholder Proposed SMART Goals

Organizational Goal
By June 2025, the organization will expand its summer STEM program by 200%, to reach underserved families within a 20-mile driving radius of its location.
Stakeholder (leadership team) Performance Goal
By January 2023, the leadership team will implement a local marketing campaign to promote and expand awareness of the benefits and successes of the summer STEM program, targeting families of middle and high school students within a 20-mile radius of its location, thereby resulting in a 100% increase in student enrollment by June 2023.

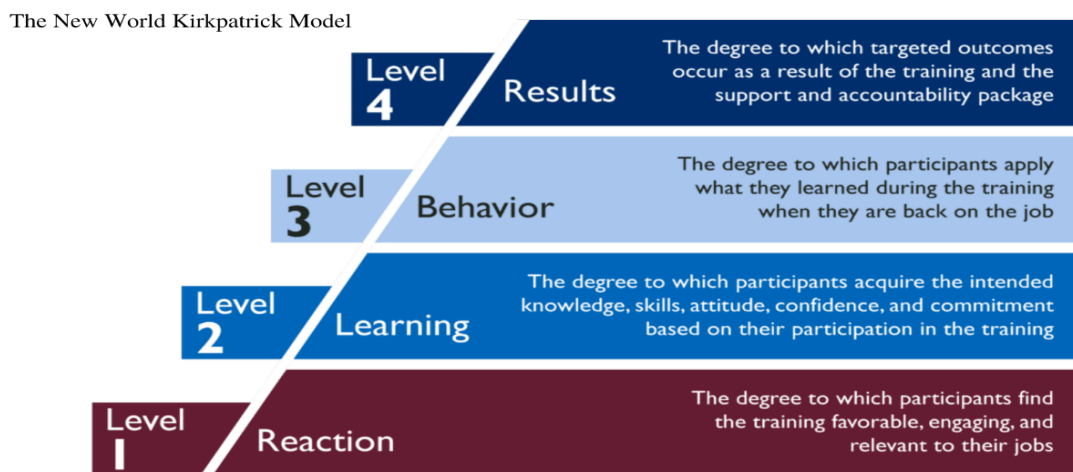
The leadership team is salient to the organization's goal attainment and includes individuals with many years of organizational management and classroom and educational leadership experiences who understand the widening achievement gap and disparities facing students in underserved communities. The marketing campaign, designed as an organization-wide training program, will involve training the leadership team and staff who will work with the marketing consultant to implement and evaluate the campaign through the key stages, ensuring goal alignment and accomplishment.

The recommendation for expanding the summer STEM program further proposes that the organization utilizes the New World Kirkpatrick Model (NWKM) to design an implementation and evaluation plan that will monitor the goals of the proposed marketing campaign to expand the summer STEM program. The NWKM is used globally as an integrated implementation and evaluation plan to improve training processes in organizations across various industries (Kirkpatrick & Kirkpatrick, 2016) and comprises a reverse order four-level systematic

framework used to design and evaluate the effectiveness of training programs that prioritizes Level 4, which focuses on the results, as the most salient aspect of the program. This unconventional approach to the training and evaluation plan starts with the end in the beginning, underscoring the importance of assessing the practicality of the organization's desired outcomes before implementing training programs. Accordingly, the organization would only pursue the marketing campaign upon assessment of its feasibility in meeting the goal of expanding the summer STEM program. Figure 6 represents the NWKM showing the four levels of evaluations that the leadership team would employ in monitoring the goals of the marketing campaign.

Figure 6

New World Kirkpatrick Model used in Designing and Monitoring the Marketing Campaign



When implemented according to design, the four interconnected levels of the NWKM result in the actualization of value to the organization and its stakeholders. Accordingly, Level 4, Results, represents the desired outcomes resulting from the training program and would align with the organization's mission and purpose. Level 3, Behavior, denotes the extent to which the employees integrate the learning gained from the training into their job. During this phase, behaviors critical to the organization's success and related processes and systems to accentuate

these behaviors are analyzed and incorporated. Level 2, known as Learning, indicates whether the leadership team and staff have acquired the “intended knowledge, skills, attitude, confidence and commitment” (Kirkpatrick & Kirkpatrick, 2016, p.10) after participating in the training program. Finally, Level 1, Reaction, measures the employees’ feedback to the training program to include its relevance, engagement, and satisfaction. Principally, the NWKM would simplify the design and implementation of the training program associated with the marketing campaign by focusing first on the results expected by the organization and working in reverse building the strategies to accomplish the organization’s goals. This approach allows for the assessment of the return on expectations (ROE) evaluated at different stages of the marketing campaign and training program, giving the leadership team the opportunity to revise both the training program and the marketing campaign to properly align with the organization’s goal achievement.

The training program’s alignment with the expected outcomes upon evaluation and the degree to which it will actualize value to the organization and the leadership team underscore the importance of employing NWKM (2016) for delivering the marketing campaign. This integrated implementation and evaluation plan would function as an accountability mechanism supporting the organization’s goal to reach more underserved communities as it seeks to expand its summer STEM program. During the planning phase, the organization would not only identify the expected outcomes but would also engage stakeholders, internal and external, regarding the return on expectation (ROE) for the summer STEM program. Achieving a high ROE is indicative of a value-added training program and that the stakeholders’ role in creating and implementing a successful training program is crucial to achieving the expected outcomes (McLinden & Trochim, 2007).

As represented in Table 4, the marketing campaign would be established over a three-year period, at minimum, with enough time to create consistent messaging for staff to communicate, materialize growth on social media platforms, increase website traffic, improve and expand brand recognition, and recruit and acclimate new staff. The campaign would comprise three phases, with the first focused on training the leadership team to ensure they have the necessary knowledge and skills to lead and monitor the campaign successfully. Training sessions could include interactive workshops and webinars that the leadership team will complete in the first two months of the campaign. Training and collaboration would continue throughout the campaign, aligning with the design of the NWKM implementation and evaluation plan for achievement of the organization's goal of increasing awareness of its summer STEM program.

At each level of the marketing campaign, the organization would identify important factors that contribute to improving ROE. First, Level 4 would measure the external and internal outcomes critical to keeping the marketing campaign on target to meet the goal of a successful expansion. Level 3 would outline behaviors critical to the campaign's success while promoting building relationships among internal and external stakeholders. Level 2 would establish the learning goals pivotal to implementing a marketing campaign. Finally, level 1 would capture the leadership team and staff's reaction to the training program focusing on engagement, relevance, and satisfaction. While Level 4 is undoubtedly the most important of all four levels, each level relies on factors and resources from the preceding level, creating an implementation and evaluation plan that successfully delivers the organization and stakeholder's interconnected goals. The recommendation to utilize the NWKM (2016) creates an accountability framework enabling STEM Academy to achieve its organizational goal of expanding the Summer STEM

program and its stakeholder's goal of a successful marketing campaign to promote the program's benefits and successes, ultimately, reaching a wider radius of underserved communities.

Recommendations for Future Research

The findings gleaned from this present research and those entailed in the review of literature support improving and expanding access to supplemental educational programs to reach more students, especially those in underserved communities. There are several considerations for further research into this salient area of study. First, future research could focus on expanding the study to include current students participating in Strive Academy's summer STEM program and its other afterschool programs to gather insight into how students are perceiving the impact of the programs as they actively navigate their K–12 school journey, especially during this COVID-19 era. Second, the research could be extended to understanding parents' perspectives on the impact of students' participation in Strive Academy's supplemental educational programs on their lives, personally and professionally. Third, future research could seek to explore K–12 schools or supplemental educational programs that are considered promising practices in creating an environment for students and staff that is diverse, equitable and inclusive while achieving academic success for its student body. Fourth, the analysis of data from the current study revealed information-rich data from the participants' interviews that could have resulted in a narrative study of one participant to obtain a deeper understanding of the meaning he or she made of their full lived experiences through childhood, K–12 journey and into their current context. Finally, future study could seek to perform a quantitative study of all the alumni of Strive Academy who culminated during the same period, 2015–2020, to garner their feedback on their participation in the summer STEM program, enabling the generalizability of the research findings.

Conclusion

This research study, premised on Bronfenbrenner's ecological model and critical race theory (CRT), examined the lived experiences of 13 alumni of Strive Academy's summer STEM program and explored how their experiences impacted their academic outcomes. Supplemental educational programs, like Strive Academy's summer STEM program, provide needed academic resources and support for K–12 students. However, as the literature review and current research showed, there is disproportionality in access to these programs for those living in underserved communities. The prevailing findings underscored Strive Academy's summer STEM program as an exemplary supplemental educational program that bridges the disparities and counteracts the deficit thinking mindset Black and Latinx students encounter as they traverse their K–12 academic journey. In addition, the participants' interviews revealed salient attributes of the summer STEM program, including a sense of belonging, caring and supportive staff, and a safe space, among others, giving the participants access to quality supplemental educational programs not traditionally available in underserved communities.

The recommendations outlined aim to improve and expand Strive Academy's summer STEM program, providing students in underserved communities with access to quality educational resources, and placing them on a trajectory toward closing the existing achievement and attainment gaps. As the COVID-19 pandemic moves into an endemic stage and parents in underserved communities search for quality and affordable supplemental educational programs, Strive Academy seeks to reach more students by expanding access to its summer STEM program. In addition, as Black and Latinx students in underserved communities navigate their interconnected ecological systems, they look to supplemental educational programs to remedy the deficiencies of their neighborhood K–12 schools. Finally, parents also look to these programs

to provide a safe, positive, and enriching environment with caring and supportive staff, where students can excel academically through their K–12 school years and into college.

Nelson Mandela’s (1990) famous quote, “education is the most powerful weapon that you can use to change the world.” aligns with Strive Academy’s pursuit of equity in education for students living in underserved communities. The quote profoundly speaks to the impact equal access to quality supplemental educational programs has on catalyzing the breaking down of systemic racial barriers and alleviating disparities that have historically plagued and limited the potential of Black and Latinx students. As I reflect on this research study and the participants’ experiences during their time at Strive Academy, I noted the parallelism between my K–12 journey from a low-income familial upbringing in a developing country to my current context as an advocate for education equity. The intersection of access to educational resources and meritocracy created the trajectory for my academic and career successes, not being hindered by the same systemic racial barriers as the participants encountered. Accordingly, without programs like Strive Academy’s summer STEM program, Black and Latinx students in underserved communities will fail to realize their full potential. Therefore, I believe that as a leader of Strive Academy, I am in a position to champion systemic changes to current thinking, educational policies, and practices that hinder access to quality supplemental educational resources for students living in underserved communities.

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Appendix A: Interview Protocols

Overview and Introduction

Thank you for taking the time to be interviewed as part of my research study regarding understanding the experiences of alumni of Strive Academy. As shared in my email to you, I am a student at the University of Southern California pursuing a doctorate in education with an emphasis in organizational change and Leadership. This interview will be about 60 minutes in length and recorded to capture your complete experience as a student. I will also take notes throughout and may ask follow-up questions to some of your responses for further clarity to ensure I capture your full experience correctly.

The information you share today will be kept confidential and privileged to you and me and used only to contribute to the improvement and expansion of programs at Strive Academy. The transcript will be available for your review, should you request it. All identifiable attributes and information unique to you will be scrubbed from the transcript and notes, including omitting your name from the Zoom video display. Please note that you may decline to answer any question or withdraw from the interview at any time. Do I have your permission to record the interview to have an audio file and transcript to review? Before we begin, do you have any questions for me?

Interview

There are 15 questions that I have prepared; however, I may ask additional follow-up inquiries for further clarity or expansion of your answers as I seek to capture your complete experience.

Interview Questions	Potential Probes	RQ Addressed	Key Concepts Addressed
1. How would you define success after graduation from high school?		1	Self-perception, self-efficacy
2. Tell me about the community in which you grew up?	<ul style="list-style-type: none"> ● What was your experience growing up in this community? ● What are your favorite memories about community? ● What are your least favorite memories about your community? 	3	Community cultural wealth, deficit thinking, systemic racial barriers
3. Walk me through your K–12 school journey as you best recall.	<ul style="list-style-type: none"> ● What grade schools did you attend? ● What was each of those school experiences like for you? 	1	Sense of belonging, self-perception, self-efficacy, collective efficacy
4. What was it like participating in the summer STEM program at Strive Academy?	<ul style="list-style-type: none"> ● What aspect of the program, if any, did you like the most? ● What did you find most beneficial to you? ● What aspect of the program did you like the least? 	1	Sense of belonging, self-perception, self-efficacy, collective efficacy
5. What had the most impact on your academic goals? School, home, or Strive Academy?	<ul style="list-style-type: none"> ● Tell me more about this impact. ● What impact, if any, did Strive Academy 	1	Sense of belonging, self-perception, self-efficacy, collective efficacy

Interview Questions	Potential Probes	RQ Addressed	Key Concepts Addressed
	have on your academic outcomes?		
6. Let's talk about life at home. Can you share what your home life was like during your K–12 years?	<ul style="list-style-type: none"> • What aspect of your home life had the most impact on you? • What had the least impact on you? 	1	Sense of belonging
7. What were other factors in your life, community, family that impacted your academic outcomes?	<ul style="list-style-type: none"> • In what way did they impact you? <ul style="list-style-type: none"> • Was there any experience that had a positive or negative impact on you? If so, can you share? 	1, 2	Sense of belonging, Community cultural wealth
8. What role, if any, did Strive Academy play in your college preparation and acceptance journey?	<ul style="list-style-type: none"> • If Strive Academy did not play a role, what helped you to navigate the planning and preparation process? • What was the most challenging part of the college preparation process? <ul style="list-style-type: none"> • How did you overcome the challenge/s? 	1, 2	Self-perception, self-efficacy, collective Efficacy Community cultural wealth
9. Tell me about your experience with the staff such as the directors and teachers at Strive Academy.	<ul style="list-style-type: none"> • How did they help with your academic journey? • Can you talk about a specific person from Strive Academy who was the most 	1, 2	Self-perception, collective Efficacy, sense of belonging

Interview Questions	Potential Probes	RQ Addressed	Key Concepts Addressed
	influential in your academic journey?		
10. When did you first become aware of your racial identity?	<ul style="list-style-type: none"> • What are your thoughts about your race and how others viewed you? 	3	Self-perception, deficit thinking
11. Tell me about your friends, what are their racial identities?	<ul style="list-style-type: none"> • How were these friendships formed and maintained? • If you don't have friends from other racial groups, can you share the reason why? 	3	Self-perception, systemic racial barriers, deficit thinking
12. As Black/Latinx students, did you feel your race impacted how you saw yourself growing up?	<ul style="list-style-type: none"> • If so, in what way did it impact you? • If not, what would you consider the reason why your race did not influence how you saw yourself? 	3	Self-perception, systemic racial barriers, deficit thinking
13. Reflecting on your K–12 school years, do you recall your race being a factor in how others (peers or adults) treated you, good or bad?	<ul style="list-style-type: none"> • How does this experience impact your feelings about racism in America today? 	3	Systemic racial barriers, deficit thinking
14. Is there anything else that could have been done to make your experience at Strive Academy one that could achieve greater results for you?		1, 2	Self-efficacy, self-perception, sense of belonging, collective efficacy

Interview Questions	Potential Probes	RQ Addressed	Key Concepts Addressed
15. Is there anything else you would like to share with me about your time at Strive Academy or about your overall journey to where you are today?		1, 2, 3	

Thank you

Thank you for your time today. It was such a pleasure meeting and interviewing you. Your contribution to my research study is greatly appreciated. Should I have follow-up questions or need clarity on some of your responses, may I contact you? In the meantime, should you think of any additional details you would like to share, please email or call me using the contact information I have provided in the letter. Have a great day!

Appendix B: Email to Participants

Dear Participant,

Thank you for electing to be participate in this important research study on understanding the experiences of students who attended Strive Academy's supplemental educational program. My name is Simone Dilisser, the Administrator at Strive Academy. I am also a doctoral student at the University of Southern California. You are one of 12–15 participants who will share your experience about your K–12 journey and the impact of Strive Academy on your academic outcomes. Your contribution to this research study will enable the improvement and expansion of programs at Strive Academy. Below is a link for you to select the day/time combination for the (1) hour interview that will be held via Zoom video platform. Alternatively, you can email, call or text me using the contact information below to schedule the interview. Should you have any questions about the enclosed information, feel free to contact me.

[Link to schedule interview]

Thank you,

Simone E. Dilisser

Doctoral Student

Email: dilisser@usc.edu

Phone: (213) 446-1158

University of Southern California

Rossier School of Education

Doctor of Education in Organizational Change and Leadership

Appendix C: Informed Consent

INFORMED CONSENT FOR RESEARCH

University of Southern California

Rossier School of Education

3470 Trousdale Parkway, Los Angeles, CA 90089

Access to Quality Supplemental Educational Programs for K–12 Students in Underserved Communities

You are invited to take part in a research study conducted by Simone Dilisser under the supervision of Ekaterina Moore, Ph.D. Please take as much time as you need to read the consent form. If you find any of the language difficult to understand, please ask questions. If you decide to participate, you will be asked to sign this form. A copy of the signed form will be provided to you for your records.

PURPOSE OF THE STUDY

The purpose of this study is to understand the experiences of students from underserved communities who participated in Strive Academy's supplemental educational programs and to examine how their experiences influenced their academic outcomes. You are invited as a participant because you are a past student of the organization, who attended afterschool or summer programs during 2015–2020, lived in an underserved community during your K–12 school years and are either now in college or a working professional. You are one 12–15 participants who will take part in the study. This research is NOT being funded.

STUDY PROCEDURES

If you decide to take part, you will participate in the following:

- You will be asked to participate in a one-hour face-to-face interview via Zoom.
- You will be asked to allow recording of the interview and note-taking to enable the complete recapturing of the details shared.

CONFIDENTIALITY

We will keep your records for this study confidential as far as permitted by law. However, if we are required to do so by law, we will disclose confidential information about you. Efforts will be made to limit the use and disclosure of your personal information, including research study, to people who are required to review this information. We may publish the information from this study in journals or present it at meetings. If we do, we will not use your name. The University of Southern California's Institutional Review Board (IRB) and Human Subject's Protections Program (HSPP) may review your records.

Your responses, which are also called “data,” will be stored electronically on a password-protected Google Drive and kept for three years to support the study’s findings and recommendation, should access needed. All identifiable attributes will be removed. Subsequently, all records will be destroyed. Your data collected as part of this research will not be used or distributed for future research studies, even if all your identifiers are removed.

ALTERNATIVES

There may be NO alternative(s) to participating in this study.

PAYMENTS / COMPENSATION

You will not be compensated for your participation in this research.

POTENTIAL RISKS AND DISCOMFORTS

There are no anticipated risks or discomforts from participating in this study.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

You may not receive any direct benefit from taking part in this study. However, your participation in this study may help improve and expand access to supplemental educational programs.

VOLUNTARY PARTICIPATION

It is your choice whether to participate. If you decide not to participate, or choose to end your participation in this study, you will not be penalized or lose any benefits that you are otherwise entitled to.

WITHDRAWAL FROM STUDY

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study.

CONTACT INFORMATION

If you have questions or concerns about the research, contact:

Simone E. Dilisser
(213) 446-1158
dilisser@usc.edu

Ekaterina Moore, Ph.D.
(562) 257-8945
ekaterim@usc.edu

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This research has been reviewed by the USC Institutional Review Board (IRB). The IRB is a research review board that reviews and monitors research studies to protect the rights and welfare of research participants. Contact the IRB if you have questions about your rights as a research participant or you have complaints about the research. You may contact the IRB at (323) 442-0114 or by email at irb@usc.edu.