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Addressing The Black-White AP Participation Gap: An Improvement Science Project

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ADDRESSING THE BLACK-WHITE AP PARTICIPATION GAP: AN
IMPROVEMENT SCIENCE PROJECT

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A Dissertation
Presented to
the Graduate School of
Clemson University

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Doctor of Education
Educational and Organizational Leadership Development Department

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by
Gales Webb Scroggs IV
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Accepted by:
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ABSTRACT

Advanced Placement (AP) courses have become an essential preparation for college, and the benefits of AP participation for students are plentiful. AP courses allow students to earn higher grade point averages in high school, stand out in the college admissions process, and increase their likelihood of graduating college with a degree in four years. The benefits experienced by Black AP students may be even more significant. However, Black students have lagged behind their White peers in AP enrollment since the inception of the AP program. This study examined the influence of targeted, counselor-led academic advisement on the AP enrollment of rising Black 10th-grade students at three high schools in a large suburban school district in South Carolina. I aimed to increase enrollment of Black 10th-grade students from 2022 levels by 5.8% in 2025 by applying an intervention of consistent advisement protocols encouraging AP enrollment. Using a mixed methods approach, I collected quantitative data on pre- and post-treatment AP enrollment trends disaggregated by ethnicity and qualitative data collected through focus groups with rising Black 10th-grade students who participated in the advisement. The counselor-led advisement protocols increased Black AP enrollment but did not reduce the longstanding Black-White AP participation gap. Additionally, my study revealed that the decision to take an AP course was not entirely academic. Black AP students contend with issues of racial connectedness, isolation, and otheredness, which can affect their desire to take AP courses. These findings reflect a need for schools and districts to continue to promote Black AP participation through counselor-led

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academic advisement and address the social dynamics within the school environment that

may deter Black AP enrollment.

DEDICATION

For Mom and Dad, my two heroes. Thank you for always supporting me and aiming me in the right direction. Psalm 127: 4

For Quinn and Boone, my champ and my sweet prince. Follow the Lord with courage and boldness. May you always swing away, no matter the count. Joshua 1:9

For Caryn, best of wives and best of women. You are the inspiration for every good deed and accomplishment I have ever achieved. Thank you for making me a better man. Proverbs 31: 26-29

I love you all.

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Thank you to my tribe: Ellen Borland and Will Dyer. It is a special gift when you find your people. Your friendship has made this process fly by. Thank you for all the help, encouragement, and laughs. I am proud to call you friends.

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CHAPTER ONE

INTRODUCTION

Advanced Placement (AP) courses are widely considered essential college preparation (Hallett & Venegas, 2011). The College Board promotes AP courses using the selling points that AP students can increase their high school grade point average, stand out in the college application process, accelerate to more advanced college courses, and experience greater degrees of success in college (College Board, n.d.). Over the last decade, enrollment in AP classes nationwide has increased by more than 400,000 students, with approximately one-third of students in the class of 2021 taking at least one AP exam before graduation (College Board, 2021). "With two out of every three high schools offering at least one Advanced Placement course, the AP program is perceived as a ubiquitous form of rigorous college-preparatory coursework" (Rodriguez & McGuire, 2019, p. 642). Likewise, the number of students receiving a passing score of three or higher on an AP exam has risen by more than five percent over the last ten years (College Board, 2021). Even with recent obstacles, such as the COVID-19 pandemic and the trend among some elite universities to lessen their emphasis on AP courses for admission, the overall appeal of AP courses remains high (College Board, 2021). Despite these gains, a persistent and notable gap remains in the percentage of Black students enrolling in AP courses compared to their White peers (Klopfenstein, 2004b). The problem is especially concerning, considering "Of all racial groups, Black students are the most severely underrepresented among AP examinees" (Whiting & Ford, 2009, p.23). The national growth of AP enrollment included Black students, yet the Black-White participation gap remains and highlights a more significant issue of equitable college preparation for Black students.

History of the Black-White AP Participation Gap

AP courses emerged as a Cold War-era educational reform established to track and promote high-achieving, college-bound students (Kolluri, 2018; Schneider, 2009). Issues of inequity have plagued the AP program from the beginning (Schneider, 2009). AP courses were offered almost exclusively in affluent, suburban settings dominated by White students, making AP courses virtually inaccessible to Black students (Schneider, 2009). In the 70 years since the launch of AP courses—in 1952—a concerning trend has remained constant: Black students significantly lag behind their White counterparts in AP participation (Klopfenstein, 2004b). Over the last 30 years, increased local, state, and federal funding led to a massive expansion of the AP program nationwide (Klopfenstein, 2004b). However, as Klopfenstein (2004b) reported, despite this expansion, Black students remained "grossly underrepresented in the AP courses that are offered" (p. 10).

Potential Consequences for Non-participation in AP Courses

While AP courses were initially designed as a differentiated pathway of academic rigor, thanks to the ubiquity of the program in the United States, it has inadvertently assumed a role as an admissions gatekeeper for post-secondary institutions (Hallett & Venegas, 2011). In their comparative study of access and quality of AP programs among poor urban high schools, Hallett and Venegas (2011) noted that the AP expansion of the 1990s and early 2000s laid the groundwork for "increasing reliance on AP course participation as a measure of college readiness" (p. 470). Bearing in mind that AP participation has been linked to a host of benefits for high school students—including higher academic performance, reduced dropout rates, and increased on-time graduation—it becomes clear that barriers to AP participation serve as barriers to essential college preparation (Rodriguez & McGuire, 2019). Perhaps the most troubling aspect

of the growing importance of AP courses is the benefits not being afforded to Black students. Davis et al. (2014) observed:

> Although participation and success for all students, including African Americans, have increased over the last decade, no state with large numbers of African Americans has successfully closed the achievement and equity gaps (College Board, 2011a). African American students remain underrepresented in AP courses, and no other group experiences such a glaring equity gap (p. 33).

With AP courses linked to success in high school, college admissions, and college, it is imperative to increase participation among Black students.

The Problem of Practice in Brief

My problem of practice is that there is a persistent Black-White AP participation gap in the Southern Suburban School District (SSSD), which has deleterious effects on Black college-bound students. My study aimed to increase the percentage of Black 10th grade students enrolling in at least one AP course by a minimum of 5.8% from 2021-2022 levels by the end of the 2024-2025 school year. My hope is that increases in Black AP enrollment resulting from interventions in this study will be transferable to other districts with similar struggles.

In their study of disadvantages experienced by Black students according to the theory of categorical inequality, Shores et al. (2020) list three primary explanations for Black-White gaps, such as AP participation: systemic factors, discretionary factors, and a combination of the two. Systemic factors exist outside the direct influence of schools, such as a student's socio-economic status. Discretionary factors, however, are factors over which schools and policymakers have the most direct influence. Accordingly, discretionary factors may be vulnerable to racial bias and discrimination (Shores et al., 2020). My problem of practice reflects the third category (a

combination of systemic and discretionary factors) because the problem is affected by factors both within and outside the locus of school control (Shores et al., 2020). In response, I planned to actualize the driver of improving academic counseling to influence the discretionary factor of academic advisement.

In the following sections, I will discuss the historical roots of inequity tied to the establishment and widespread growth of the AP program and how the historical underpinnings of bias undermined efforts to close the participation gap today (Klopfenstein, 2004b; Schneider, 2009). Next, I will discuss how researchers have attempted to diagnose and address the participation gap within the spatial context of geography and associated school characteristics and socio-economic factors (Bittman et al., 2017; Conger et al., 2009; Klopfenstein, 2004a; Xu et al., 2021). Then, I will examine how school policies—such as scheduling and tracking—may exacerbate the problem by restricting access to AP courses and creating a social atmosphere in AP courses devoid of a sense of belonging for minority participants (Kerr, 2014; Rodriguez & McGuire, 2019; Shores et al., 2020; Taliaferro & DeCuir-Gunby, 2008; Xu et al., 2021). Finally, I will explore the potential school counselors possess to empower underrepresented students to pursue AP courses (Davis et al., 2014; Kerr, 2014; Ohrt et al., 2009; Taliaferro & DeCuir-Gunby, 2008; Young, 2016).

<div align="center">RESEARCH SITE</div>

Challenges at the Micro Level

My study examines the participation gap between Black and White students enrolling in AP courses in the SSSD. The vast majority of SSSD graduates go on to attend a two- or four-year college after high school (South Carolina Department of Education [SC DOE], 2021). In 2021, 82.8% of SSSD graduates enrolled in 2-year or 4-year college after graduation (SC DOE, 2021). With so many students attending colleges after high school, the SSSD places a significant

emphasis on AP courses as a means of developing college readiness, but the SSSD still contends with a racial participation gap that is reflective of the larger national trend ([SSSD], 2021).

In 2022, Black students comprised 11.62% of the high school enrollment in the SSSD but only 4.34% of the participants in AP courses. White students comprised 68.02% of the SSSD high school enrollment, but 76.83% of the students enrolled in AP coursework (SC DOE, 2019-2022). The percentage of Black students enrolled in AP courses in the SSSD was nearly one-third of the percentage of Black students attending high schools throughout the district. The percentage of White students enrolled in AP courses was more significant than that of their representative population throughout the district. This troubling gap remains just as stark when examined at the school level. In 2022, the SSSD's largest high school—First Town High School (FTHS)—had just 18 Black students enrolled in AP classes out of a total school enrollment of 1,967 students (SC DOE, 2019-2022). A concerning trend emerged when just 3.55% of the students enrolled in the school's most rigorous college preparatory pathway—AP courses—were Black despite making up a greater percentage of the total school population. The SSSD has stated that ensuring student equity is one of its chief priorities for school improvement; therefore, addressing the Black-White AP participation gap remains vital to achieving this goal and ensuring college preparation for all learners ([SSSD], 2021).

Local Context

The SSSD follows the more significant national trend, where Black students participate in AP coursework at a fraction of the percentage of their representative population (Klopfenstein, 2004b). The SSSD has three high schools: First Town High School, Old Trail High School, and Stoney Creek High School. Each high school has a population of over 1,400 students, with the largest—FTHS—currently serving more than 2,000 students (Schoolzilla, 2021-2022). In the

2021-2022 school year, Black students at FTHS made up approximately 9.76% of the total

school enrollment, 192 students out of a school total of 1,967 students (see Table 1). However,

out of the 507 students enrolled in an AP course, only 18 were Black (SC DOE, 2019-2022).

Black students attending FTHS comprised 9.76% of the total school enrollment but only 3.55%

of the school's AP enrollment. Of the three high schools in the SSSD, OTHS had the largest

population of Black students. Black students at OTHS made up 15.25% of the total school

enrollment, 269 students out of a school total of 1,763 students. Only 22 of the 416 students

enrolled in an AP course at OTHS were Black. In a strikingly similar fashion to FTHS, the

percentage of Black students taking an AP course was a fraction—roughly one-third in both

cases—of the percentage representing the enrollment of Black students. SCHS also displayed

this trend of underrepresentation. Black students at SCHS made up 9.69% of the school, but only

4.38% of the students enrolled in an AP course. From a different perspective, Black students

comprised 4.34% of the district AP enrollment despite comprising 11.62% of the total high

school enrollment, demonstrating that the Black-White AP participation gap was present and just

as dramatic when viewed at the district level (SC DOE, 2019-2022).

  While not a novel problem, these data highlight the considerable inequity of SSSD's AP

participation rates. Leaders within the SSSD identified equity as an improvement goal in their

most recent strategic improvement plan ([SSSD], 2021). Considering this priority, the SSSD

must address its AP enrollment gap to ensure equitable opportunities for all learners. While each

district has its unique circumstances, I am hopeful that insight revealed by my research in the

SSSD may have some transferable benefits for other schools and districts attempting to narrow

their gaps.

Table 1

2021-2022 Southern Suburban School District AP Enrollments by School

School	Ethnicity	Number of students enrolled in 1 or more AP courses by ethnicity	Percent of total AP enrollees	Total number of students by ethnicity	Percent of school by ethnicity
First Town High School	Asian	44	8.68%	98	4.98%
	Black	18	3.55%	192	9.76%
	Hispanic	27	5.33%	142	7.22%
	Other	1	0.20%	2	0.10%
	White	406	80.07%	1,457	74.07%
	2 or More	11	2.17%	76	3.86%
FTHS Totals		507	100%	1,967	99.99%
Old Trail High School	Asian	58	13.94%	118	6.69%
	Black	22	5.29%	269	15.25%
	Hispanic	25	6.01%	260	14.74%
	Other	3	0.72%	8	0.45%
	White	294	70.67%	1,007	57.11%
	2 or More	14	3.37%	101	5.73%
OTHS Totals		416	100%	1,763	99.97%
Stoney Creek High School	Asian	20	6.25%	47	3.32%
	Black	14	4.38%	137	9.69%
	Hispanic	18	5.63%	112	7.92%
	Other	1	0.31%	6	0.42%
	White	255	79.68%	1,035	73.19%
	2 or More	12	3.75%	77	5.45%
SCHS Totals		320	100%	1,414	99.99%

Note. This table displays the underrepresentation of Black students enrolled in one or more AP courses compared to their representative population throughout the SSSD.

Site Selection

The SSSD is the site of my improvement science study. I selected this site for two primary reasons: the ease of access to participants and my familiarity with the historical AP participation gap present in the district. The SSSD is a large suburban school district in South Carolina, located just outside a major metropolitan area. Due to suburban sprawl from the adjacent metropolitan area, the SSSD has grown from a small rural town to serve more than

18,000 students in prekindergarten through the 12th grade (Schoolzilla, 2021-2022).

During the 2021-2022 school year, Black students made up 11.62% of the total high school population in the SSSD but only accounted for 4.34% of the students participating in AP courses (SC DOE, 2019-2022). By comparison, White students comprised approximately 68.02% of the total high school enrollment but accounted for 76.83% of the students participating in AP courses (SC DOE, 2019-2022). The inequality between the percentage of AP participation rate by racial subgroups as compared with the percentage of total enrollment by racial subgroups reflects a concerning AP participation gap that is also reflective of more significant national trends (Klopfenstein, 2004b; Taliaferro & DeCuir-Gunby, 2008; Xu et al., 2021).

Positionality and Power

I currently serve as a district-level leader in the SSSD. In this role, I oversee the academic performance of the three high schools in the SSSD, which will be the focus of my study. One of the metrics by which the SSSD measures academic success is college readiness ([SSSD], 2021). As I established earlier, AP courses are widely held as essential college preparation (Rodriguez & McGuire, 2019). Therefore, an important responsibility of my position is to connect students with AP courses that will prepare them for college. Another facet of my job is overseeing the high school counselors in the SSSD. Each year, school counselors in the SSSD conduct individualized academic advisement for each high school student as part of their annual IGP conferences. Building off of the counselor-centric intervention work of Crumb et al. (2021), Davis et al. (2014), and Ohrt et al. (2009), I worked with school counselors to leverage their influence as academic advisers to share the benefits of AP courses for college preparation and map out an academic schedule that includes an AP course for students demonstrating promise for

success in AP courses (Rodriguez & McGuire, 2019). My ultimate aim was to provide Black students in the SSSD with more equitable college preparation through increased enrollment in AP courses.

While my position allowed me broad access to the three high schools of the SSSD, I was intentional to be mindful of the influence of my power and positionality. As Perry et al. (2020) stated, "Power and privilege can distort a researcher's ability to understand the problem, collect useful data, analyze measures productively, and generate useful findings" (p. 114). This means I must consider my approach and implement safeguards to ensure participants are well-informed and do not feel coerced into participation. As part of this intentional approach, I negotiated access to school counselors, students, and parents of SSSD through the district's respective gatekeepers: the superintendent and the high school principals. I assured them that my study aimed to encourage AP participation as a vital college preparation among Black students in the SSSD.

Moreover, I provided the principal and superintendent with institutional review board approval documentation as evidence of protection for participants against "physical, psychological, social, economic, or legal harm" (Creswell & Creswell, 2018, p. 91). In addition, I conducted empathy interviews with the counselors of SSSD, who applied the treatment as part of their yearly academic advising, as a means of establishing a common goal. I used this opportunity to assess their understanding of the AP participation gap, potential causes, and approaches to academic advisement they feel would entice greater AP enrollment among Black students. I used this feedback to tailor my focus group questions. I wanted to establish trust, rapport, and transparency by including their voice in the design.

Considering my research focuses heavily on issues of race, I find it necessary to note my

identity as a White, cisgender, neurotypical, non-disabled male. Not only does my Whiteness affect the lens through which I see the world, including this study, but it also positions me as an outsider to the Black participants in this study. The outsider status established by my race may have made it difficult for participants to open up entirely during focus group sessions or possibly to trust the intentions of my research. I attempted to offset the challenges inherent to my status as an outsider through honesty and transparency about my motivations. Equity work means directly combatting the inequities in our schools, keeping students from realizing their full potential and perpetuating disadvantages (Perry et al., 2020).

Further, I explained that "empathy does not mean feeling sorry for communities, students, or families and stepping in as a savior. It means being an activist leader, tearing down the systems that foster oppression and inequity and replacing them with respect and inclusiveness" (Perry et al., 2020, p. 115). To this end, I described my fervent desire to combat the challenges Black students face in order to improve the college preparation of all students in my sphere of influence.

By examining and deconstructing the barriers that deter Black students in the SSSD from enrolling in AP courses at rates reflective of their representative percentage of the student population, I added to the body of research exploring the Black-White AP participation gap. Throughout the AP journey of the SSSD, the number of course offerings and student participation expanded in recent decades; however, the ever-present racial participation gap remained (Klopfenstein, 2014b). In this regard, the SSSD served as a microcosm of the larger national Black-White AP gap. This made the SSSD an ideal site for addressing my problem of practice: the Black-White AP participation gap that impedes Black students from accessing AP courses as vital preparation for college.

RESEARCH RATIONALE

Literature Review

Black students are underrepresented in AP courses. This longstanding issue afflicts students at both the state and national levels (Davis et al., 2014). Black students are half as likely as their White counterparts to enroll in AP courses (Shores et al., 2020). This is of particular concern because of the opportunity cost, the potential value lost due to non-participation. AP courses serve as vital preparation for college. AP students experience greater degrees of success in college, including higher academic performance, reduced dropout rates, and better on-time graduation rates relative to their peers that did not take an AP course in high school (Rodriguez & McGuire, 2019). The benefits may be even more significant among Black students. Researchers found that "A U.S. Department of Education study concluded that African American, Latino, and low-income students are three times more likely to earn a bachelor's degree if they even attempt an AP class in high school" (Davis et al., 2014, p. 32). With so much to gain from AP participation and such disproportionately low participation rates among Black students, schools must examine the root causes of this problem and actively pursue solutions. In the following sections, I will examine the relevant literature related to this problem of practice across four central themes: history of the enrollment equity gap; geography of access; tracking, silos, and segregation; and counseling as a change agent.

History of the Enrollment Equity Gap

To understand how Black students became underrepresented in AP courses, one must examine the origins of the AP program. The first iteration of AP courses dates back to 1952, two years before court-ordered integration with the landmark Supreme Court ruling in Brown v. Board of Education (Brown v. Board of Education, 1954; Schneider, 2009). With a history

predating widespread integration and emergence in White-dominated suburbia, Black students were left behind in the AP race from the very beginning (Klopfenstein, 2004b).

AP courses emerged as a byproduct of Cold War competition to secure political and scientific dominance. To that end, educational reformers of the 1950s began focusing on developing and preparing gifted and talented students (Kolluri, 2018; Schneider, 2009). Reformers advocated "challenging talented students, moving them to and through college as swiftly and as effectively as possible, and then on to graduate school or the workplace (Schneider, 2009, p. 815). In some cases, reformers viewed poor-quality teachers as a barrier to the rapid educational ascent of the "best and brightest" that must be worked around. Their solution was to bypass the classroom teacher and bring college directly to public schools. The movement was focused on making college courses accessible to the academic elite in high school, seemingly ignoring important considerations of race, gender, and poverty (Kolluri, 2018; Schneider, 2009).

Over the next three decades, AP courses steadily grew in popularity and became entrenched in schooling as a means to prove oneself ready for elite post-secondary education (Schneider, 2009). Despite the large-scale national expansion of the program, which did increase the overall number of minority participants, the enrollment of Black students perpetually lagged behind the enrollment of White students (Klopfenstein, 2004b). Even into the 1980s, the children of White, highly-educated parents attending schools with small minority populations dominated enrollment in AP courses (Schneider, 2009). State and federal funding of AP programs in the 1990s and 2000s spurred another exponential program expansion throughout the nation (Klopfenstein, 2004b). However, the disparity in racial participation remained as well (Kolluri, 2018). In an empirical study of AP participation in Texas, Klopfenstein (2004b) found that

"although schools serving Black and Hispanic students offer AP courses comparable to White schools, Black and Hispanic students enroll in AP at just half the rate of White students" (p. 8). This disparity continues today. Inequitable participation rates of Black students remain, despite recent decades being "defined by a push to broaden access" (Bauer-Wolf, 2022, para. 15).

Tracking AP participation by ethnicity became more complex in 2021 when College Board—the non-profit organization behind AP courses—stopped publishing AP participation and scores sorted by race. Bauer-Wolf (2022) reported that without explanation College Board stopped making data disaggregated by student race available on its website and removed it from its archives. College Board's actions beg the question: Why? One might assume that a lack of transparency in sharing this information reflects a desire to hide the gap from public consciousness, hiding the subsequent consequences of non-participation in AP courses for Black students along with it. While beyond the parameters of my study, this conflict illustrates the intersectionality of race and college accessibility and warrants further exploration.

The history of AP courses shows a persistent Black-White participation gap spanning from the program's inception to the present day (Schneider, 2009). State and federal funding expanded the reach of AP courses from serving a small suburban elite to a near-ubiquitous presence today, serving millions of American students each year, but the problem of inequitable participation lingers (Bauer-Wolf, 2022; Klopfenstein, 2004b; Kolluri, 2018). With AP coursework assuming an informal gatekeeper role for college admissions and as a predictor of college success, the Black-White AP participation gap warrants further examination (Hallett & Venegas, 2011).

Geography of Access

Even with millions of students taking AP courses nationwide today, issues of rurality,

poverty, school size, and ethnic composition impact student access to AP programs (Conger et al., 2009). The spatial location of a school and its associated geographic context can limit student access to AP courses. Regional limitations were especially true in the early days of the AP program when courses were primarily restricted to select suburban pockets (Schneider, 2009). A recent study of White-Black and White-Hispanic participation gaps in AP and Dual Credit courses by Xu et al. (2021) found that AP programs are more prevalent on the coastal exterior of the United States than in states with higher participation in Dual Enrollment programs, which are more prevalent in the middle of the county.

The geographic setting, along a continuum of rural to urban, is also interrelated with AP opportunity. Researchers document that schools "that are small, in rural areas, and that serve low-income, minority students are less likely to offer AP courses than other schools" (Conger et al., 2009, p. 558). By this rationale, factors such as rurality and low socio-economic status are hallmarks of academic isolation which may limit student access to AP courses. Nonetheless, school factors can also positively affect AP enrollment. Klopfenstein's (2004a) study of AP racial gaps in Texas high schools found that small, urban schools with a robust offering of AP courses and highly trained teachers caused students of all races to take more AP classes.

Further, Klopfenstein (2004a) found that the specialization of magnet schools increased White and Hispanic AP participation. However, the unintentional segregation caused by the specialization of magnet schools deterred Black students from taking AP classes (Conger et al., 2009). The findings of Klopfenstein (2004a) are significant because they suggest that reformers may increase the number of Black students enrolling in AP courses by eliminating magnet programs, adding course offerings, and providing additional training to teachers. Such observations could influence school design and funding models to encourage more diverse

participation in AP courses. These studies show that while students have little or no control over the schools they attend, the setting and characteristics of these schools may influence AP participation.

The state in which a school resides also determines a great deal of the financial support for AP programs and the policies to which they must adhere. A $97 fee is associated with AP tests in the United States, which students must take and pass to be awarded college credit for an AP course (College Board, 2023a.). "In the 1990s, the federal government began subsidizing AP exam fees and contributed 25 million dollars to expand the program into schools with high concentrations of low-income students" (Kolluri, 2018, p. 672). Additionally, some states subsidize the AP exam fee to promote greater participation (Klopfenstein, 2004a). The degree to which a state financially supports its students may influence enrollment, especially among pupils in poverty (Xu et al., 2021). In a correlation study examining the intersectionality of race and poverty on AP enrollment and passage rates in Florida high schools, Bittman et al. (2017) found that schools with more significant numbers of less affluent students placed less emphasis on AP participation than schools with smaller numbers of low socio-economic status students. Since 2016, 29 states have offered waivers or subsidized AP exam fees for students with financial needs (Xu et al., 2021). Perhaps counterintuitively, "states with stronger accountability measures for access and student outcomes have larger White-minority gaps for AP and DE [Dual Enrollment] compared with states with weak accountability measures" (Xu et al., 2021, p.980). The significance of this imbalance is that state-level influence intended to increase enrollment and student performance may be widening the gap.

Examining a school's location contextualizes factors that must be acknowledged and accounted for when planning interventions to increase the AP participation of Black students.

State and regional variation affect matters of funding and policy. Community context will help researchers and reformers account for racial demographics, income, and priorities (Xu et al., 2021). Problems of practice do not occur within a vacuum. Therefore, interventions must account for all the nuances of context. The fact that the SSSD is a large, suburban district in a state that is situated along the coastal exterior of the country affects the prominence of AP courses. Likewise, the financial support provided by the state to cover the cost of AP exams and the district to cover the cost of AP certification for instructors no doubt affects the appeal of AP courses in the SSSD. The geospatial context of schools is interconnected with access to AP courses. My research attempts to acknowledge the influence of the setting and subsequent demographic makeup of the school impacts AP enrollment.

Tracking, Silos, and Segregation

Black students are not blind to the lack of diversity in AP courses. They are reminded of the demographics of their classrooms each time they look around the room. Black students notice when they are overrepresented in lower tracks and underrepresented in advanced courses, such as AP (Kanno & Kangas, 2014; Kerr, 2014). The isolation of this segregation can create feelings of alienation even among students in advanced courses (Taliaferro & DeCuir-Gunby, 2008).

Exit surveys conducted by Kerr (2014) revealed that non-White students perceived "the overly White complexion of advanced classes indicates that they are geared toward White students only" (p. 481). If students look around their classroom and do not see anyone that looks like them, it may tacitly communicate that they do not belong. Perception is a powerful force, and schools must be mindful of how underrepresented students perceive their place in AP classes.

Gifted and Talented (GT) programs and subsequent tracking may contribute to the subtle

segregation which establishes the complexion of AP classrooms (Kanno & Kangas, 2014; Shores et al., 2020). GT programs sort academically high-achieving students into advanced, differentiated pathways separate from their peers and can begin as early as elementary school (Shores et al., 2020). Exposure to GT instruction can lead to academic gains across all core content areas: English, math, science, and social studies (Shores et al., 2020). Despite the most significant effect size of these gains affecting minority students, Black students remain vastly underrepresented in gifted education (Shores et al., 2020).

Tracking students into homogenous groups can create a defacto segregation effect. "Scheduling a student into only one or two advanced classes often predetermines the rest of that student's schedule due to class scheduling and availability" (Kerr, 2014, p. 482). This narrow scheduling, in turn, creates an unintentional silo effect, where students in advanced courses are grouped for the rest of their school day and set apart from their peers in all other classes. Making matters worse, Black students—and other minority subgroups—are less likely to participate in these programs and "are more likely to be assigned to lower academic tracks" (Xu et al., 2021, p. 962). Exclusion from advanced courses establishes lower-level tracks, from which students rarely exit. The rigidity of these tracks creates a subtle segregation that carries profound implications for those not deemed gifted. Divergent student tracks can lead to students being labeled "less capable" or "at risk." Rodriguez and McGuire (2019) found that even Black and Hispanic students who are academically prepared for advanced courses are still more likely to enroll in less advanced courses than their White peers. These labels may even serve as self-fulfilling prophecies, as non-gifted students can develop self-image issues affecting their motivation and college trajectory (Xu et al., 2021).

Shores et al. (2020) discussed how dividing and labeling students creates a "categorical

inequality" (p. 2091). They argued that schools were responsible for assigning students to socially meaningful categories associated with advantages and disadvantages (Shores et al., 2020). In essence, schools created categorical boundaries and assigned labels to students, such as GT, advanced, lower-level, at-risk, and more. These labels may become self-fulfilling prophecies without the direct intervention of adults who encourage a student to reach their potential regardless of the labels to which they are assigned.

Issues of isolation and belonging can serve as deterrents to AP enrollment (Kerr, 2014). Students are social beings. Regardless of intentionality, when students do not see themselves represented in rigorous courses, they can pick up on implicit messages of importance and acceptance (Kettler & Hurst, 2017). My research considers the importance of a strong sense of belonging among Black scholars in AP courses. Accordingly, I propose an intervention to establish a sense of academic belonging through individual advisement. By empowering students as individuals, I hope to foster efficacy among Black students to pursue AP courses as a preparation for success in college, thereby increasing diverse representation in AP courses.

Counseling as a Change Agent

Considering my sphere of influence for leveraging change, I was especially interested in the role of high school counselors as change agents. I serve as the district-level administrator overseeing secondary school counselors. I am very familiar with their role as the primary source of academic and college advisement in the SSSD. While parents, teachers, and administrators bear a portion of the responsibility for developing and supporting students' college aspirations, "school counselors are particularly poised by way of assignments to college counseling as well as the ability to have individualized discussions with students regarding their future goals" (Crumb et al., 2021, p2). School counselors can serve as change agents in addressing the Black-

White AP participation gap by leveraging their critical roles as academic advisors and arbiters of access (Davis et al., 2014; Ohrt et al., 2009). By challenging discriminatory policies and systemic barriers to access, school counselors "are in a unique position to reverse institutional barriers and challenge the deficit thinking that propagates the AP equity and excellence gaps for African American students" (Davis et al., 2014, p. 33). The duality of their responsibilities, supporting students' academic and social-emotional needs, is essential in addressing the challenge because Black AP enrollment is not limited to academics alone. It is a complex matter that addresses cultural issues of representation, acceptance, belonging, and post-secondary success. Counselors are uniquely positioned to address both aspects of this problem (Davis et al., 2014)

Davis et al. (2014) conducted a study emphasizing a holistic approach to combating the underrepresentation of Black students in AP courses. Throughout the study, school counselors collaborated with students, families, and the AP instructor to provide a well-rounded support system (Davis et al., 2014). This study focused on identifying Black students with untapped AP potential and supporting participants through weekly individual and group counseling sessions (Davis et al., 2014). While results from the study did not reveal a significant difference in achievement between Black and White students in terms of their AP scores, scholars found a significant positive effect among Black students who participated in the counseling sessions as opposed to those that did not (Davis et al., 2014).

Counselors may also serve in informal roles as gatekeepers to AP courses because school-level policies require students to be recommended by teachers or counselors for AP classes (Davis et al., 2014). Research by Young (2016) evaluated the effectiveness of an academic support program—Achievement via Individual Determination (AVID)—in building

academic resilience among underrepresented student groups. Young (2016) noted that "many AP courses require counselor or teacher recommendation thus, it is important that Black students plan ahead because requisite knowledge and exposure are necessary to gain access to these courses" (p. 3). For Black students to receive AP course recommendations, they must have already developed the prerequisite skills and taken preparatory coursework to signal teachers and counselors that they deserve a recommendation (Young, 2016). In essence, students must satisfy the hidden prerequisites of decision-makers to unlock the formal prerequisite expectation of being recommended. Unfair burdens are placed on educators to choose who will have access to courses vital to college preparation. "Advanced class student enrollment needs to be based entirely on the individual student's knowledge and skills, not the color of the student's skin. And this truth must be taught intentionally to as many students" and educators as possible" (Kerr, 2014, p. 487). Counselors must learn to leverage this role efficaciously, pushing underrepresented students to take AP courses rather than settling for the status quo.

Even though laws may grant equal access to AP courses, Black students do not always have unfettered access to AP classes due to restrictive policies and a lack of institutional knowledge. If students are unaware of prerequisite requirements, teacher recommendations, or override policies that might determine their enrollment, they do not truly have access to AP courses. Counselors must also balance their responsibilities to enforce school policies with their duty to act as family-school liaisons and student advocates (Ohrt et al., 2009). They guide students and families by navigating them through the confusion of bureaucratic policies, both expressed and implicit.

However, it is essential to note that the Black-White AP participation gap does not necessarily reflect an outright denial of legal rights to Black students but may be a matter of

operational citizenship. In their case study of the Black AP participation opportunity gap among ten urban high schools in North Carolina, Taliaferro and DeCuir-Gunby (2008) posit that inequalities in AP are not a matter of students possessing the right to take advanced courses but rather the ability to exercise their rights successfully. For example, Black students may "face additional challenges to accessing the courses" because they may not be recommended to take AP courses and may not be aware of the procedures to appeal such decisions (Taliaferro-DeCuir-Gunby, 2008, p.170). Counselors can assist students and families encountering these issues. By ensuring the families of underrepresented students are aware of local policies—such as prerequisite coursework, recommendation requirements, and override and appeals processes—counselors can help eliminate the deficits associated with a lack of institutional knowledge.

Few research studies focus on the role of counselors in closing the Black-White AP participation gap. Both the studies of Davis et al. (2014) and Ohrt et al. (2009) center their counselor-centric approaches on achievement, specifically student AP exam scores, rather than merely increased enrollment. College Board and others acknowledge that there are benefits for students participating in AP courses even if they score below the threshold for earning college credit (Bauer-Wolf, 2022). Considering Black students are three times more likely to attend college if they take even one AP course, I think focusing reform efforts on increased participation rates among Black students is worthwhile (Davis et al., 2014).

Existing research on the Black-White AP participation gap reveals a history rooted in inequitable access for Black students (Klopfenstein, 2004b; Schneider, 2009). It should come as little surprise that courses designed initially and reserved for the wealthy White suburban elite developed a longstanding gap in equitable access. Despite the diffusion of AP courses to suburban and rural areas and attempts to increase access by augmenting course offerings and

funding, the participation rates of Black students continued to lag behind those of their white peers (Klopfenstein, 2004b). The history of the gap has been well documented, and even the College Board acknowledges the problem itself; however, what research has yet to identify is a comprehensive response for closing the gap (College Board, 2023b). While a singular cogent approach is not likely to emerge as a one-size-fits-all cure, the longevity of the gap and its national scope indicate that this is a wicked problem of practice that has yet to be solved. I find hope and inspiration in the work of Davis et al. (2014), Crumb et al. (2021), and Ohrt et al. (2009), which advance the argument that broader participation in AP courses among Black students can be attained by leveraging the role of counselor as academic adviser and relationships counselors have with their students.

RESEARCH IMPROVEMENT TEAM

Although my role as the researcher drove much of this study, I was aided in the inquiry process by key stakeholders. School counselors were central to this study. My study was influenced heavily by the works of Crumb et al. (2021), Davis et al. (2014), and Ohrt et al. (2009), which emphasize the role of school counselors as change agents in increasing the participation of racially marginalized groups in AP courses. As Ohrt et al. (2009) described, school counselors "are in a unique position to address the academic, career, and personal/social needs of all students including those who are traditionally underserved" (p. 60). From influencing the development of interview and focus group questions to applying the treatment during academic advisement, counselors of the SSSD played an integral role and left an indelible mark on this study.

Additionally, my study aimed to identify the factors of counselor-led academic advisement that positively influence Black students to enroll in AP coursework as an essential

preparation for college. Engaging with the students themselves was vital to this process. Their responses, in interviews and focus groups, helped determine the effectiveness of the treatment and provided feedback to tailor the approach in any future iterations of the PDSA cycle (Hinnant-Crawford, 2020). In addition, school and district instructional leaders—namely the principal, district data integration specialist, and district curriculum coordinators—also played important roles in the study as they were informed of my findings and encouraged and empowered to make changes to continue the effort to reduce the Black-White AP participation gap in the SSSD.

RESEARCH QUESTIONS

The gap between Black and White students in AP enrollments was significant and widespread (Conger et al., 2009). It raised equity issues at the national, state, and local levels (Klopfenstein, 2004b). The percentage of Black students enrolling in AP courses in the SSSD represented a fraction of their representative population in the district (SC DOE, 2019-2022). On the contrary, White students—who represented the ethnic majority of the school—surpassed the percentage of their representative population concerning AP enrollment (SC DOE, 2019-2022). With so much at stake regarding college preparedness and ancillary benefits, educators must seek interventions to increase Black AP scholars and reduce the Black-White participation gap. My study sought to address this wicked problem of practice by attempting to answer the research question: How does individualized, counselor-led academic advisement influence the enrollment of Black students into AP courses? I used an improvement science design to guide my research. Specifically, I applied a Plan-Do-Study-Act (PDSA) cycle as a framework for assessing the impact of my intervention and whether or not any change generated from my intervention resulted in an improvement (Hinnant-Crawford, 2020).

AP courses were created to bolster the US education system to produce the best thinkers and workforce in the world (Schneider, 2009). Unfortunately, expanding the program to include the nation's diverse students was a slow process (Conger et al., 2009). The earliest beneficiaries of AP courses—White students—still dominate the program's enrollment today, but an intervention that increases the enrollment of Black students would be well worth the effort. Narrowing the gap is not the leveling of a playing field but rather a rising tide that lifts all boats and makes the program's original goal of building a workforce equipped with world-class skills and knowledge a reality for all.

<p style="text-align:center">CAUSAL ANALYSIS OF THE PROBLEM</p>

Data Analysis

One of my responsibilities as a district-level instruction administrator was overseeing the academic program of the three high schools of the SSSD. I collaborated with the building principals and other district curriculum administrators throughout this process, which included reviewing the AP enrollment and passing percentages for the district. A cursory review of the SSSD's AP data depicts a district experiencing broad success. In 2021, nearly one-third (32%) of all SSD high schoolers enrolled in one or more of the SSSD's 20 AP course offerings, and all three high schools were experiencing overall passing percentages of 76% or greater (SC DOE, 2019-2022; SC DOE, 2021). These statistics compared favorably to other districts in the state (SC DOE, 2019-2022). However, a closer examination of the data, through a lens focused on the participation rates of racial subgroups, revealed that Black students were underrepresented in AP enrollment in the SSSD and were therefore not benefiting from the broad success that surface data reflected (SC DOE, 2019-2022).

Recognizing that AP courses served as the SSSD's premier college preparation, I identified a red flag marking the gap that was leaving the Black students of the SSSD

underserved and potentially underprepared. The AP participation gap implied that the district

was failing to connect Black students with its most meaningful instruction at a rate similar to

their representative population in the school community. This prompted me to engage in

empathy interviews with the three high school principals and the six counselors at each school

that are closest to the work (Hinnant-Crawford, 2020). Empathy interviews with the principals

were structured as informal discussions. While still informal, empathy interviews with school

counselors were held in a group setting as an extension of their department meetings. Both

groups seemed acutely aware of the underrepresentation of Black students in AP courses. They

referenced a multitude of factors that restricted or deterred Black students from accessing AP

courses with the same frequency as their White peers. Discussions with school counselors

revealed a sense of urgency to alter advisement as a means to broaden access and increase the

participation of underrepresented student groups. Counselor comments revealed that any changes

increasing access would likely encounter pushback from instructors who were fearful of

negatively impacting their passing rate and, in turn, their reputation as elite educators. They

feared that this could cause AP teachers to resent counselors and assume they were misplacing

students academically. Principals acknowledged the importance of increasing access to AP

courses but cautioned that AP teachers could see any new intervention as overwhelming. One

principal emphasized her concern that additional actions contributing to a lack of teacher comfort

could lead to teachers leaving the school for other jobs where they could be more comfortable. I

acknowledged that teacher comfort should not overshadow what is best for students; I

recognized that these are real concerns for school leaders contending with contemporary teacher

shortages. For the most part, feedback from principals and teachers confirmed my initial thinking

that there is an awareness of the AP participation gap and a feeling of helplessness to make changes, preserving the status quo.

Fishbone Diagram

Equity issues—such as the Black-White participation gap—are not easily compartmentalized. They represent interconnected, multifaceted problems where one issue may influence another. For example, the Fishbone Diagram in Figure 1 illustrates how families may lack sufficient knowledge of AP courses and prerequisite coursework for enrollment (Perry et al., 2020). Both of these issues may independently keep a student from enrolling in AP courses; however, the problem becomes even more complex, considering that one challenge may cause another. There is a significant body of research documenting the underrepresentation of Black students in AP courses; however, no singular approach has been identified to combat the longstanding participation gap. The bones of this diagram were based on themes I identified in the relevant literature.

Figure 1

Fishbone Diagram
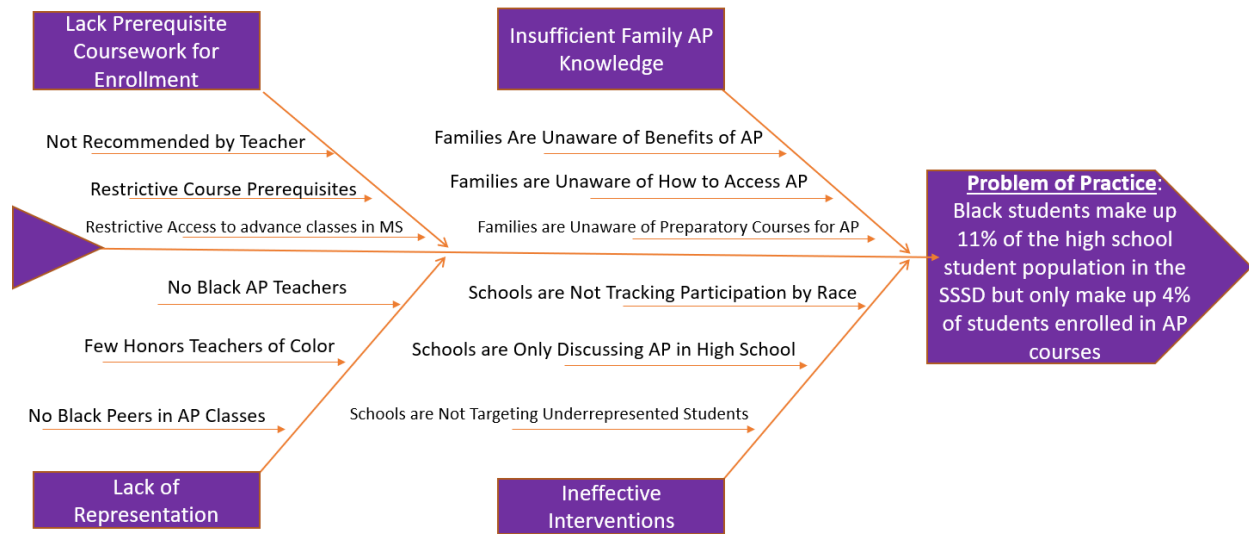
Complex problems of practice require comprehensive interventions. To maximize my intervention's influence, I focused my interventions on a lever affecting multiple aspects of the underrepresentation of Black students in AP courses: individualized academic counseling. By increasing family knowledge of the benefits of AP, how to access AP courses, and what coursework prepares a student for success in AP courses, I also helped families avoid being denied access due to a lack of restrictive prerequisites. Klopfenstein (2004a) was one of the first to identify individual counseling and mentoring as a lever for addressing the enrollment equity gap. She observed that counselors were marginalized by the bureaucratic aspects of their jobs, leaving parents to serve as the primary academic advisors (Klopfenstein, 2004a). While research emphasizes parents' influence on students' academic aspirations—especially among Black students—shifting the burden of college and career coaching squarely onto the shoulders of parents is problematic (Ohrt et al., 2009). Many parents lack the formalized training and institutional knowledge to navigate course progressions, policies, and prerequisites to access

advanced curricula such as AP courses. The skill imbalance between parents and professionals highlights the vital role that school counselors play in developing "comprehensive programs to reduce barriers and support students in their holistic development" (Ohrt et al., 2009, p. 60). Perhaps most influential in selecting my lever and designing my intervention was the work of Davis et al. (2014), who leveraged the role of the school counselor to develop a broad standard of access and individualized and group counseling sessions as a system of support to promote the enrollment of Black students in AP courses. While their study focused on enrollment and student performance AP exam scores, their research-based concepts of a broad, quantifiable standard of access and individualized, counselor-led academic advisement profoundly influenced my approach (Davis et al., 2014). Ultimately, my review of research led me to believe that counselors would be the best vehicle within the systemic sphere of influence of the school to bring about change. I believe a specific focus on increasing student and family awareness of the benefits of AP coursework and the institutional capital necessary to secure access to these courses poses a compelling, research-based rationale for intervention.

AIM

My study sought to address the problem of practice of the significant gap in AP participation rates between Black and White students in the SSSD. I have come to understand this problem by closely examining the AP participation data of SSSD's high schools and engaging with school principals and counselors in empathy interviews to gain their site-specific perspective (Hinnant-Crawford, 2020). My aim was to effect meaningful change by increasing the number of Black students in the SSSD enrolling in an AP course, exposing underrepresented students to the district's premier academic path as essential preparation for college. Increasing the AP enrollment of Black students matters profoundly, especially considering that a study by the

28

US Department of Education found that Black students are "three times more likely to earn a bachelor's degree if they even attempt an AP class in high school" (Davis et al., 2014, p. 32). So even if students—prompted to take an AP course as a result of this study—do not pass the AP exam and earn college credit, they will still be better prepared for college for having taken the course. I sincerely hoped that through improvement science, this study would help reduce the deleterious effects on equitable college preparation that Black students experience from non-participation in AP coursework (Hinnant-Crawford, 2020).

Conclusion

AP courses remain one of the most important college preparations that schools can offer students because of their potential to positively influence college outcomes, including enrollment, persistence, and completion (Rodriguez & McGuire, 2019). However, nearly 70 years after the creation of the AP program, Black Students are still struggling for equitable access (Rodriguez & McGuire, 2019). Despite intentional efforts to spread the program and reach underrepresented Black students, a steady and consistent gap remains (Bittman et al., 2017). Many Black students must still contend with restrictive prerequisite requirements, issues of belonging, and inadequate preparation (Hallett & Venegas, 2011). These issues highlight the need for school-level encouragement and advocacy to access AP courses. I proposed that school counselors could serve as crucial access conduits for Black students. I aimed to increase the enrollment of Black students in the SSSD by 5.8% during the 2024-20245 school year. Even if I did not significantly reduce the gap, increasing the enrollment of Black students in AP courses could yield meaningful benefits for the students taking these courses. The enormous potential to positively influence college outcomes associated with AP participation, especially among Black students, was too significant to continue to allow an exclusionary gap (Davis et al., 2014). While

a great deal of research highlights the inequity of the Black-White participation gap, research

focused on counselors addressing the barriers to AP access through individualized academic

advisement is far less prevalent. Additional research regarding counselor-led interventions

focused on increasing AP access for Black students is warranted.

CHAPTER TWO

THEORY OF IMPROVEMENT

Introduction to the Theory of Improvement

Articulating one's theory of improvement is an integral part of the improvement science process. It assists the researcher in narrowing their focus from the broad causal factors articulated on the fishbone diagram (see Figure 1 in Chapter 1) to a narrower, more practical scope that can be tested and measured (Bryk et al., 2017). As Bryk et al. (2017) explained during this part of the improvement science process, "a conversation initiates about where and how productive changes might best be introduced…we seek to identify a small but powerful set of drivers to initiate improvement" (p. 72-73). In other words, a theory of improvement allows one to shift from a causal focus to a solutions orientation. Further, it articulates the foci and levers by which the researcher will attempt to achieve their stated aim (Perry et al., 2020). In the following sections, I present my theory of action and explain how related research justifies the drivers and change ideas I intend to use to combat my problem of practice.

Theory of Improvement

To communicate my theory of improvement, I used a driver diagram (see Figure 2). A driver diagram allowed me to express which actions I theorized would positively affect my expressed aim (Perry et al., 2020). It enabled me to graphically represent my best ideas for addressing the problem of practice (Perry et al., 2020). My aim was to increase the percentage of Black 10th-grade students requesting to enroll in at least one AP course by 5.8% in the SSSD during the 2024-2025 school year. My theory of improvement sought to bring about this goal through a sequence of school policy shifts and academic advisement improvements aimed at increasing the AP enrollment of Black 10th-grade students.

Figure 2

Driver Diagram
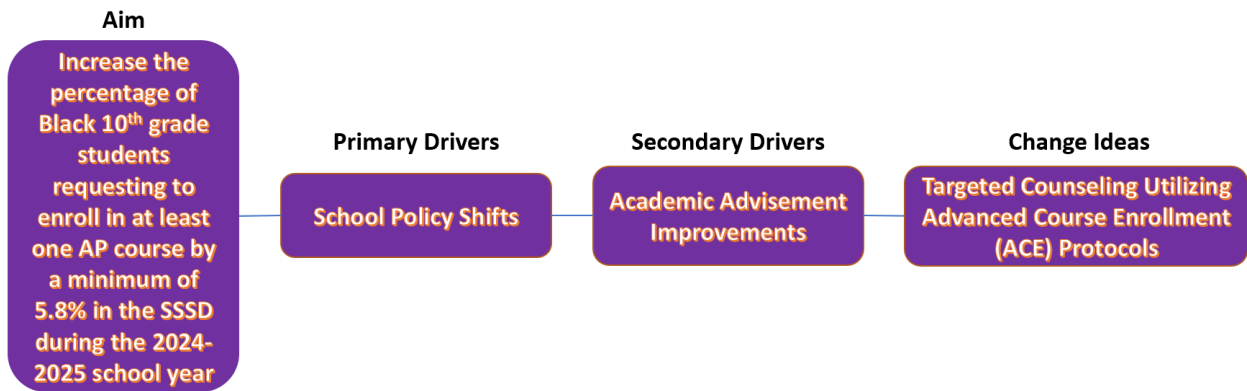
Primary Driver

Primary drivers identify "where within the system key leverage points exist as working areas for improvement" (Perry et al., 2020, p. 92). Decades of federal and state-level intervention have grown the overall enrollment in AP courses but failed to reduce the Black-White participation gap (Klopfenstein, 2004b). A longitudinal analysis of equity gaps in suburban schools by Kettler and Hurst (2017) observed

> After witnessing the rise in minority populations in schools and the lack of an equal rise
>
> in these populations' entrance into AP programs, the College Board released several
>
> national reports encouraging schools to promote academic achievement among minority
>
> populations, especially Black and Hispanic students (p.5)

This documents that even the College Board, the parent company producing AP courses, acknowledges an equity gap for Black students. This also calls attention to the underrepresentation of Hispanic students, which is a concerning problem that warrants further research but remains outside the parameters of my study. The struggles to address the equity gap at the macro (federal and state levels) prompted me to attempt my improvement science

intervention at the micro or school level. The primary driver for my study was to shift or eliminate school policies and procedures in the SSSD that act as barriers to the enrollment of Black students in AP courses.

Since enrollment is a result of student scheduling, school-level intervention seemed the best location to try to leverage policy shifts to promote Black AP enrollment. A study by Kerr (2014) examined the honors and AP enrollment gap that existed between White and non-White students in a Kansas high school. Exit surveys conducted with senior students revealed that non-White students were acutely aware of the overrepresentation of White students in advanced courses and suggested that restrictive scheduling was, at least partially, to blame (Kerr, 2014, p. 481). Similarly, other researchers acknowledge the underrepresentation of Black students and, conversely, the overrepresentation of White students and cite school tracking policies as a mechanism hampering equal access (Kanno & Kangas, 2014). Black students must contend with disproportionate tracking, which may leave them unprepared for or unable to access AP classes (Kanno & Kangas, 2014). With AP participation linked to so many college benefits—including increased enrollment, higher college grade point averages (GPA), and greater likelihood of graduating within four years—school policies must be examined to be sure they are not exclusionary (Kettler & Hurst, 2017).

Secondary Driver

If primary drivers identify where intervention is needed, then secondary drivers identify what changes are necessary to fulfill the aim of a driver diagram (Perry et al., 2020). Secondary drivers express the necessary change in terms of actionable steps and should be limited to the factors that the scholarly practitioner has the ability to directly influence (Perry et al., 2020). My secondary driver consists of improving academic advisement to identify and connect

underrepresented Black students with personalized information and encouragement to attempt an AP course. My professional role in the SSSD positioned me well to establish urgency among high school counselors for such reform and subsequently build critical efficacy for advisement changes aimed at increasing the number of Black 10th-grade students enrolling in an AP course.

Shifts in academic advisement address establishing trust and meaningful relationships with students and connecting them with the "operational citizenship" necessary to adequately prepare for and access AP classes (Taliaferro & DeCuir-Gunby, 2008, p. 169). Taliaferro and DeCuir-Gunby (2008) highlighted the importance of establishing school-student relationships with Black students to help them "feel as though they belong, particularly in the AP classroom" (p. 168). Schools must work to overcome Black students' feelings of mistrust and lack of belonging, which stem from a history of school-related discrimination (Crumb et al., 2021; Taliaferro & DeCuir-Gunby, 2008). Previous research has emphasized the role of school counselors in establishing these bonds, even going so far as to say that the presence of a school counselor who believes in them is a strong predictor of college enrollment for Black students (Crumb et al., 2021). Black students have the desire and motivation to attend and prepare for college (Crumb et al., 2021). The challenge lies in connecting these promising students with personalized advisement led by a caring, motivated school counselor.

Additionally, improved advisement protocols provide an opportunity to tear down barriers to access that bureaucratic prerequisites and implicit expectations may obscure. Many schools require faculty recommendations as a prerequisite for enrolling in AP courses; however, Young (2016) posited that "many parents of color are under informed by schools" regarding these policies—and potential workarounds—until it is too late (p. 3). This highlights the importance of clear and consistent advising protocols for navigating these hurdles. Taliaferro and

DeCuir-Gunby (2008) define operational citizenship as a person's ability to use their rights rather than simply possessing a right in theory. They go on to explain that Black students often encounter barriers to operationalizing their rights to access advanced classes like AP courses (Taliaferro & Decuir-Gunby, 2008). For example, Black students may be restricted from accessing an AP course due to a school's recommendation process and may also be unaware of local mechanisms for appealing such decisions (Taliaferro & DeCuir-Gunby, 2008). This highlights the importance of advisement policies prioritizing access for all students.

Change Idea

The final step of a driver diagram expresses the change idea. Change ideas address how the desired change, which will be applied through a Plan-Do-Study-Act (PDSA) cycle, will be achieved (Bryk et al., 2017). Change ideas are the most granular expression of the intervention intended to generate change (Perry et al., 2020). My change idea is to implement personalized, counselor-led academic advisement sessions to increase the number of Black students enrolling in AP classes. This intervention will be applied to rising 10th-grade students—current 9th graders—as they select courses for the 2024-2025 school year. When this change idea was applied as a real-world intervention, rising 11th and 12th-grade advisement had already elapsed, and 9th-grade AP access will be influenced by middle school standardized testing scores. A broader application of this intervention to other grade levels could be considered for future iterations of a PDSA but remain outside the parameters of this study. Although yearly IGP meetings are held with every student to discuss scheduling and future college and career aspirations, this intervention will implement a specific advanced course enrollment (ACE) protocol to identify and encourage students demonstrating an aptitude for advanced courses that have not previously attempted AP courses.

I am convinced that counselors possess enormous potential to encourage greater participation in AP courses among Black students. In a study of the postsecondary goals of rural Black males, Crumb et al. (2021) stated that

> While we hold the perspective that all school personnel are responsible for cultivating college aspirations (Chambers & Crumb, 2020; Chambers et al., 2019; Mckillip et al., 2012), school counselors are particularly poised by way of assignments to college counseling as well as the ability to have individualized discussions with students regarding their future goals (p.2).

This highlights the congruence between the counselors' existing roles and duties and efficacy to encourage broader AP participation. Crumb et al. (2021) explain that counselors can demystify the privileged knowledge of college preparation and access to AP courses as a means of lessening the participation gap. This theme was also echoed in the work of Young (2016). A study by Davis et al. (2014) emphasized the role of counselors in recruiting and supporting Black students to participate in AP Psychology. The work of Davis et al. (2014) underscored the critical role counselors play in encouraging underrepresented students to pursue rigorous AP courses. Their study explained how counselors can cast off their traditional roles as AP gatekeepers and instead work to dismantle institutional inequities of access (Davis et al., 2014). Further, a study by Ohrt et al. (2009) framed the issue of the AP participation gap as a challenge requiring a holistic approach. It stands to reason that addressing an issue of racial equity would require both an academic as well as a social-emotional response and school counselors are well-equipped for such a challenge.

Theory of Improvement Summary

This study engaged school counselors in supporting and empowering Black students to enroll in AP courses. Through policy shifts designed to improve academic advisement, counselors connected previously unidentified students demonstrating the potential to be successful in AP courses with support and personalized advisement to encourage their participation. Previous research supports the assertion that counselors are the key to unlocking the AP potential of untapped Black scholars (Crumb et al., 2021; Davis et al., 2014; Ohrt et al., 2009). I investigated the influence of counselors as academic advisors to increase the participation of Black 10th-grade students in AP courses.

PLAN-DO-STUDY-ACT CYCLE

Central to the improvement science design is the focus on a localized problem of practice that the researcher attempts to address through practical application of their theory of improvement (Perry et al., 2020). I elected to use a PDSA cycle as the vehicle for applying and enacting my theory of improvement (Bryk et al., 2017). "But unlike traditional forms of research, this is localized theory, unique to a specific system, and narrowly focused on how to improve that system's outcomes" (Hinnant-Crawford, 2020, p. 153). As its name suggests, the PDSA cycle is an iterative process of planning, doing, studying, and acting to test one's hypothesis for generating positive change (Hinnant-Crawford, 2020). The PDSA cycle enabled me to assess the influence of my intervention and determine if any subsequent change is an improvement (Hinnant-Crawford, 2020).

During the 2021-2022 school year, Black students made up approximately 11.62% of the total high school population of the SSSD, but only 4.34% of the students enrolled in Advanced Placement (AP) courses (SC DOE, 2019-2022). This participation gap is evidence of inequitable

opportunities for Black students to access rigorous classes that serve as essential preparation for college. In efforts to remedy this underrepresentation of Black students in AP courses, I proposed an aim of increasing the percentage of Black 10th-grade students enrolled in at least one AP course by 5.8% in the SSSD by the end of the 2024-2025 school year. To achieve this, I applied my change idea of providing individualized, counselor-led academic advisement following advanced course enrollment (ACE) protocols—targeting students without previous AP experience that demonstrate the potential to be successful—in a PDSA cycle (see Figure 3).

Figure 3

Plan-Do-Study-Act Cycle
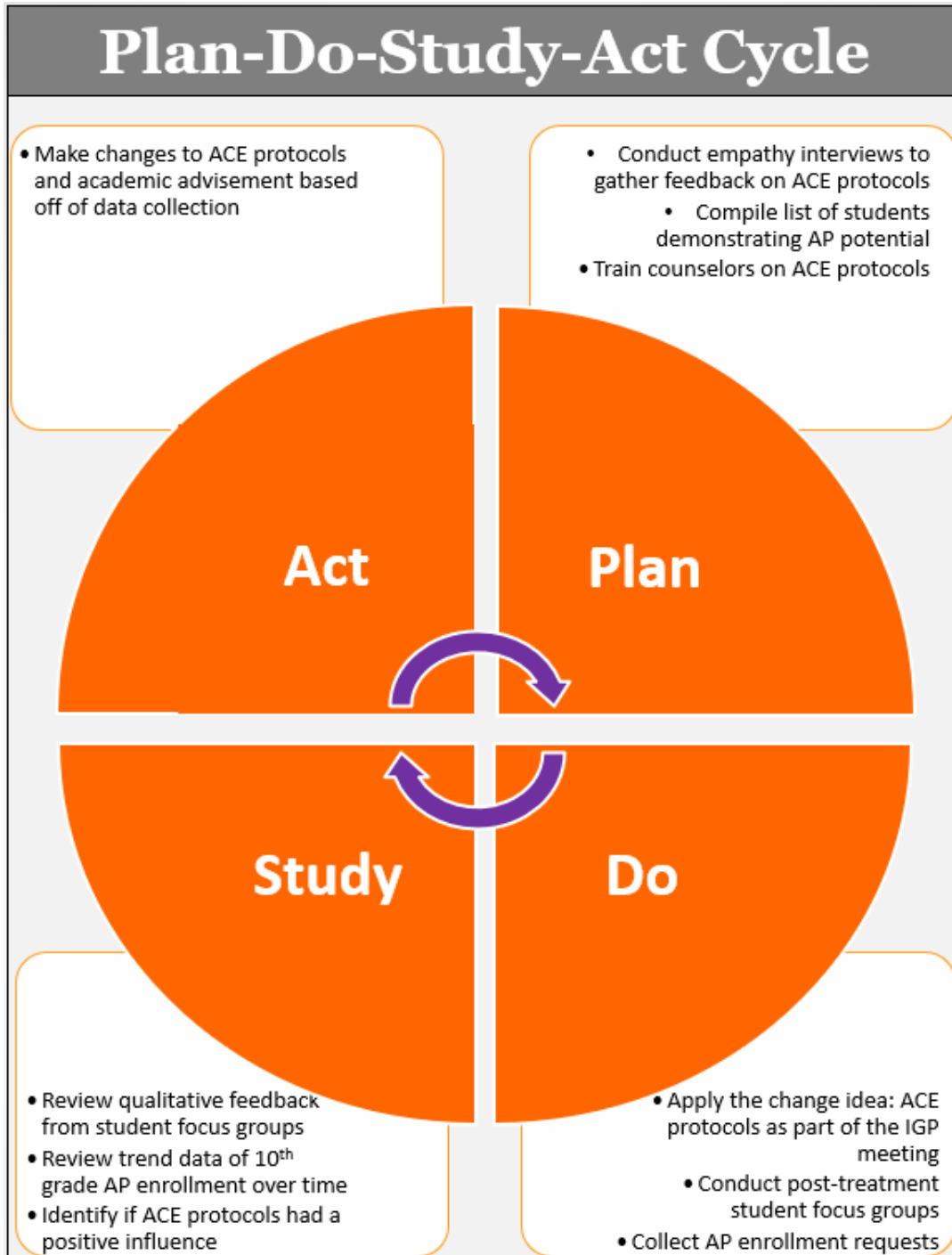
Plan

The Plan stage of this PDSA cycle enabled me to gather data and stakeholder feedback, which was vital to shaping my ACE protocol intervention. Perry et al. (2020) described the planning stage as a period when the researcher defines the change, makes predictions, and designs a way to measure the outcomes. The planning stage served as the initial phase of my PDSA implementation timeline (see Figure 4).

During the planning stage, I conducted empathy interviews with important process stakeholders: the high school counselors and principals of the SSSD (Perry et al., 2020). This enabled me to gauge their perceptions of the need for this intervention and solicit their input on the development of the ACE protocols. "Such insights from stakeholders or users can contribute greatly to the scholarly practitioner's understanding of a problem because it moves them beyond their own experience and views" (Perry et al., 2020, p. 63). Adding additional voices to the improvement team broadened the perspective of my approach.

These interviews also helped me to develop the documents that would guide counselors as they implemented the intervention during the do stage. Recognizing that providing each participant with consistent messaging regarding the benefits of AP courses would be necessary, I developed an ACE protocol script (see Appendix A) for counselors to follow. While reading the script word-for-word to prospective AP enrollees could be robotic and come off as insincere, I allowed for some degree of variance from the script so long as counselors covered essential aspects of the intervention. Specifically, I required that counselors review each of the bulleted benefits of AP courses and complete an AP Mock Scheduling Sheet (see Appendix B) as non-negotiable intervention requirements. Counselors voiced a need to use their knowledge of the student to tailor conversations relative to each student's interests and goals. The script provided a

tool to build initial familiarity with the framework of ACE protocols advisement and guardrails to ensure key aspects of the treatment were applied with fidelity; however, I allowed counselors to communicate portions of the script in their own words and incorporate commentary regarding students' individual needs and interests to ensure that the protocol did not undermine counselors' authenticity of approach and rapport with students.

Figure 4

Implementation Timeline

September 2023
Conduct empathy interviews and finalize ACE protocols

November 2023
Conduct rising 10th grade IGPs with ACE protocols

February 2024
Assess effectiveness and make recommendations for the future

October 2023
Share lists of target students and train counselors on ACE protocols

January 2024
Collect and analyze rising 10th grade AP enrollment data
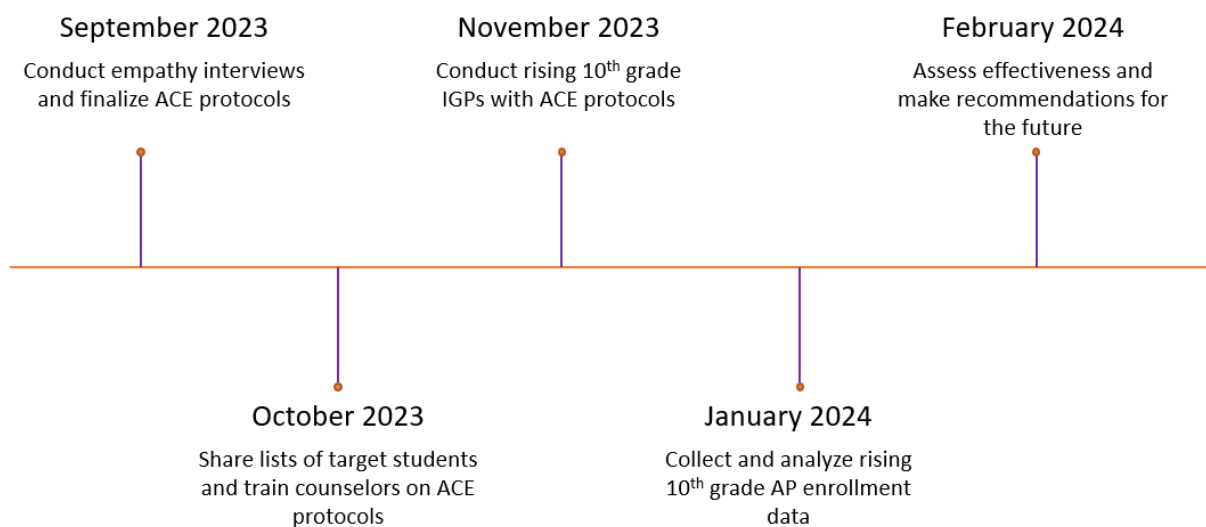
I also used the planning stage to compile the lists of rising 10th-grade students demonstrating academic success that might lead to success in AP courses. Students demonstrated potential AP success by satisfying one of the following criteria: 1) enrolling in an honors-level course during their 9th-grade year or 2) maintaining an overall average of 80 or better in all classes prior to academic advisement. While there is no existing research indicating that either of these factors will yield success in AP courses, I wanted to be careful to winnow the treatment to students who have experienced some degree of experience with rigorous coursework or academic success in high school, considering the rigorous nature of AP courses and the AP

exam. I intentionally excluded considerations of gifted and talented (GT) status, as Black

students face national underrepresentation in this metric (Shores et al., 2020). Shores et al.

(2020) observed that "Black students are half as likely to be classified as GT" despite the fact

that "access to GT can improve reading, math, and science scores, with effects being largest for

minority students" (p. 2094). In the SSSD, GT status guarantees admittance to honors-level high

school coursework beginning in middle school. Non-GT students may enter honors courses in

high school by earning a final grade of 90 or higher in their 8th-grade core academic classes (i.e.,

English, math, science, and social studies) or pursue a parent override of their placement

recommendation. This calls into question the operational citizenship of students who, in theory,

may have access to these courses but may not possess the institutional knowledge to make full

use of their rights (Taliaferro & DeCuir-Gunby, 2008).

Finally, once the input and data had been gathered and the ACE protocols had been

shaped, I began to train the school counselors who would carry out the intervention. I met with

the counseling department at each of the district's three high schools to explain our aim and walk

them through the protocol. I was careful to listen attentively to their questions and provide

detailed guidance on how they should conduct academic advisement regarding AP courses for

students participating in ACE protocols. In order to provide a clear overview of the process, I

created a flowchart (see Appendix C) to map the progression of advisement relative to student

responses. This served as a visual representation of the intended shape of ACE advisement

conversations. It helped emphasize the essential aspects of the intervention, specifically, that all

participants would hear the benefits of AP courses and see how an AP course could fit into their

schedule for the upcoming school year.

Do

        The Do stage of the PDSA cycle is where the treatment is applied. Perry et al. (2020) described this as the stage where the change idea is carried out and data is collected. During the Do stage of my study, school counselors conducted targeted, AP-focused academic advisement using ACE protocols during rising 10th-grade IGP meetings. Counselors are required by state law to conduct yearly IGP meetings to discuss a student's progress toward a diploma and college and career plans (SC DOE, n.d.). In the SSSD, IGP meetings are also when students request the courses they wish to take during the following school year. This process begins in early November and concludes before winter break in late December at all three high schools in the SSSD. Counselors conducted these meetings independently using the training they received during the planning stage. I made myself available to counselors for questions and support throughout the entire process.

        At the conclusion of rising 10th grade IGP meetings, I gathered essential data that was vital to measuring the success of my intervention. First, I conducted focus groups with Black students who participated in academic advisement utilizing ACE protocols. I conducted semi-structured focus groups to assess participants' perceptions of the process and how participating in ACE advisement positively or negatively affected their interest and ability to access an AP course (Maxwell, 2012). Then, I collected AP enrollment requests. Enrollment data informed me how many students requested to take an AP course as a 10th grader during the 2024-2025 school year. I also collected longitudinal data on 10th-grade AP enrollment. I disaggregated and analyzed this data during the Study phase of the PDSA cycle to determine if my ACE protocols achieved the aim of increasing the percentage of Black 10th-grade students enrolling in an AP course by 5.8% during the 2024-2025 school year.

Study

During the Study stage of my PDSA cycle, I reviewed all the data collected thus far during my study and make important determinations about the effectiveness of my intervention. Perry et al. (2020) described the Study stage as the time for "analyzing the data; comparing findings to predictions; and gleaning insights" (p. 126). During this stage, I plan to review qualitative feedback from student focus groups, review trend data of 10th grade AP enrollment data over time, and determine whether the ACE protocols positively influenced Black AP enrollment in the SSSD. I will review and code student responses collected during focus groups in the Do stage of the PDSA cycle (Creswell & Poth, 2018). This will allow me to identify emergent themes and gain insight into the experiences and perceptions of Black students as they pertain to AP access and enrollment in the SSSD. In addition, I will augment my qualitative analysis with descriptive statistics reviewing historical AP enrollment data (Tanner, 2012). Descriptive statistics allow the researcher to describe what is typical, so a longitudinal analysis of AP enrollment disaggregated by race would provide this context (Tanner, 2012). To achieve this, I will seek to represent this descriptive statistical data with Shewhart charts (Provost & Murray, 2011). "The Shewhart chart applies Shewhart's theory of variation to time-series data and provides an operational definition of common and special causes of variation in a measure" (Provost & Murray, 2011, p. 219). This makes it an ideal format for tracking enrollment trends over time. Ultimately, all of my analysis is intended to yield a final determination of the effectiveness of my change idea. I will use the data from my qualitative review and descriptive statistics analysis to determine if ACE protocols were effective at increasing the enrollment of Black 10th-grade students into AP courses by 5.8% during the 2024-2025 school year.

Practical Measurement System

Practical measures refer to a comprehensive system of measurement woven throughout the testing of one's theory of improvement (Hinnant-Crawford, 2020). As its name implies, practical measures act as a practical extension of a researcher's data collection and analysis rather than an additional burdensome process (Hinnant-Crawford, 2020). Hinnant-Crawford (2020) explained that "Practical measures are pragmatic, and they break down the question of what works into four additional questions: 1. Did it work? 2. Is it working? 3. How is it working? 4. Is it working as intended?" (p. 138). Practical measures provide feedback throughout the process and require timely and ongoing data collection and analysis (Hinnant-Crawford, 2020). My research attempted to answer the question: Will individualized, counselor-led academic advisement using ACE protocols increase the percentage of Black students enrolling in AP courses? I used practical measurement to assess and strengthen my theory of improvement as it moved through the PDSA cycle. In the following sections, I explain how I applied outcome measures, driver measures, process measures, and balancing measures to my theory of improvement.

Outcome Measures: Did it work? Outcome measures are an ex post facto assessment of a change idea's effectiveness, meaning the measurement comes after the conclusion of the intervention (Hinnant-Crawford, 2020). Because this measurement lags behind the intervention, it is not used to alter the theory of improvement during the current iteration of the PDSA cycle; instead, outcome measures provide a final summative assessment of the overall success of the intervention (Hinnant-Crawford, 2020). My ultimate aim was to narrow the Black-White AP participation gap in the SSSD. My immediate aim was to increase the percentage of Black 10th-grade students enrolling in an AP course by 5.8% during the 2024-2025 school year. Meeting

these standards would indicate a successful intervention and that my change idea worked.

Driver Measures: Is it working? Driver measures provide feedback about how the intervention is working while it is still in process (Hinnant-Crawford, 2020). They are valuable because they offer "predictive validity for outcome measures" (Hinnant-Crawford, 2020, p. 147). My driver measure consisted of qualitative feedback collected from Black students participating in focus groups after the intervention. This measure revealed whether I was making progress towards achieving my aim. Post-intervention focus group participant responses indicated whether the ACE advisement protocols were having the desired effect of encouraging AP enrollment. These focus groups were conducted after the month-long window of rising 10th-grade IGP meetings, so this measure assessed progress while the intervention was still in process.

Focus Groups After institutional review board (IRB) approval and the application of the treatment, I conducted semi-structured focus group interviews with Black students from each high school of the SSSD. Each focus group lasted approximately 45 minutes and consisted of six to eight students. The first group consisted of students who participated in the ACE academic advisement, regardless of whether those students chose to enroll in AP courses. I posed the same five structured questions to focus group participants (see Appendix D). I also prompted follow-up questions to focus group members, asking for elaboration or clarification of their statements. Questions asked during the data collection explored topics such as participants' familiarity with the benefits of AP coursework as a preparation for college success, participants' perception of equal access to AP courses concerning student race, and participants' perceptions of the role academic counseling plays in determining if students will enroll in AP courses. I hoped to gather participants' insights about the factors that motivated them to pursue or forego AP coursework, their perception of the importance of AP coursework as a preparation for college, and any

obstacles they might have encountered in route to enrolling in an AP course. I wanted to learn more about the causal factors motivating students to enroll in AP coursework and identify non-influential or deleterious school actions that undermine enrollment efforts. I recorded and transcribed all focus group interviews. I triangulated this qualitative data by including descriptive statistics in my research. Doing this reduced the risk that my findings "will reflect only the systematic biases or limitations of a specific source or method" (Maxwell, 2012, p. 93).

Process Measures: How is it working? Process measures address the fidelity of implementation and ensure that process variance does not undermine the effectiveness of the treatment (Hinnant-Crawford, 2020). "They let you know whether or not the change idea is ineffective or if the implementation is the problem" (Hinnant-Crawford, 2020, p. 145). Without the structural guardrails provided by ACE protocols, the quantity and quality of information about AP courses provided to students and their parents during IGP meetings can vary by the counselor and their individual interactions. My intervention aimed to reduce system bias by (a) setting clear criteria for identifying students with the potential for success in AP courses, (b) providing counselors with scripts outlining the research-based benefits of participating in AP courses, and (c) mapping an academic pathway for enrolling in an AP course during the 2024-2025 school year. Consistency among the three high schools of the SSSD was vital to measuring the efficiency of my intervention. My improvement team developed ACE protocols to ensure systemwide alignment. High school counselors participating in ACE protocols completed a meeting checklist to guide each meeting and ensure all aspects of the meeting were completed with fidelity.

Balancing Measures: Is it working as intended?

Balancing measures ensure that the system's equilibrium is not thrown askew by the

introduction of the intervention (Hinnant-Crawford, 2020). Balancing measures offer the telltale signs "that ensure a change in one part of the system does not upset other parts of the system" (Hinnant-Crawford, 2020, p. 147). I believe that my intervention would significantly reduce the Black-White participation gap if it were limited to the specifically targeted, underrepresented subgroup—Black students. However, restricting a treatment believed to have universal benefits to one subgroup while denying it to another (i.e., White students) could be deemed unethical (for more, see National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). Therefore, according to the criteria outlined in my theory of improvement, all students demonstrating readiness for AP courses will participate in an ACE protocol advisement session regardless of race. This could cause an overall increase in AP enrollment for both Black and White students while failing to narrow the gap between these two groups. To monitor this situation and others potentially like it, I will use a balancing measure of collecting data on and analyzing the AP enrollment rates of White participants in ACE protocol meetings as well. I think it is important to note that even if my intervention fails to reduce the gap but increases the number of Black and White students enrolling in AP courses, students may experience the benefits associated with taking a rigorous AP course, like increased college enrollment, better first-year college performance, and higher rates of college persistence and completion (Rodriguez & McGuire, 2019). This is even more significant, considering a U.S. Department of Education study showed that Black students are "three times more likely to earn a bachelor's degree if they even attempt an AP class in high school" (Davis et al., 2014, p. 32).

Act

During the act stage of the PDSA cycle, I proposed changes to ACE protocols and academic advisement in the SSSD based on my data analysis performed during the Study stage.

Perry et al. (2020) described the Act stage as simply "using what was learned to decide what to do next" (p. 126). It is important to note that the PDSA process is designed as an iterative loop intended for multiple cycles guided by data analysis gleaned from the previous iteration (Hinnant-Crawford, 2020). During this stage, I proposed changes and edits to make my intervention more efficient for future applications of the PDSA cycle. I used what I learned from analyzing the focus group and historical enrollment data to guide the revision of my intervention. It led me to consider broadening my criteria for student inclusion in ACE protocols, and it led me to consider changes to the structure of the ACE advisement process. I did not know the direction these reforms would take until I had completed the plan, do, and study portions of the cycle.

Summary

The PDSA cycle provided me a vehicle for testing my hypothesis—that the AP enrollment of Black students would increase through individualized academic advisement. It afforded me the opportunity to test my change idea as an intervention within a sequential framework that yielded measurable results. Regardless of the outcome of this testing, the PDSA cycle is still an improvement cycle that lends itself to ongoing modification. As one cycle ends, a new one begins, making it an ideal vehicle for this improvement science research.

ETHICAL CONSIDERATIONS AND LIMITATIONS

Ethical Considerations and Limitations

Inequitable racial opportunity remains the central tenant of my work. While any effort to ensure equal access and opportunity for all students should not be controversial, there is a long and messy history surrounding the relationship between race-based equity and public education dating back to Brown v. Board of Education (1954) and even earlier. I believe that the current political climate of divisiveness at the national level has seeped down to the state and even local levels and has crept into discussion of matters that should be above partisan politics, namely

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school equity. Any race-based equity work runs the risk of being thrust into the spotlight of public debate. I hope to protect my work by being open and transparent about my methods and aims.

CHAPTER THREE

FINDINGS

Introduction to the Findings

The PDSA cycle serves as the framework of my improvement science study. PDSA cycles pair well with improvement science research because "Unlike traditional forms of research, this is localized theory, unique to a specific system, and narrowly focused on how to improve that system's outcomes" (Hinnant-Crawford, 2020, p. 153). This chapter communicates the findings of applying my intervention using a PDSA cycle. Specifically, it details the qualitative and quantitative data collected from applying individualized, counselor-led academic advisement following ACE protocols to rising Black 10th-grade students in the SSSD.

In order to present a holistic view of the Black-White AP participation gap, I incorporated qualitative and quantitative aspects into my research. Once yearly academic advisement meetings were completed, I conducted focus groups with Black students who received the ACE protocols intervention to elevate the voice of students in my research. My research attempts to minimize and eliminate the underrepresentation of Black scholars in AP courses. I felt it was vital to listen to the experiences and perceptions of Black students in order to humanize the data and hear firsthand accounts of how the intervention met or failed to meet their needs. In addition, I examined the longitudinal enrollment data of AP students, disaggregated by ethnicity and school. I felt that exploring historical data to track patterns over time was important. In the following sections, I present the story of the implementation of my intervention, reveal my findings, and discuss how these findings will tailor future iterations of intervention aimed at reducing the Black-White AP participation gap.

Implementation Journey

School counselors served as the central conduit of agency in my improvement science research. After conducting empathy interviews with the school counselors who would eventually lead yearly academic advisement with all rising 10th-grade students in the SSSD, I held trainings with the school counselors of FTHS, OTHS, and SCHS to familiarize them with the ACE protocols counselor script, mock schedule sheet, and follow chart (see Appendices A, B, and C). Much like the empathy interviews, counselor training sessions allowed me to emphasize the goals of my work and attempt to foster the trust and buy-in of those applying the intervention.

Once I trained each school's counselors, I provided them with a list of students who were eligible to receive the ACE protocol advisement. This list included each rising 10th-grade student (current 9th graders) that satisfied one or more of the eligibility criteria: 1) taking at least one honors course during the 2023-2024 school year or 2) earning grades of a B (80) or above in all their courses prior to academic advisement. It is important to note that counselors at FTHS began their advisement in November 2023, prior to the conclusion of the first semester. This meant that eligibility at FTHS would be based on earning grades of 80 or better in all classes across the first two six-week marking periods. In contrast, OTHS and SCHS conducted their 10th-grade advisement in January 2024, which allowed their eligibility to be based on grades earned across an entire academic semester. This timeline allowed OTHS and SCHS to base their academic advisement on a more complete picture of academic performance (all three six-week marking periods and final exams) rather than a snapshot of academic performance at a mid-point during the course. Schools within the SSSD have local control over the timeline for conducting IGP academic advisement sessions with specific grade levels. Therefore, the limited scope of grades

used at FTHS as an eligibility criterion was beyond my control. All three high schools finished academic advisement for rising 10th-grade students prior to March 2024.

During IGP academic advisement conferences, counselors meet with students and their parents or guardians to review present levels of academic performance, discuss academic and career goals, and attempt to plot a course of study for the student that aligns with post-secondary plans (SC DOE, n.d.). The state requires counselors to conduct yearly IGP meetings for students in grades eight through twelve. It is a local decision of the SSSD to solicit course requests for the following school year as a function of these meetings. I selected IGP conferences as the vehicle for implementing my intervention because it was the singular, yearly occurrence in the SSSD during which school counselors would discuss students' academic goals and course requests with each student at their respective schools.

In total, SSSD counselors advised 1,502 rising 10th-grade students. Of these, 1,162 met the eligibility criteria for the treatment (see Table 2). At the school level, FTHS conducted 540 IGP conferences with rising 10th-grade students, 406 of which included the ACE protocols treatment. OTHS conducted 518 IGP conferences with rising 10th-grade students, 391 of which included ACE protocols. SCHS conducted 444 IGP conferences, 365 of which included ACE protocols. Concerning ethnicity, 180 of the 1,502 10th-grade students (or 11.98%) in the SSSD identified as Black (see Table 3). Of these, just more than half (96) met the eligibility criteria for the treatment. At the school level, 24 of 57 Black rising 10th-grade students at FTHS met eligibility criteria and were included in the ACE protocols treatment. 43 of 83 Black rising 10th-grade students at OTHS met the eligibility criteria and were included in the ACE protocols treatment. 29 of 40 Black rising 10th-grade students at SCHS met the eligibility criteria and were included in the ACE protocols treatment.

Table 2

2023-2024 Rising 10th-Grade IGPs and Treatment Eligible Students

School	Number of rising 10th grade IGPs conducted	Number of rising 10th-grade students meeting eligibility criteria	Percentage of rising 10th-grade students meeting eligibility criteria
First Town High School	540	406	75.18%
Old Trail High School	518	391	75.4%
Stoney Creek High School	444	365	82.20%
Southern Suburban School District	1,502	1,162	77.36%

Note. This table shows that three-quarters of all 10th graders in the SSSD met eligibility criteria and received ACE protocols academic advisement during their IGP conference.

Table 3

2023-2024 Black Rising 10th-Grade IGPs and Treatment Eligible Students

School	Number of Black rising 10th-grade students	Number of Black rising 10th-grade students meeting eligibility criteria	Percentage of rising 10th-grade students meeting eligibility criteria
First Town High School	57	24	42.10%
Old Trail High School	83	43	51.80%
Stoney Creek High School	40	29	72.50%
Southern Suburban School District	180	96	53.33%

Note. This table shows that just under half of all Black 10th-grade students met eligibility criteria and received ACE protocols academic advisement during their IGP conference.

In mid-March 2024, after all three schools completed their IGP conferences, I began to gather and analyze AP course request data for the upcoming 2024-2025 school year. In addition, I tried to find related historical AP data that would help contextualize and support any trends I found regarding post-treatment AP enrollment requests. After completing this statistical analysis

of how my intervention affected the problem of practice—the Black-White AP participation gap in the SSSD—I turned my attention from quantitative to qualitative measures.

In late April 2024, I established focus groups at the SSSD's three high schools. Each focus group was comprised of six to eight Black 10th-grade students who were receiving the ACE protocol academic advisement treatment. Half of the focus group participants were selected randomly, using a random number generator to assign each criteria eligible student a value and sorting those values from least to greatest. The other half were selected through community nomination. I collaborated with a faculty facilitator at each site to collect nominations from participants they felt would be significant contributors to the focus groups and to assist in leading the focus groups themselves. Each faculty facilitator was a Black faculty member whom I felt had the essential rapport with students to establish trust and openness that would be vital to effective dialogue during the focus groups. These faculty facilitators also assisted in the initial contact with students and families, explaining the purpose of the focus group, distributing informed consent documentation, and liaising between students, families, and the researcher at each site prior to the focus group.

Focus groups were held over a two-day window. Each focus group was scheduled for 45 minutes. The faculty facilitators from FTHS and OTHS opted to schedule focus groups as an extension of the students' 30-minute lunch in order to minimize lost instructional time. To establish a welcoming environment, I provided the participants with pizza, sodas, and cookies. The faculty facilitators at FTHS and OTHS suggested that this would create a relaxed environment where participants might open up more, similar to a friendly discussion over lunch. The faculty facilitator from SCHS requested that their focus group be scheduled during the students' flexible learning experience (FLEX) remediation block at the end of the school day.

While this eliminated lost instructional time, it prohibited participants from attending FLEX sessions to complete make-up work or receive extra help from teachers. Similar to the other two focus groups, I provided sodas, snacks, and cookies to participants.

During the focus groups, the faculty facilitator introduced me to the participants and tried to frame my interest in student opinions as sincere. Further, faculty facilitators positioned me in a non-evaluative light and as someone who would maintain their confidentiality. Then, I introduced myself to students, explained the nature of my research, and informed them of their rights. I reemphasized the importance of confidentiality and explained that students' names and personally identifiable information would be redacted. I posed each of the five main questions listed in the focus group protocol document (see Appendix D), serving as the framework of the semi-structured focus groups. Both the faculty facilitator and I asked follow-up questions, when necessary, to elicit further elaboration. At the conclusion of the focus groups, I emphasized maintaining confidentiality of participant responses and thanked the participants for their time.

Once focus groups were complete, I began my analysis by reading over the transcripts generated by Otter.ai and listening to the accompanying audio. I employed a memoing process during this phase of the analysis, noting important quotations and concepts (Creswell & Poth, 2018). Next, I began winnowing the data by trimming the irrelevant portions from the transcript (Creswell & Creswell, 2018). I placed each remaining quotation in a spreadsheet, identifying the participant's school and saying each quote in a separate column. I then engaged in an initial cycle of open coding where I assigned each quotation to a broad category (Creswell & Poth, 2018). I performed this first-cycle coding by sorting 151 participant quotes into 61 open codes. After I coded all responses, I performed a second coding cycle to consolidate themes and responses into 11 broader categories, which I was still ultimately able to narrow into four refined focused codes.

This two-cycle approach allowed me to classify participant responses into themes and identify key quotes that would illustrate essential takeaways from the focus groups.

Lastly, I analyzed my study's quantitative and qualitative aspects together to identify complementary data. I selected a mixed-methods approach for this study because the collection of both qualitative and quantitative data would allow me to triangulate the data of my findings. The quantitative data communicated how many Black 10th-grade students signed up for AP courses after participating in ACE protocols academic advisement. It also contextualized the numbers across time. The qualitative data told the story of students' experiences receiving the treatment. It gave me anecdotal evidence about how Black students in the SSSD perceived AP courses, how academic advisement affected these feelings, and whether academic advisement motivated them to enroll in an AP course. Both approaches provided me with a holistic view of the treatment and process and better informed me about which aspects worked well and which aspects needed retooling for future iterations of PDSA cycles.

Fidelity of Implementation

Vital to the effectiveness of my study was ensuring that the process measures protected the integrity of my treatment. Process measures communicate "if the change idea that [I] introduced is producing the results as [I] predicted" (Perry et al., 2020, p. 107). In the case of this study, consistent counselor-delivered academic advisement was essential to measuring if academic advisement had the desired influence on the AP enrollment of students. If counselors do not communicate the benefits of AP and map out a personalized academic schedule, including an AP course, the fidelity of the treatment is compromised. Even significant variance from counselor to counselor and school to school could generate varying levels of effectiveness. To combat these threats to implementation fidelity, I provided training to all counselors leading

ACE protocols academic advisement sessions.

Further, I provided counselors with an ACE protocols counselor script (See Appendix A), a template for mapping student schedules with an AP course (see Appendix B), and a flow chart of the ACE advisement (see Appendix C) to act as safeguards to the process. Student responses during the focus group meetings also provided valuable insight into how these process measures trickled down to the student conferences. I also checked in with the counseling department chairs at each school throughout the IGP advisement window to gauge their perceptions of how the implementation of ACE protocols was going and offer any needed support. This support provided evidence that the treatment was administered effectively to achieve the aim of increasing the percentage of Black students enrolling in AP courses.

Implementation Challenges and Surprises

Despite considerable forethought and planning, the process was not without its share of challenges, successes, and surprises. The first noteworthy example occurred after school counselors' training before implementation. Two of the counselors at FTHS voiced apprehension about encouraging more students than usual to enroll in AP courses. They feared a negative, retributive response from the AP teachers for "filling their classes with unqualified students." Their fears were not founded in evidence from conversations with the AP instructors but rather stemmed from worries about what AP teachers might say if these students began to struggle and fail. The assistant principal overseeing counselors at FTHS reached out to me and requested a follow-up meeting to try to allay their fears and emphasize the importance of this work. I was quite surprised that their counselors were expressing anxiety about encouraging broader access to AP courses because I felt like I had established a sound rationale in advance of this work. Before the training and implementation phase, I held empathy interviews with school counselors—

including the two FTHS counselors who raised the concerns—and tried to establish the reasoning and research-based support for my work during SSSD high school counselor meetings. I learned that regardless of how clear I felt the rationale for intervention was, I would have to convince the counselors administering the ACE protocols treatment of the need for them if I wanted the intervention applied with fidelity. In response, I met with all the school counselors at FTHS for an hour a few days prior to the start of rising 10th-grade IGP conferences to engage in a dialogue about the need to provide access to AP students as vital preparation for college. I explained that these students had demonstrated readiness for advanced coursework by 1) having taken an honors course during their 9th-grade year or 2) having earned grades of 80 or more in all classes during the first semester. I even offered to support them and address any criticism that counselors might receive from AP teachers. Ultimately, all counselors expressed relief and agreed to implement the intervention as requested.

This conveyed a powerful message to me. I learned that counselors might be hesitant to widen the door to AP access if they feel it might open them up to attack from teachers if students struggle and fail. Throughout my research, I have been motivated by the knowledge that students from underrepresented subgroups—specifically Black students—are "three times more likely to earn a bachelor's degree if they even attempt an AP class in high school" (Davis et al.,2014, p. 32). Knowing that a student does not even have to pass an AP class but merely be exposed to the rigorous nature of the content and expectations to increase their likelihood of degree completion was a compelling motivator for intervention. However, I neglected to account for the social dynamics at play within a school. Counselors might encounter resistance and criticism from teachers because they are often held responsible for students' course selections and performance in a given academic track, even when they are not the ultimate decision-makers. This raises

questions about how school culture and relationship dynamics between faculty members affect student access to advanced coursework. While this subject is outside the scope of my study, it remains a worthwhile topic for further research.

Another unexpected aspect of the implementation was the direction student focus group responses took. I expected students' responses to center around academic advisement and the influence school counselors and the ACE protocols treatment had on their decision to pursue AP courses. Instead, I found that student decisions about taking an AP course had much more to do with notions of cultural acceptance and belonging than whether students were aware of the benefits of AP courses. I understood that academic decisions do not take place in a vacuum, free from the influence of culture and society. However, I vastly misjudged how influential factors like racial isolation and perceptions of otherness affect students. Students at all three high schools named "being one of the only Black kids in class" a major factor in their decision to pursue advanced coursework. While I hypothesized that this would be a consideration, especially given the SSSD demographics, I misjudged how strong and pervasive these feelings would be. The work of Kerr (2014), Taliaferro and DeCuir-Gunby (2008), and Tyson et al. (2005) emphasize the influence of factors like racial isolation, sense of belonging, and racial peer pressure; however, the bulk of the other literature I reviewed focused heavily on school and district level responses to the Black-White AP participation gap. This highlights the need for future researchers and reformers to not overlook the power of social and cultural influences on this problem of practice.

Overall, the implementation journey was essentially a successful one. I gathered and analyzed qualitative and quantitative data to construct a holistic view of the treatment and its effects. Process measures were in place throughout the study to protect validity. While there

were some unexpected circumstances, I was able to address them and ensure they did not undermine my PDSA cycle.

Presentation of Quantitative Data

In total, 1,162 of 1,502 (77.36%) rising 10th-grade students met the eligibility criteria for treatment in the SSSD (see Table 2). As a result, their school counselor applied ACE protocols academic advisement during their IGP conference. Each school applied the treatment to a percentage of rising 10th-grade students equal to or greater than 75.18%. The treatment was applied without regard to students' race.

Black students comprised 11.98% of all rising 10th-grade students throughout the SSSD. There were 180 Black rising 10th-grade students across the SSSD during the 2023-2024 school year, and their counts ranged from 40 to 83 students across the district's three high schools (see Table 3). Of the 180 Black rising 10th-grade students, 96 met the criteria to receive the ACE protocols treatment. The school-specific count of Black criteria-eligible rising 10th graders across the district's three high schools was relatively small, ranging from 24 students at FTHS to 42 students at OTHS. The corresponding percentage of Black rising 10th-grade students across the SSSD meeting the eligibility criteria was 53.33%. Individual schools possessed a percentage of Black rising 10th-grade students meeting the eligibility criteria between 42.10% at FTHS and 72.50% at SCHS.

By comparison, White students comprised 61.25% of all rising 10th-grade students throughout the SSSD. There were 920 total White rising 10th-grade students across the SSSD during the 2023-2024 school year, and their counts ranged from 266 to 353 students across the district's three high schools (see Table 4). Of the 920 White rising 10th-grade students, 775 met the criteria to receive the ACE protocols treatment. In juxtaposition to the count of Black

criteria-eligible students, the school-specific count of White criteria-eligible rising 10th graders across the district's three high schools was substantially larger, ranging from 226 students at OTHS to 304 students at FTHS. It is worth noting that the school with the smallest count of Black criteria-eligible students—FTHS—had the largest number of White criteria-eligible students, and the school with the largest number of Black criteria-eligible students—OTHS—had the smallest number of White criteria-eligible students. This highlights the varied demographic compositions of the schools in the SSSD and correlates to anecdotal feedback collected from counselors during pre-treatment empathy interviews that suggested the schools had differing needs based on their student population. The corresponding percentage of White criteria-eligible rising 10th-grade students across the SSSD (84.24%) was again substantially higher than that of Black criteria-eligible rising 10th-grade students. This gap mirrors the greater AP participation gap that this improvement science project attempts to address.

Table 4

2023-2024 White Rising 10th Grade IGPs and Treatment Eligible Students

School	Number of White rising 10th-grade students	Number of White rising 10th-grade students meeting eligibility criteria	Percentage of White 10th-grade students meeting eligibility criteria
First Town High School	353	304	86.12%
Old Trail High School	266	226	84.96%
Stoney Creek High School	301	245	84.39%
Southern Suburban School District	920	775	84.24%

Note. This table shows that most White 10th-grade students met eligibility criteria and received ACE protocols academic advisement during their IGP conference.

I collected AP enrollment data from student course requests entered during IGP conferences. Throughout the SSSD, 2000 students requested to take one or more AP courses

during the 2024-2025 school year (see Table 5). Not surprisingly, the SSSD followed the greater

national pattern of White AP enrollment far exceeding Black AP enrollment. Of the 2000 SSSD

individual AP enrollees, 104 (5.20%) were Black and 1,307 (65.35%) were White. Again, the

fact that the AP enrollment of White students was greater—with regard to both the number of

students and percentage of the total AP enrollment—than that of Black students was not

unexpected, but rather, it highlights the disproportionate participation this study seeks to address.

Table 5

2024-2025 Southern Suburban School District AP Course Requests by Ethnicity

Ethnicity	AP course requests Spring 2025	
	n	%
Asian	307	15.35%
Black	104	5.20%
Hispanic	171	8.55%
Other	7	0.35 %
White	1,307	65.35%
2 or More	104	5.20%
Totals	2,000	100%

When examined through the lens of individual schools, these trends hold true as well (see

Table 6). In each case, the number of White students enrolling in AP courses overshadowed the

number of Black students enrolling in AP courses. FTHS had more than 22 times the amount of

White AP enrollees (421) compared to the number of Black AP enrollees (19). OTHS had more

than 12 times the amount of White AP enrollees (433) compared to the number of Black AP

enrollees (34). SCHS had more than eight times the amount of White AP enrollees (453)

compared to the number of Black AP enrollees (51). These gaps are also observable when

comparing the percentage of Black and White AP testers to the percentage these groups comprise

of the entire student body. At FTHS, Black students comprise 3.07% of the AP enrollees and

9.53% of the school, compared to White students, who comprise 68.12% of the AP enrollees and

68.64% of the school. At OTHS, Black students comprise 4.67% of the AP enrollees and 15.33% of the school, as compared to White students, who make up 59.47% of the AP enrollees and 50.83% of the school. At SCHS, Black students comprise 7.79% of the AP enrollees and 9.84% of the school, compared to White students, who comprise 69.26% of the AP enrollees and 69.32% of the school. I find it striking that the percentage of White AP enrollees is eerily similar to or greater than the percentage of students at the school who are White. In contrast, the percentage of Black AP enrollees is roughly one-third or less than that of the percentage of students at the school who are Black. The notable exception was SCHS, which boasted the largest number and percentage of Black students in the SSSD.

Table 6

2024-2025 Southern Suburban School District AP Course Requests by School and Ethnicity

School	Ethnicity	Number of students enrolled in 1 or more AP courses by ethnicity	Percent of total AP enrollees	Total number of students by ethnicity	Percent of school by ethnicity
First Town High School	Asian	112	18.12%	163	7.62%
	Black	19	3.07%	204	9.53%
	Hispanic	42	6.79%	196	9.16%
	Other	3	0.48%	5	0.23%
	White	421	68.12%	1469	68.64%
	2 or More	21	3.39%	103	4.81%
FTHS Totals		618	99.97%	2140	99.99%
Old Trail High School	Asian	133	18.26%	188	9.80%
	Black	34	4.67%	294	15.33%
	Hispanic	81	11.12%	326	17.00%
	Other	2	0.27%	10	0.52%
	White	433	59.47%	975	50.83%
	2 or More	45	6.18%	125	6.52%
OTHS Totals		728	99.97%	1918	100%
Stoney Creek High School	Asian	62	9.48%	99	5.76%
	Black	51	7.79%	169	9.84%
	Hispanic	48	7.33%	153	8.91%
	Other	2	0.30%	4	0.23%
	White	453	69.26%	1191	69.32%
	2 or More	38	5.81%	102	5.94%
SCHS Totals		654	99.97%	1,718	100%

To contextualize this phenomenon, I examined the AP enrollment of the SSSD by ethnicity over time (see Table 7). In general, the number of Black AP enrollees increases between the 2019-2020 school year and the upcoming 2024-2025 school year. The only exception to this pattern was 2021, a year marked by the COVID-19 pandemic, perhaps explaining the slight reduction. The percentage of Black AP enrollees hovers around 5%, varying between a low of 4.7% and a high of 5.7%. While the percentage of Black AP enrollees in 2024-2025 will be down from 5.6% to 5.2%, the number of Black enrollees continued to grow, reaching an all-time high of 104. On the other hand, the number of White students grew steadily by 426 over the last five years, with most years demonstrating growth of more than 50 White students a year. Since my improvement science project aimed to increase the percentage of Black students who enroll in AP courses and lessen the Black-White AP participation gap, these district trends are particularly important as they are markers of outcome measures for my work.

Further, I examined the district's AP enrollments by school and ethnicity over time, and many of the same patterns were noticeable (see Table 8). Between the 2019-2020 and 2023-2024 school years, the percentage of Black students at the school was nearly twice that of Black AP enrollees. The only exception was at SCHS, where the gap has been shrinking since the 2022-2023 school year. Over that same period, the percentage of White students enrolled in AP courses continually exceeded that of White students in the student body at all three high schools. This highlights the overrepresentation of White students in AP courses in the SSSD as well as the ever-present Black-White AP participation gap.

Table 7

2020-2024 Southern Suburban School District AP Enrollments by Ethnicity

Ethnicity	AP enrollment Spring 2020		AP enrollment Spring 2021		AP enrollment Spring 2022		AP enrollment Spring 2023		AP enrollment Spring 2024	
	n	%	n	%	n	%	n	%	n	%
Asian	78	7.0%	92	8%	122	9.8%	185	12.2%	230	13.6%
Black	53	4.7%	49	4.3%	54	4.3%	87	5.7%	94	5.6%
Hispanic	60	5.4%	51	4.5%	71	5.7%	97	6.4%	133	7.8%
Other	6	0.5%	3	0.3%	5	0.4%	7	0.5%	5	0.3%
White	881	78.8%	905	79.1%	960	76.8%	1,078	71.2%	1,140	67.3%
2 or More	40	3.6%	44	3.8%	38	3.0%	61	4.0%	91	5.4%
Totals	1,118	100%	1,144	100%	1,250	100%	1,515	100%	1,693	100%

Table 8

2020-2024 Southern Suburban School District AP Enrollments by School and Ethnicity

First Town High School

Ethnicity	2020		2021		2022		2023		2024	
	% of AP Enrollees	% of School	% of AP Enrollees	% of School	% of AP Enrollees	% of School	% of AP Enrollees	% of School	% of AP Enrollees	% of School
Asian	6.9%	3.6%	5.8%	4.4%	8.7%	5.0%	12.2%	6.3%	14.2%	6.9%
Black	3.4%	8.5%	4.1%	9.2%	3.6%	9.8%	3.5%	10.0%	3.4%	9.8%
Hispanic	2.9%	6.0%	3.1%	6.5%	5.3%	7.2%	5.9%	8.7%	7.3%	9.1%
Other	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.2%	0.1%	0.3%	0.2%
White	82.8%	78.5%	82.9%	76.0%	80.1%	74.0%	74.4%	71.0%	69.9%	69.2%
2 or More	4.0%	3.4%	4.1%	3.8%	2.2%	3.9%	3.8%	3.9%	4.9%	4.8%

Old Trail High School

Ethnicity	2020		2021		2022		2023		2024	
	% of AP Enrollees	% of School	% of AP Enrollees	% of School	% of AP Enrollees	% of School	% of AP Enrollees	% of School	% of AP Enrollees	% of School
Asian	7.5%	5.0%	13.7%	5.7%	13.9%	6.7%	14.4%	7.8%	16.3%	8.4%
Black	6.5%	14.3%	4.7%	14.7%	5.3%	15.3%	7.8%	16.0%	5.7%	16.1%
Hispanic	8.2%	12.6%	5.8%	13.3%	6.0%	14.7%	8.2%	16.2%	9.3%	16.0%
Other	1.3%	0.5%	0.8%	0.5%	0.7%	0.5%	0.7%	0.6%	0.4%	0.6%
White	72.5%	63.0%	70.6%	60.7%	70.7%	57.1%	64.9%	54.1%	61.8%	53.0%
2 or More	4.0%	4.6%	4.4%	5.1%	3.4%	5.7%	4.0%	5.3%	6.5%	5.9%

Stoney Creek High School

Ethnicity	2020		2021		2022		2023		2024	
	% of AP Enrollees	% of School	% of AP Enrollees	% of School	% of AP Enrollees	% of AP School	% of School	% of AP Enrollees	% of School	% of AP School
Asian	5.1%	2.4%	4.5%	2.9%	6.3%	3.3%	9.8%	4.2%	10.2%	5.3%
Black	3.4%	10.1%	4.1%	9.6%	4.4%	9.7%	6.4%	10.1%	7.9%	10.2%
Hispanic	5.1%	7.2%	5.3%	7.7%	5.6%	7.9%	5.0%	8.4%	6.9%	9.1%
Other	0.1%	0.2%	0.0%	0.4%	0.2%	0.5%	0.4%	0.2%	0.2%	0.2%
White	86.3%	75.6%	83.5%	74.6%	79.7%	73.2%	74.1%	71.7%	70.0%	69.5%
2 or More	0.0%	4.5%	2.6%	4.8%	3.8%	5.4%	4.3%	5.4%	4.8%	5.7%

Since the treatment was applied explicitly to rising 10th-grade students, it is vital to examine the number of enrollments and corresponding percentages of Black and White rising 10th-graders in the SSSD (see Table 9). Of the 96 Black rising 10th-grade students who received the treatment, 14 enrolled in one or more AP classes during the 2024-2025 school year. That number represents 4.18% of all 335 rising 10th-grade AP enrollees. Of these 14 Black AP enrollees, 11 came from SCHS, two from OTHS, and one from FTHS.

Table 9

2024-2025 Southern Suburban School District 10th-Grade AP Course Requests by Ethnicity

Ethnicity	AP course requests Spring 2025	
	n	%
Asian	61	18.21%
Black	14	4.18%
Hispanic	31	9.25%
Other	1	0.30 %
White	208	62.09%
2 or More	20	5.97%
Totals	335	100%

To contextualize these numbers, I examined the SSSD's 10th-grade AP enrollments over the previous four years (see Table 10). Between 2020 and 2024, there has been small incremental growth in the number of Black 10th-grade students enrolling in AP courses, up to 12 in 2024 from six in 2020. Growth ranged from one to three additional Black 10th-grade AP students each year. The 2025 course requests saw similar growth, up two students from the year prior to 14 Black 10th-grade AP enrollees. By comparison, White 10th-grade AP growth was significantly larger and grew by much larger intervals. Between 2020 and 2024, White 10th-grade AP participation grew from 97 students in 2020 to 126 students in 2024. In 2025, that number will jump by 82 students to 208 White 10th-grade AP enrollees. Regarding the percentage of AP enrollment by ethnicity, Black 10th-grade AP enrollment had more volatility. It trended

downward from 2020 to 2023, from 5.08% to 3.94%, before jumping back up to 5.61% in 2024

and back down to 4.18% in 2025. The percentage of White 10th-grade AP enrollment declined

from 82.20% of enrollees in 2020 to just 58.88% in 2024. However, the percentage of White

10th-grade enrollees increased to 62.09%.

Table 10

2020-2024 Southern Suburban School District 10th-Grade AP Enrollments by Ethnicity

Ethnicity	AP enrollment Spring 2020		AP enrollment Spring 2021		AP enrollment Spring 2022		AP enrollment Spring 2023		AP enrollment Spring 2024	
	n	%	n	%	n	%	n	%	n	%
Asian	5	4.24%	13	8.90%	24	12.57%	43	16.93%	50	23.36%
Black	6	5.08%	6	4.11%	7	3.66%	10	3.94%	12	5.61%
Hispanic	5	4.24%	8	5.48%	9	4.71%	25	9.84%	19	8.88%
Other	0	0.00%	1	0.68%	3	1.57%	2	0.79%	0	0.00%
White	97	82.20%	113	77.40%	144	75.39%	165	64.96%	126	58.88%
2 or More	5	4.24%	5	3.42%	4	2.09%	9	3.54%	7	3.27%
Totals	118	100%	146	99.99%	191	99.99%	254	100%	214	100%

Growth continues to be a constant for the AP program in the SSSD. The total district AP

enrollment has grown each year since 2020. While the number of 10th-grade AP enrollees took

an unexplained dip in 2024—down 40 students from the year prior—AP enrollment across all

grades still grew by 178 students from 2023 to 2024. Next school year (2024-2025) looks no

different, with the number of Black and White AP students continuing to grow. Considering the

larger national trend, observing growth in the number of Black and White AP enrollees in the

SSSD is unsurprising. While expanding course offerings that prepare students for college is a

positive, the participation gap remains. Black students lag behind their White peers in terms of

total enrollments and representative percentage of the AP population. Next year, White students

will make up 62.09% of AP enrollees and 63.90% of all high school students in the SSSD (see

Table 11). Meanwhile, Black Students will make up just 4.18% of AP enrollees despite

comprising 12.01% of the SSSD's total high school enrollment. This highlights the need for

continued PDSA cycles to address and shrink the Black-White AP participation gap.

Table 11

2024-2025 Southern Suburban School District High School Total Enrollment by Ethnicity

Ethnicity	High School Total Enrollment	
	n	%
Asian	377	6.90%
Black	656	12.01%
Hispanic	623	11.40%
Other	20	0.37 %
White	3,491	63.90%
2 or More	296	5.42%
Totals	5,463	100%

Data Analysis Using Shewhart Charts

In order to examine whether my intervention was responsible for the increases in Black

AP enrollment, I analyzed enrollment data using Shewhart charts. "The Shewhart chart is a

statistical tool used to distinguish between variation in a process due to common causes and

variation due to special causes" (Provost & Murray, 2011, p. 190). Determining whether

variation in Black AP enrollment in the SSSD was reflective of common causes or special causes

was a crucial aspect of my data analysis. If Black AP enrollment increased but the Shewhart

chart revealed that it was due to common causes, the increase could be attributed to natural

fluctuation within the system. For example, increases could reflect a 10th-grade class with larger

than usual enrollment rather than the influence of my intervention. On the contrary, if the

Shewhart chart revealed that increases in Black AP enrollment were the result of special causes,

it could validate the effects of my intervention. Provost and Murray (2011) described Shewhart

charts as "the only tool that can ascertain whether a system is stable and therefore predictable, or

unstable and thus unpredictable" (p. 190). This determination of predictability made the Shewhart chart such an appealing tool in my work.

First, I examined the Black AP enrollment over time (see Table 12). At the district and school levels, all data points were plotted within the upper control limit (UCL) and lower control limits (LCL), represented by the dotted red lines (Provost & Murray, 2011). This indicates stable and predictable systems at the district and high school levels. This also implies that increases and decreases within the UCL and LCL boundaries are indicative of normal fluctuation due to common causes rather than the introduction of a special cause, specifically, my intervention. It is worth noting that there was a pattern of growth at SCHS. The percentage of Black AP enrollees increased each year between 2020 and 2024. The only years demonstrating a decrease in Black AP enrollment at SCHS was the decrease from 7.9% in 2024 to 7.79% in 2025. Additionally, the data from both years came very close to crossing the UCL (8.1%), which would have indicated an unstable and unpredictable system. This leads me to believe that Black AP enrollment numbers at SCHS are nearing a level of statistically valid improvement. This is an encouraging sign which prompts me to examine the implementation at SCHS more closely and see if there are factors that could be replicated throughout the district.

Then, I examined the disparity between the percentage of Black AP enrollment and the percentage of Black students by school (see Table 13). My intervention aimed to raise the percentage of Black AP enrollment to a level closer to the percentage of Black students at each school. This desired outcome would be represented by decreasing patterns and lesser X values because smaller percentages of disparity would indicate greater alignment between the percentage of Black AP enrollment and the percentage of Black students. Ideally, the norm would be 0.0% disparity, and there would be proportional representation; however, zero is

outside of the control limits, showing that proportional representation is not part of the norm and would result from a special cause or intervention. The data points of all three schools were plotted along or within the boundaries of the UCL and LCL. This reflects a stable, predictable system with variance reflecting the influence of common causes. It should be noted that the percentage of disparity at FTHS was plotted along the LCL (5.1%) during 2020 and 2021. In addition, the percentage of disparity at SCHS was plotted along the UCL (6.7%) in 2020 and just above the LCL in 2025.

The most significant finding of my Shewhart chart analysis was that a trend existed in the disparity data at SCHS. This trend is signified by the solid red line connecting points on the X Chart. Regarding Shewhart charts, data can be labeled as a trend when five or more consecutive points ascend or descend (Provost & Murray, 2011). SCHS displays such a pattern, steadily decreasing each year between 2020 and 2025 (6.7% in 2020, 5.5% in 2021, 5.3% in 2022, 3.7% in 2023, 2.3% in 2024, and 2.05% in 2025). This result is encouraging as it displays a trend towards proportionate AP representation at SCHS.

Table 12

X Chart of Black AP Enrollment by District and High School 2020-2025

X Chart Black AP Enrollment

System 2020 - SCHS 2025
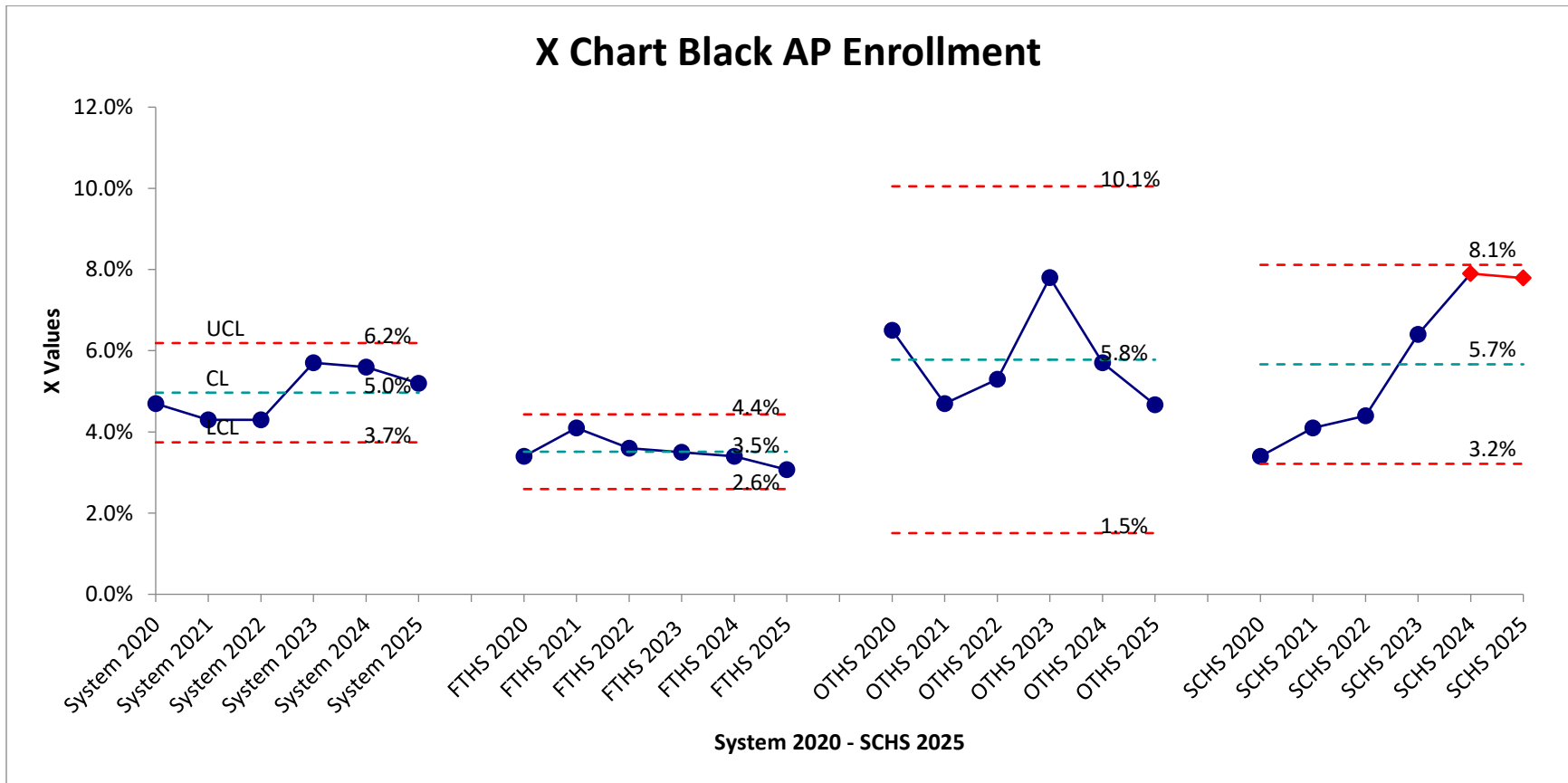
Note. This table shows the percentage of district and high school AP enrollees who are Black over time.

Table 13

Disparity Between Percentage of Black AP Enrollment and Percentage of Black Students by School 2020-2025
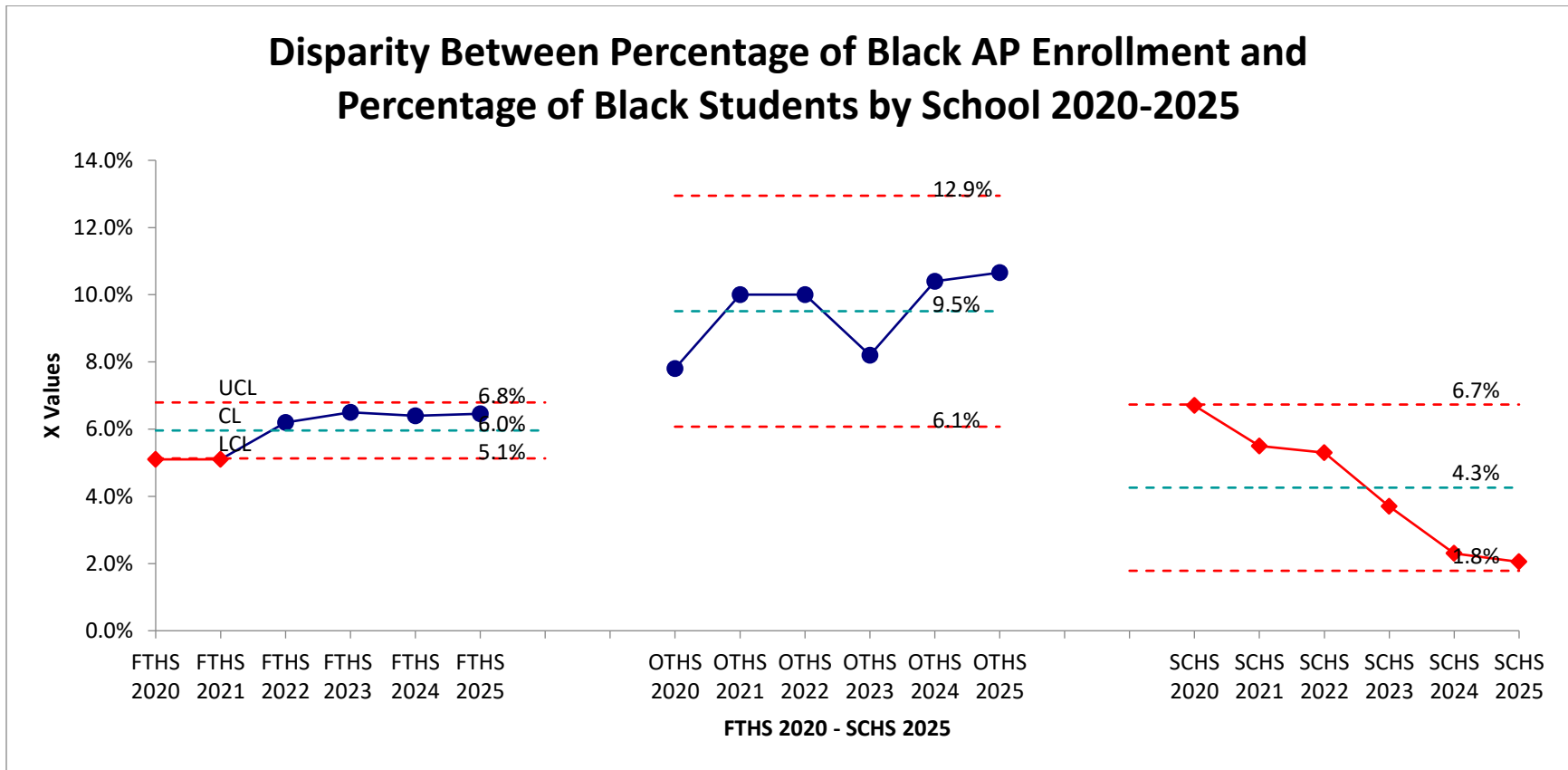
Note. This table shows the disparity of proportionate representation of Black students in AP course. SCHS displays a noteworthy trend in decreasing rates of disparity.

Presentation of Qualitative Data

A qualitative analysis of data collected from transcripts of my focus groups yielded 151 participant statements. I organized these quotations into 61 unique corresponding open codes. I grouped quotes highlighting topics ranging from the influence of peers, teachers, counselors, and family members on participants' decision to enroll in AP courses to the litany of uncomfortable moments and microaggressions encountered by participants in honors level courses, which deter them from pursuing additional advanced coursework. These initial codes helped me make sense of the sentiments and experiences described by the focus group participants and organize my thoughts about their narratives.

Through a second coding cycle, I organized these codes into 11 themes: adult influence, appeal of content, aspirational examples, benefits of AP, meritocratic perspective, othered status, peer agency, racial connectedness, racial isolation, rigorous perception, and social media influence. These themes helped me organize the codes and quotes about a common topic appearing with the greatest frequency. The themes appearing most often were racial connectedness (20 occurrences), benefits of AP (23 occurrences), adult influence (24 occurrences), and othered status (33 occurrences).

Codes and quotes falling under the racial connectedness theme centered around the need Black students expressed for additional Black peers and teachers in AP and honors courses and the unique cultural understanding and connection shared between Black students and teachers. Codes pertaining to the benefits of the AP theme included first cycle codes, which focused on the perceived advantages students gain from taking AP courses during high school, including GPA benefits, an improved work ethic, and a competitive edge in college admittance. Codes falling under the theme of adult influence emphasized the influence parents, teachers, and counselors

have in the course selection decision making process. It is important to note that despite the focus of the treatment centering on the influence of school counselors on AP enrollment, participants named their parents as having the most influence on the decision with a much greater frequency. This is insightful because it identified a potential focus for a future PDSA cycle, specifically including parents as more active participants in advisement to help them encourage their children. Codes dealing with the theme othered status detailed the many ways participants felt singled out, misunderstood, or held to different standards than their peers. Participants recalled incidents of enduring racist comments from their White peers and criticism for taking advanced classes from their Black peers. This code occurred most often; it denotes a central focal point in the focus group discussions and a turning point in the focus of my qualitative analysis. While I thought the focus group data would revolve around the influence of counselors and advisement, participant discussion identified a different need they deemed more pressing: addressing the outsider status Black scholars often feel in advanced courses that dissuades them from pursuing AP courses.

Upon an additional iteration of the review of the open codes, I consolidated these 11 themes into four focused codes: agents of influence, meritocratic perspective, perceptions of AP courses, and racial connectedness (see Figure 5). Each focused code encompasses one or more recurrent second-cycle themes and highlights the essential understanding derived from quotes within these thematic categories (see Figure 6). These codes act as tentpoles, framing the overarching ideas expressed by focus group participants, while participant quotations provide a more detailed account of their experiences.

Figure 5

Second Cycle Code Consolidation
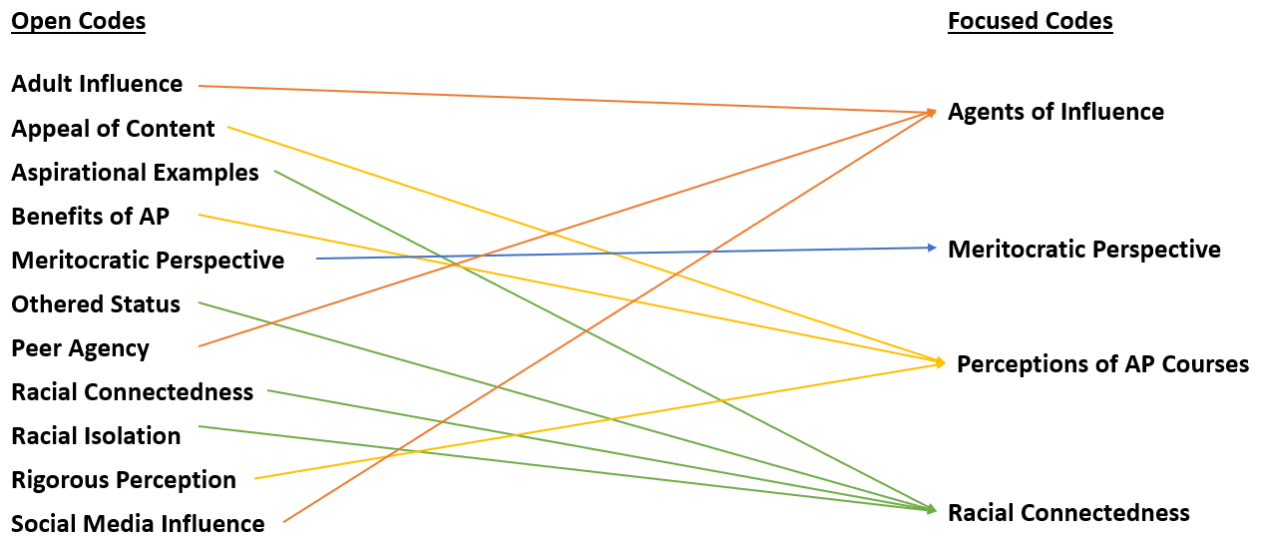
Figure 6

Focused Code Profiles

Focused Codes			
Agents of Influence	**Meritocratic Perspective**	**Perception of AP Courses**	**Racial Connectedness**
Quotes emphasize the role adults, peers, and social media play in influencing students' perceptions of AP courses and whether or not they choose to take an AP class.	Quotes describe students' feelings that access to AP courses is based solely on a student's work ethic and intrinsic motivation, free from the influence of race.	Quotes discuss students' awareness and perceptions of the benefits, content, and rigor associated with AP courses.	Quotes highlight the importance students place on feeling racially connected to other members of the classroom and how feelings of isolation and being othered negatively impact classroom experiences.

Agents of Influence

The focused code "agents of influence" includes the second cycle codes "adult influence", "peer agency", and "social media influence". Even though focus group participants attended three schools of varying size, demographics, and culture, participants described remarkably similar experiences regarding AP discussions with their school counselor. All

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participants possessed a rather rudimentary understanding of AP courses and their benefits, which they attributed to conversations with their counselors during academic advisement. Nearly all participants recalled their counselor discussing the importance of AP courses, describing how the student could work an AP course into their schedule, and providing encouragement to enroll in an AP course. One participant shared that "having a counselor tell you about [AP courses] can also boost your confidence. Like, when they are saying you are doing so good in these honors classes, you should probably do AP". Those who could not recall such an interaction with their counselor conceded that such a conversation may have occurred, and they simply may have forgotten. This was reassuring, considering counselor-led academic advisement regarding AP courses was the cornerstone of my treatment. However, it was disappointing to hear that not all quotations involving counselors were positive. One student recalled, "[My counselor] encouraged me to take some of that AP stuff, but other counselors are more about the downside. So, they make AP sound hard." Another student supported this sentiment by sharing, "instead of talking about all the negatives they could at least go into like more of the positives. I really got a lot of the negatives and not a lot of the positive." This reaffirms the influence that counselors have in the decision-making process. They can build a student's confidence, or they can scare away prospective students by making AP courses sound too rigorous and difficult.

Adult Influence. While I entered the focus groups assuming that counselors would be the focal point of discussion and act as the primary arbiters of academic advisement and scheduling, I quickly discovered that students' parents and peers played a much more significant role than I assumed. One student declared, "My parents are the most influential person in my AP decision-making." Multiple students in all three focus groups expressed similar sentiments. Some students shared that although their parents were a major factor in deciding to take the course, they do not

have adequate knowledge of the benefits and offerings of AP courses. One SCHS student suggested, "There should be crash courses for parents to take because my mom has said that like she doesn't know anything about high school, and she's learning along with me." The need to build parental knowledge about AP courses is clear, and this will be a goal in future PDSA cycle iterations of my work.

Peer Agency. Peer agency was a factor of influence that I underestimated prior to the focus groups. Participants made it very clear that the perception of their peers mattered in the AP decision making process. As one student explained,

> I also think it has a lot to do with your friends. All my Black friends will be like, 'Why did you take that class? It's dumb. If you have all your Black friends like 'That's stupid. Don't do that.' Then that's a racial factor that plays into it.

Participants' comments revealed that despite their current participation in honors classes, the perception of their same-race peers was a consideration when selecting courses. Their comments reflected a desire to fit in and a perception that AP courses made you stand out. Another student stated, "I know plenty of really smart Black kids that just decided not to push themselves. I feel like they could have passed the AP class with flying colors. They just decided not to." This highlights a larger challenge that academic advisement alone cannot address. Schools must be aware of the powerful influence of the perception of students' peers.

Social Media Influence. Another surprising agent of influence on students' AP decision-making was social media. Multiple students at both FTHS and SCHS expressed that they turn to social media and video streaming services as a resource for learning more about AP courses. An FTHS student explained, "I looked it up on like Tik Tok and YouTube to see like what the class is like. If it feels like overwhelming or something." Another student suggested that the

counseling office share AP information with students and families via video reels and Facebook. Their rationale was that schools must share information with students and families in places they are already looking. They warned, "I think emails don't do too well. Because for my parents, they have thousands of emails and they barely check them." It is crucial that schools communicate with families using whichever channels families are willing to listen to. If a TikTok reel can encourage a student or their parent to explore AP courses, this seems like a reasonable step for schools to take.

Meritocratic Perspective

The focused code "meritocratic perspective" did not include any additional second cycle codes. Student responses associated with this code reflected students' feelings that access to AP courses was not reflective of race but rather an individual's work ethic and motivation. Responses reflected a belief that admission to AP was based upon merit and was free from the influence of race. When asked, "How do you think race affects a student's ability to access AP courses in the SSSD?" nearly all focus group participants quickly expressed that they believed race did not affect a student's access. An SCHS student framed their perspective by stating, "We are a minority, but I feel like we have the same opportunities as every other student in the school." It was striking how quickly students responded with similar comments in each of the three focus groups. Repeatedly, students at each of the three high schools provided sound bites emphasizing work ethic as the primary factor determining a student's access to AP courses. One FTHS student stated, "I think it depends on your grades and your work ethic and whether or not you want to be in the class."

Students even projected a merit-based approach onto their teachers as well. One SCHS student observed, "I've realized that a lot of teachers look past color". Regarding being

recommended by a teacher for AP classes, another SCHS student stated, "when I got in, I think they saw my grades first and then they saw my face." Despite other stories of uncomfortable moments, isolation, and exclusion they experienced in high school, focus group participants expressed that they perceived that their teachers and especially their counselors, acted objectively when determining which course a student should take next.

The faculty facilitator at OTHS noticed this theme of student responses that emphasized notions of fairness and work ethic determining access and provided her perspective for their belief. She noted that the participants in the focus groups were already high-achieving students who had satisfied the inclusion criteria of taking an honors class or having grades of 80 or greater in all classes. She hypothesized that the viewpoint these comments reflected were notions that reinforced a pathway toward advanced classes that these students were already on and that similar perspectives might not be shared by other students who did not meet the inclusion criteria. Some student openly attributed their perspective to values instilled by their parents. Regardless of the point of origin of this outlook, it was a strong recurrent theme that contextualized the lens through which students viewed their access to AP courses in the SSSD.

Perception of AP Courses

The focused code "perceptions of AP courses" includes the second cycle codes "appeal of content", "benefits of AP", and "rigorous perception." Responses associated with this code reflected students' knowledge of and feelings about AP courses. Participants communicated a general awareness of AP courses, but their depth of knowledge surrounding what AP courses were like and how they benefited students varied greatly.

Rigorous Perception. It became clear during the focus groups that if students knew nothing else about AP, they were aware that AP courses were challenging and they helped

prepare them for college. Students often used the words "hard" and "rigorous" to describe AP courses. One FTHS student explained that AP courses were "a lot more work and a lot more stressful." In many cases, students expressed that this rigorous reputation was a major deterrent to their desire to take AP courses even though they viewed the challenge of these courses as a critical reason they prepared students for college.

Benefits of AP. Student commentary on the benefits of AP focused primarily on their knowledge of how AP courses gave students a competitive edge in college admissions and led to success in college. Students expressed an understanding that AP courses offered college credits and GPA benefits in high school. One participant observed that AP courses "help prepare you for the kind of classes you'll be taking [in college]. It just gives you like a little insight of what is to come." Although students expressed general agreement that AP participation was advantageous, some observed that those benefits were limited if they were not aligned with a student's specific goals. One SCHS student stated, "I also think you have to take the right AP courses that go towards what career you want to do." Another student conceded that AP courses might be helpful but not necessary, stating, "I definitely don't think it's necessary, but it's definitely beneficial towards how you look at life and like having a strong work ethic." Participants expressed broad agreement that AP courses held benefits for college-bound students.

Appeal of Content. One notable drawback to AP courses, cited by focus group participants, was the lack of engaging course offerings. Several students were critical of the lack of variety in AP offerings. They voiced a desire for more college credit options in specialized classes like marketing, anatomy, and medicine. Some participants were critical of the offerings available to them in the 10th-grade in the SSSD, namely AP Art History, AP Computer Science, AP European History, and AP Music Theory. One student remarked, "Something like AP

European History, how would that help my future of having a medical career." Criticism like this is more indicative of local district decisions than issues associated with AP courses. In general, students had a balanced perspective of AP courses. They weighed the benefits of AP courses as a college preparation against the rigor and engagement offered by the course.

Racial Connectedness

The focused code "racial connectedness" includes the second cycle codes "aspirational examples", "othered status", "racial connectedness", and "racial isolation." Student quotations pertaining to this code emphasized the importance students placed on feeling racially connected to other classroom members. Additionally, student responses associated with this code may also call attention to the negative impact students feel when they experience feelings of isolation and otheredness.

Aspirational Examples. Students stressed the importance of feeling connected to another member of the classroom, regardless of whether that person was a peer or the teacher. They shared numerous examples of feeling seen, understood, and validated by other members of the classroom that "get it." One FTHS explained, "If your teacher is like the same race as you, they have probably gone through the same things that you're going through. So, they'll be relatable. They'll probably try to make you feel more comfortable than any other teacher." Several students echoed this sentiment, although most students could only recall having one Black teacher in their entire schooling. The exposure of Black to students to Black teachers can play a significant role in their achievement (Kettler & Hurst, 2017). Black students can feel seen, included, and successful when they experience Black teachers as role models. The rarity of this connection prompted students to question why there were not more Black teachers, especially in advanced classes in the SSSD. An OTHS student observed "I rarely see Black teachers…so I can

only imagine if there were any Black teachers teaching AP math classes." Another student added that the only Black teachers they knew taught electives. Such observations highlight the need for Black students to see and interact with Black teachers, especially in advanced courses where students' isolation may cause them to question their sense of belonging. Students at OTHS and SCHS acknowledged they appreciated having a Black assistant principal that they could talk. Students communicated that the desire to see and interact with Black teachers and administrators goes beyond a want for connection and reflects a deeper need for examples of successful professionals that look like them.

Othered Status. Otheredness was the second cycle code that appeared most often, 33 times. Students at all three schools seemed keenly aware that they were in the minority in the SSSD. They recalled several examples of feeling like they were on the outside looking in. Several students described an inability to relate to their peers in mostly-White honors classes. One student explained "I don't really get it. Everybody can be laughing and I just look around and I just don't really get it." Others recalled uncomfortable moments where their teachers and classmates look at them for reaction whenever anything to do with Black people, history, or culture is mentioned. An OTHS student shared "It always looks like one Black person represents all Black people." They mentioned feeling constantly reminded of their Blackness, especially in advanced classes. A FTHS student explained, "I heard some kids talking about me. They were like, 'She's always around all the white people.' and stuff like that. And they're like 'Why is she always in the White classes?' ". Similarly, two students recalled being called "Whitewashed." Black students' experiences being othered by peers and teachers make it harder for them to feel accepted in honors and advanced classes. This emerged as a key obstacle to increasing Black AP enrollment in the SSSD.

Racial Connectedness. When prompted during the focus groups to identify actions that could help their school and district increase the number of Black students enrolling in AP courses the most common response was to make sure Black students had people in class they were comfortable with. Just as participants were able to identify the spaces where they felt uncomfortable, they were also able to extol the positives of environments where they felt accepted and connected. "You work better with people like you" said one OTHS student. Another explained "As long as you have somebody in class—someone you can struggle *with*— you are not alone." Students described having stronger bonds and better experiences in classes where they felt they had connections.

Racial Isolation. Conversely, students described feeling estranged and awkward in situation where they lacked these connections. Some students shared that they are less likely to ask questions and speak up in class without a same raced peer in class. These feelings extended beyond academic matters. A FTHS student described being denied the simple joy of having someone else to talk about hairstyles and clothes with because "nobody gets it" in their White dominated classes.

Qualitative Conclusion

As a result of focus groups and subsequent coding cycles, my qualitative focus shifted from validating the effectiveness of academic advisement as a means of increasing Black AP enrollment to identifying the social dynamics that encourage and discourage Black students from taking AP courses. The goal remained the same, however, the approach pivoted from being focused on procedures and protocols to a focus on students' feelings and perceptions. Student narratives made it very clear that feelings of belonging and connection were a more significant influence than academic advisement. Listening to students' experiences humanized this data. It

provided perspective on why students that demonstrate a readiness for AP coursework would choose not to, even when they are aware of the benefits they stand to gain.

Measuring the Change Idea

The change idea of this improvement science project was to increase the number of Black students enrolling in AP courses in the SSSD through counselor-led academic advisement. AP specific academic advisement, following ACE protocols, was the treatment applied to criteria eligible students to achieve the goal of increasing Black AP enrollment. Although this treatment was not limited to Black students, the goal of this improvement science project remained increasing the number of Black AP enrollees as a means of reducing the Black-White AP participation gap. Driver, balancing, and outcome measurements helped assess the successfulness of my change idea.

Driver Measure Data

Driver measures provide in-process feedback about how the intervention is working (Hinnant-Crawford, 2020). Participant feedback during focus groups provided real-time data on how the ACE protocol academic advisement sessions were going. I was able to validate that students and counselors were engaging in uniform conversations about the benefits of AP courses and how a student could work an AP course into their schedule for next year. This driver measure provided validation to the fidelity of intervention implementation. I was able to affirm that criteria eligible students at all three high schools were being exposed to the ACE protocols. However, student comments also revealed that this academic advisement was not one of the most compelling factors in their decision to take AP courses. Participant comments revealed that the influence of students' parents and the opportunity for racial connection—or lack thereof—were more persuasive factors.

Balancing Measure Data

As their name indicates, balancing measures reflect balance in the system, specifically, that the introduction of a treatment does not introduce unintended consequences that disrupt the balance of said system (Hinnant-Crawford, 2020). My balancing measures consisted of analyzing the AP enrollment data disaggregated by ethnicity to observe if there are any changes which might indicate unintended effects of the treatment. From 2024 to 2025, Black 10th-grade AP enrollment increased by 2 students. This was a desired outcome of the treatment. However, nearly every other ethnic subgroup experienced greater numerical enrollment (see Table 14). Asian 10th-grade AP enrollment increased by 11 students. Hispanic 10th-grade AP enrollment increased by 12 students. The "Other" subgroup—consisting of American Indian, Alaska Native, Native Hawaiian, and Pacific Islander students was the only group demonstrating less numerical enrollment growth than that of Black students, growing by a total of 1. White 10th-grade AP enrollment increased by 82 students. 10th-grade students reporting 2 or more primary ethnicities grew by 13 students. Black students experienced the second smallest gain in AP enrollment while White students experience the largest growth. Similar patterns hold true when looking at AP enrollment across all grades. Black AP enrollment increases by 10 students from 2024 to 2025, while White AP enrollment increased by 167 students.

Table 14

Southern Suburban School District 10th Grade AP Enrollment Changes by Ethnicity Spring 2024 and Spring 2025

Ethnicity	AP course enrollment change Spring 2025 n
Asian	+11
Black	+2
Hispanic	+12
Other	+1
White	+82
2 or More	+13

Earlier in Chapter 2, I expressed concern that applying the treatment to all students regardless of ethnicity, while potentially beneficial to all recipients, might fail to reduce the participation gap even if it leads to increases in Black AP enrollment. Balancing measure data appears to confirm this fear. White students experienced the single largest yearly AP enrollment increase at the 10th-grade and whole school levels after the treatment was applied across all years data was tracked for this study. The treatment appears to have encouraged both Black and White AP enrollment but with different effect sizes. This serves as evidence that the treatment may have caused an imbalance in the system that was counterproductive to the aim of narrowing the Black-White AP participation gap. However, comments from participants also revealed that academic advisement alone is not likely to close the gap. It appears that a holistic approach addressing academic and social factors is needed.

Outcome Measure Data

Outcome measures lag behind the intervention and provide a summative assessment of the effectiveness of the change idea (Hinnant-Crawford, 2020). Outcome measures communicate if the change idea was successful. My change idea was to increase the number of Black AP

students through the application of counselor-led academic advisement using ACE protocols. My outcome measure was the count of Black AP enrollment. After applying the treatment, the total number of Black AP students in the SSSD increased from 94 students in 2024 to 104 students in 2025. The outcome is the same when examined at the 10th-grade level. The total number of Black 10th-grade AP students in the SSSD increased from 12 students in 2024 to 14 students in 2025. In simplest terms, the change idea yielded the desired outcome: an increase in the number of Black AP students.

Patterns

The most significant emergent pattern of my data reflects the accelerated and sustained growth of White AP enrollment. Each year between 2020 and 2025, White AP enrollment grew by an average of 85 students. Over that same period, Black AP enrollment grew by an average of 10 students a year. Following the application of the treatment, the number of White AP enrollees grew by 167 students. This was the largest single year of growth between 2020 and 2025. The next largest single year of White AP enrollment growth occurred from 2022 to 2023. That year saw the number of White AP enrollees grow by 118 students, which was still 49 fewer students than the year the treatment was applied.

The growth rate of Black AP enrollment does not compare, even when factoring in the smaller portion of district enrollment Black students represent. The largest year of AP enrollment growth experienced by Black students in the SSSD occurred from 2022 to 2023. That year, Black AP enrollment increased by 33 students. However, the post-treatment enrollment of Black students—an increase of 10 students—was noticeably and disproportionately smaller than that of White students. Asian, Hispanic and Multiethnic subgroups all experienced larger post-treatment enrollment growth than Black students. The trend of Black AP enrollment growth lagging behind

White AP enrollment growth is not surprising, considering it echoes the ever-present Black-White enrollment gaps seen across the nation since the creation of the AP program. Nevertheless, it is disappointing that the treatment failed to yield more significant gains for Black students when it appears to have prompted substantial growth for other subgroups.

Focus group data reflects a recurrent theme of Black students experiencing a lack of comfort and connection in advanced classes. This has strong implications for AP enrollment. Black students expressed experiencing being othered by White and Black peers for participating in honors and AP courses. While I do not have qualitative data to support the claim that White students do not share these uncomfortable experiences and, therefore, enroll in honors and AP courses with greater frequency, this is a topic worth exploring in future PDSA cycles. At the very least, one can conclude that the adverse effects of underrepresentation and isolation experienced by Black students in advanced courses deter AP enrollment.

Theory of Improvement Reflection

Working collaboratively with principals and school counselors, I developed a theory of improvement, which leveraged specific drivers to cause system changes addressing the Black-White AP participation gap in the SSSD. I believe that my drivers and change ideas had the desired effect on the problem of practice. By working closely with counselors and principals, I was able to leverage my primary and secondary drivers of school policy shifts and academic advisement improvements. Early in the process, I met individually with each principal in the SSSD to review AP data and make them aware of the Black-White participation gap in the district and their school. As a result, principals supported me in working with counselors by holding a four-hour deep dive training, where we explored the district's academic program of studies and reviewed the admission requirements for each high school course. This provided me

an opportunity to align counselor expectations for academic pathways that lead to AP courses. Further, empathy interviews and training sessions held with high school counselors allowed me the opportunity to ensure that counselors clearly understood the goal of this work and essential steps in applying the treatment, namely following ACE protocols to advise criteria-eligible students. This culminated in a successful application of the treatment and, ultimately, an increase in the number of Black AP students throughout the SSSD.

Primary drivers distinguish the location within a system where improvement work is needed (Perry et al., 2020). Through data analysis and empathy interviews with school counselors, I identified school policy shifts as the primary driver in my theory of improvement. Considering AP enrollment is tied to a system function, addressing access barriers within the system seemed logical. Early in my work, I used my role as a district leader to collaborate with principals to reduce restrictive prerequisites for both AP courses and honors courses that lead to them. In addition, I met with all district counselors to align advisement and encourage broad AP participation at all schools.

Next, I focused my approach on the secondary drivers, which articulate the actions necessary to achieve the desired change (Perry et al., 2020). I identified changing academic advisement as essential to increasing Black AP enrollment. I believed that an intentional and consistent approach to student advisement--with a specific focus on AP courses--would promote broader Black AP enrollment. Drawing on the work of Taliaferro and DeCuir-Gunby (2008), I sought to help students operationalize their rights to access AP courses by ensuring that academic advisement included clear and consistent communication about 1) the benefits of AP courses, 2) how an AP course could fit into their schedule, and 3) encouragement to take an AP course now or in the future.

These drivers culminated in the creation of my change idea: targeted academic advisement following ACE protocols. Counselors conducted 10th-grade IGP conferences at all three SSSD high schools following ACE protocols for criteria-eligible students. My drivers and change idea grew the number of Black students taking AP courses but failed to reduce the Black-White AP gap. In the next chapter, I evaluate my theory of improvement in light of my findings.

Limitations and Lessons Learned

To facilitate my improvement science work, I used a singular iteration of the recursive PDSA cycle. PDSA cycles are intended to be iterative processes by which a researcher plans, executes, studies, and adjusts their research for each successive cycle (Bryk et al., 2017). Now that I have completed one cycle of this work, I have reflected on the outcomes, challenges, and lessons learned. Although I am satisfied with the fact that ACE protocols contributed to the increase of Black AP enrollment in the SSSD, I feel that my treatment failed to narrow the Black-White gap significantly. The gap between the percentage of AP enrollees who were Black and the percentage of enrollees who were White narrowed by 1.63% from 2024 to 2025. However, the gap between Black and White 10th-grade AP enrollees widened by 4.64% from 2024 to 2025. As I reflected on the effectiveness of my treatment through the lens of the PDSA cycle, I considered all of the unexpected outcomes and limitations of my work.

I encountered surprises and challenges as early as the planning stage. I did not foresee the hesitancy to encourage broader participation in AP courses on the part of some counselors, most notably at FTHS. A few reluctant counselors expressed worries that students might struggle and that counselors would be blamed for misplacing students into rigorous academic pathways for which they were not ready. I addressed this through open dialogue with all the counselors at the school about the potential benefits for students. However, their initial reluctance caused me to

question the fidelity with which they applied the treatment. It caused me to question whether these counselors would actively encourage students to try AP or provide perfunctory compliance. Such reluctance had a profound influence on the outcomes for students at FTHS.

During the do phase, I encountered the biggest challenge to my thinking surrounding this work. Before holding focus groups, I expected student responses to focus primarily on their experiences during academic advisement. My review of the relevant research identified counselor-led advisement as one of the most influential drivers for increasing Black AP enrollment. After conducting focus groups, however, I found that social influence was a powerful dynamic that I failed to acknowledge fully. Participant commentary revealed that while counselors play an important role in the decision to take AP courses, the relative social connection or isolation Black students feel plays a vital part as well. Later, during the study phase, my analysis of focus group data highlighted the importance of student experiences with isolation, connectedness, and otheredness. Learning the importance of these social factors greatly influenced how I approached the act phase. I plan to consider additional drivers that address these social dynamics in future iterations.

Improvement science focuses on creating productive changes to cause improvement (Bryk et al., 2017). The PDSA cycle allowed me to use drivers to evoke positive change. Even though my drivers may have resulted in relatively small increases in the numbers of Black AP students in the SSSD, the potential impact for these individual students remains profound. Each Black student in the SSSD who takes an AP course is more likely to earn a bachelor's degree by taking the course (Davis et al., 2014). It is also important to note that increases in Black AP enrollment can reduce racial isolation experienced by students in these courses and, in turn, lead to additional enrollment. Perhaps this could create a domino effect where the yearly growth of

AP enrollment causes additional growth in the subsequent year. I hope to refine my drivers and levers in each iteration of the PDSA cycle as I continue this improvement science work.

Spreading Changes

The act stage of the PDSA cycle determines which elements of the change idea should be adopted, adjusted, or abandoned (Perry et al., 2020). This stage is vital in determining the next steps for future application. Based on my first cycle findings, I have identified three key elements for adjusting the intervention: 1) expanding the scope of ACE protocol advisement to include rising 11th- and 12th-grade students, 2) measuring the influence of counselor-led advisement through pre- and post-intervention surveys, and 3) adding a student-led AP recruitment session.

Limiting the treatment to 10th-grade students was more a function of maintaining a practical implementation timeline rather than the optimum target audience. IGP conferences begin as early as September and continue through March. High schools have local control over the order in which they conduct grade-level IGP conferences. By the time I received IRB approval, rising 10th-graders were the only remaining grade level with multiple AP offerings that had yet to begin IGP conferences at all three high schools in the SSSD. In future iterations of the PDSA cycle, I plan to expand the treatment to include rising 11th- and 12th-grade students. Only 4 AP courses are available to 10th-graders in the SSSD: AP Art History, AP Computer Science, AP European History, and AP Music Theory. Two of these offerings—AP Art History and AP Music Theory—have a narrower scope recruitment scope, as the district encourages prospective students to have a background in the arts. Additionally, some focus group participants called attention to the lack of Black representation in the content of AP European History and stated that this was not an attractive choice for students looking to make cultural connections with the

content. Options open to 11th- and 12th-grade students are much more diverse. Upperclassmen may pursue a variety of AP offerings in English, math, science, and social studies. Moving forward, I will adjust future treatments to include rising 11th- and 12th-grade students.

Measuring the effectiveness of counselor-led advisement sessions following ACE protocols is another emergent consideration prompted by the act stage of the PDSA cycle. While I was able to gather anecdotal feedback from focus group participants about their academic advisement experience, I could not quantify the treatment's effectiveness other than through the outcome measure of AP enrollment. Providing surveys to families that have participated in advisement following ACE protocols could help determine if the intervention affected key factors in AP recruitment. Such surveys could help determine if academic advisement increased families' awareness of the benefits of AP courses. Likewise, they could provide feedback about the degree to which interactions with school counselors influenced students' decisions to take an AP course. Additional quantitative data gathered through the inclusion of surveys could only strengthen the validity of my work.

The potential adjustment I am most passionate about making is the inclusion of student-led elements of recruitment. Focus group responses highlighted the power of peer influence. One respondent suggested providing Black students with the opportunity to hear from successful Black AP students as a way to increase Black AP enrollment throughout the district. They theorized that a panel discussion between prospective and current AP students—including Black AP students—would be a compelling experience. They felt that hearing directly from students about the rigor of the work and the social challenges associated with underrepresentation could motivate students to try AP courses.

Adding student panels as a means of AP recruitment is of particular interest to me because of my previous experiences with this work. As a former principal, I held yearly assemblies focused on AP recruitment, but adults always led these events. In addition, I promoted peer-to-peer conversation about AP courses by purchasing special t-shirts for all the current AP students and encouraging prospective students to seek out conversations about AP with their fellow students wearing AP shirts. Reflecting on this approach, I feel it was too passive to ensure meaningful student-led conversation about AP. By adopting the suggestion of student-led panel discussions, I can ensure these peer-to-peer interactions occur. I believe that this would be a meaningful way to leverage the power of peer influence for AP recruitment.

In attempting to spread changes beyond the initial context of the first cycle of my work, I need to be mindful of the scope of adjustments. I must be careful to avoid adding too many changes simultaneously that I dilute my focus and compromise the fidelity of my work. An essential strength of the PDSA cycle is that the recursive nature of the multi-cycle approach allows for ongoing adjustments over time. This allows me to adjust my change idea to meet the new challenges in each successive cycle.

Conclusion

The first PDSA cycle of my improvement science work successfully increased the number of Black 10th-grade AP students and the overall number of Black AP students throughout the SSSD. Regardless of other outcomes, this work was meaningful to the students who elected to take an AP course as a result. However, White AP enrollment also grew at the 10th-grade and overall district levels. So even though my counselor-led academic advisement following ACE protocols ensured Black criteria-eligible students were exposed to the benefits of AP courses, shown how an AP course could fit into their schedule, and encouraged to take an AP

course now and in the future, the intervention failed to reduce the Black-White AP participation gap. While I did not achieve my overarching aim of addressing the problem of practice by reducing the gap, I gathered valuable data that can help me refine my approach in future cycles. In the next chapter, I will explore the implications of my study for future research, practice, and policy.

CHAPTER FOUR

REFLECTIONS AND IMPLICATIONS

Introduction

The purpose of this study was to address the Black-White AP participation gap using

improvement science. Since the beginning of the AP program in 1952, Black students have had

lower AP enrollment numbers than their White peers (Klopfenstein, 2004b; Schneider, 2009).

Despite awareness and documentation of the gap, the problem persists some 70 years later.

Efforts by states and the College Board to address the problem have led to increases in Black AP

enrollment but have failed to significantly reduce the gap (Klopfenstein, 2004b). This is

especially concerning considering AP courses' vital role in college preparation and admissions.

Following the larger national trend, White AP enrollment significantly outnumbers Black AP

enrollment in the SSSD. Likewise, Black students are underrepresented in AP courses relative to

the percentage of the student body they represent. I attempted to lessen the Black-White AP

participation gap in the SSSD by initiating counselor-led academic advisement following ACE

protocols to promote AP enrollment. I aimed to increase the percentage of Black 10th-grade

students enrolling in an AP course by 5.8% during the 2024-2025 school year.

Like previous attempts to reduce the gap, my intervention successfully increased the

number of Black students taking an AP course in the SSSD. However, it failed to reduce the

Black-White AP participation gap significantly. Throughout my study, Black AP enrollment

nearly doubled from 54 students in 2022 to 104 in 2025. However, White AP enrollment also

saw significant gains, growing from 955 students in 2022 to 1,307 students in 2025. These

collective gains represent opportunities for more than 400 additional students to experience the

most rigorous college preparation the SSSD has to offer. This study also produced valuable

participant insight regarding the influence of adults and racial connections on Black students' decisions to take AP courses. While my work did not reduce the Black-White AP participation gap, it does have implications for interventions to increase Black AP enrollment.

In this chapter, I will reflect on my findings and the potential for my study to be applied in other schools and districts to increase Black AP enrollment. Through the framework of the improvement science process, I will highlight key moments and challenges and reflect on how my perspective evolved throughout this study. I will discuss how my theory of improvement played out over the course of one PDSA cycle and my suggestions for change in future iterations. I will examine my aim and findings to analyze the broader implications of my work on the Black-White AP participation gap. Based on my findings, I will contextualize my work within the greater body of research on the Black-White AP participation gap and propose recommendations for practitioners and decision-makers. Lastly, I will conclude with a call to action for others to continue the vital work of increasing the AP participation of Black students.

Reflection on the Improvement Science Process

When I began this study, I selected an improvement science design because of its practical approach to prompting change. "Improvement science is a methodological approach built on pragmatism and science that uses disciplined inquiry to solve [problems of practice]" (Perry et al., 2020, p. 27). The improvement science design and the PDSA framework allowed me to test my change idea and theory of improvement to promote systemic change in the SSSD. This has been a memorable and eventful journey that has seen me move from empathy to action. Prior to engaging in improvement science work, I was aware of a clear need for action to address the Black-White AP participation gap in the SSSD. I was painfully aware that Black students were underrepresented in the premier college preparation provided by the SSSD, but I was

unsure where to begin. Improvement science gave me a blueprint and framework for constructing intervention and diving headlong into the work of improvement.

This process was marked by several key moments, including crucial conversations with SSSD principals, empathy interviews with counselors, establishing ACE protocols, and focus groups with students who participated in the process at all three schools—these key moments served as benchmarks in the development, application, analysis, and adjustment of my change idea. They aided me in understanding the unique needs at the site level in the SSSD and crafting a comprehensive intervention meant to address the Black-White AP participation gap in the SSSD.

Challenges throughout the implementation journey were minimal. I was often encouraged and surprised at the positive reactions of those included in my work. Principals, counselors, and students all were grateful to learn that someone was looking at this problem of practice and trying to address it in the SSSD. The greatest challenge was addressing the initial counselor hesitance at FTHS. Counselors at FTHS shared concerns about fear of criticism or reprisal from teachers for "placing" unprepared students in their AP classes. I was able to reframe this conversation to be focused on the students. I explained that AP participation has benefits for students, even those who do not pass the AP exam, and that Black students had the potential to be three times more likely to earn an undergraduate degree by even attempting an AP course (Davis et al., 2014; Kerr, 2014). Reframing the conversation to be focused on the benefits for students rather than the concerns of adults was able to overcome this challenge. Again, challenges concerning my work were minimal, and most individuals involved exhibited positivity towards the goal and gratitude for the attempt to promote change.

While I learned a great deal throughout this process, one insight stood out above the rest. For Black students in the SSSD, the decision to enroll in AP courses is not based solely on academics. Social influence plays an important role. Black students weigh the academic merits along with factors like racial isolation, feelings of otheredness, and the perceptions of their peers. The legacy of underrepresentation in AP courses comes with a social cost not often noticed or acknowledged by educators. This vital insight not only reshaped my understanding of the problem of practice but also prompted key changes that will propel my work into a second PDSA cycle.

The iterative nature of the PDSA cycle is central to my improvement science work. It allowed me to research and plan my approach to the problem, apply my change idea, and study the results (Hinnant-Crawford, 2020). Perhaps the most important aspect of the PDSA cycle is the act stage, where findings from one cycle launch into practical changes for a second cycle. This recursive practice enables me to constantly adjust my treatment to better address the problem. My treatment increased the number of Black students enrolled in AP courses. However, my qualitative findings revealed there were a multitude of additional factors that might prompt greater enrollment. During the study stage, I identified important themes in my qualitative data that warranted further exploration: agents of influence and racial connectedness. Unlike traditional research, which often culminates with findings and suggestions, improvement science applies those findings and suggestions in each successive cycle. As I transition from the initial cycle to the second cycle, I can tailor my approach to increase my effectiveness.

Throughout this work, my perspective evolved to view the problem of practice in more holistic terms. Initially, I focused on leveraging drivers in my direct sphere of influence as a district leader. I saw academic advisement as a means to address potential knowledge deficits

that might hinder AP enrollment among Black students. Likewise, consistent processes among counselors could ensure all capable students were encouraged to participate in AP, regardless of race. Consistent processes could reduce the influence of personal bias that might lead to inequitable levels of encouragement students receive to pursue AP courses. I hypothesized that I could increase Black AP enrollment in the SSSD through strategic academic advisement sessions by having school counselors follow a routine protocol for communicating the benefits of AP, showing students how an AP course could fit into their schedule, and encouraging students to take an AP course. Focus group feedback indicated that these ACE advisement sessions were beneficial but failed to address other compelling social factors influencing Black students' decision to take AP courses. Recognizing how significant influence factors like racial isolation, peer perception, and feelings of otheredness are was a watershed moment in my work. I came to realize that I could not compartmentalize my problem of practice in terms of policy and procedure alone. Refining academic advisement only addressed part of the problem. I needed to incorporate solutions that not only increased students' knowledge and awareness of AP courses but also made them feel more comfortable in these classes. Focus group participants shared numerous examples of how their decision to take AP courses was not limited to purely academic factors. Therefore, a more holistic solution would not be limited to academics alone but would also consider the social dynamics that play a part in the decision-making process.

Similarly, focus groups caused another major shift in my perspective regarding the influence of adults. Much of my thinking about the influence of counselors on AP enrollment was shaped by the research of Crumb et al. (2021), Davis et al. (2014), and Ohrt et al. (2009). These researchers highlighted the role of counselors as being uniquely tailored to promote greater AP enrollment due to their proximity to students and advisement. Counselors were an

essential element of my intervention and the most significant focus of my work, aside from the students. However, focus group feedback emphasized the importance of parents in the decision-making process regarding whether or not to take AP courses. Several focus group participants identified their parents as "the most influential person" affecting their AP decision-making. They elaborated that counselors factored into decisions regarding AP but more as a source of information and encouragement. Participant responses identified parents as having a large stake in the actual decision. While I was not surprised by the critical role that parents play, I was surprised to hear that participants felt their parents were not well informed about AP courses, especially so considering parents are part of IGP meetings. Participants explained that their parents were peripherally aware of AP courses as challenging and offering college credit. However, they lacked a depth of knowledge about what the courses were like for students. One participant suggested an AP "crash course" for parent education so that parents could understand how to advise their children regarding AP courses better. This marked another pivotal moment in my study. I recognized that moving forward, I would need to factor in greater parent education on the benefits and importance of AP. In future PDSA cycles, I plan to hold AP parent information sessions before IGP conferences to better inform and involve parents in the advisement process.

Theory of Improvement Revisited

A theory of improvement expresses the actions one takes to fulfill an aim in route to addressing the overarching problem of practice their work attempts to solve. My end goal is to lessen the Black-White AP participation gap in the SSSD by increasing the number of Black students taking AP courses. To achieve this goal, my theory of improvement focused on increasing Black AP enrollment in the SSSD through improvements to the academic advisement

process. Specifically, I applied an intervention of counselor-led academic advisement to 10th-grade students following ACE protocols, which actively encourage participation in AP classes.

In light of my findings, I believe that ACE protocols successfully increased the number of Black students enrolled in AP courses. As a result of applying of my theory of improvement, the number of Black and White students in the SSSD increased. The application of ACE protocols did not reduce the AP participation gap because it also prompted growth in AP enrollment among White students. On the surface, an intervention that does not shrink the gap seems like a failure. However, I consider any intervention that contributes to the growth of AP participation among students—especially underrepresented populations, like Black students—a success.

Having completed one PDSA cycle, I would amend my theory of improvement to address the vital role that social connectedness and parent influence play in students' decisions to take AP courses. Focus group feedback made it clear that Black students contend with issues of acceptance and connection in AP courses. Participants reported feeling othered by teachers and peers in honors courses. They perceived that these experiences would be magnified in AP classes, where they would likely encounter fewer students who looked like them. I believe it is vital to address these powerful notions of acceptance and connection by including the input and experiences of Black students who have been successful in AP courses in the advisement process. I will consider the addition of peer advisement through panel discussions with previous AP students—specifically including Black AP students—as an additional means of increasing Black AP enrollment.

Additionally, I would like to modify my theory to emphasize the role of parents in the AP advisement and decision-making process. Like the aforementioned social connectedness

refinements, focus group feedback highlighted the need for greater parental involvement in the process. Even though parents are invited to IGP conferences, many cannot attend. Focus group participants also revealed that even parents who actively participate in academic advisement with their children may not know enough about AP courses to contribute effectively to the AP advisement and decision-making process. In future PDSA cycles, I plan to address this by holding AP information sessions for families before IGP conferences to build a foundational knowledge of AP courses and their benefits for students.

My theory of improvement focused my efforts on the most effective site for improvement within the system: academic advisement. The theory also effectively ensured consistent implementation throughout the district through a uniform set of advisement protocols. This structure ensured a targeted approach within the sphere of my influence and fidelity of implementation across the system. While refinement in future cycles is necessary, I am satisfied with how my theory of improvement guided the structure of my intervention through the first iteration.

My change idea—targeted, counselor-led academic advisement—seems sustainable over time, although refinement is needed. The change idea must expand to provide a more holistic approach to advisement than ACE protocols alone. I plan to adjust the change idea to a more comprehensive advisement model, including parent information sessions, peer panels with current and former AP students, and counselor-led academic advisement.

Aim Revisited

My theory of improvement was predicated on achieving the aim of increasing the enrollment of Black 10th-grade students in the SSSD by 5.8% in the 2024-2025 school year. My larger goal was to increase the number of Black students enrolling in AP courses in the SSSD to

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reduce the persistent Black-White AP participation gap. I set out to achieve this aim through policy shifts and improvements to academic advisement, which came together as my change idea: counselor-led, AP-focused academic advisement following ACE protocols.

In terms of achieving my aim, I was successful. When I first set about this improvement science project, I reviewed the AP enrollment data from the spring of 2022. That year, Black students comprised 11.62% of the SSSD high school population but just 4.34% of AP enrollment. I believed that if I could increase the percentage of Black AP enrollment closer to the percentage of Black high school enrollment, I would increase the total number of Black students in the SSSD exposed to AP coursework as vital college preparation in route to closing the Black-White AP participation gap.

In 2022, there were 1,243 AP enrollees across the SSSD. If the percentage of Black AP enrollment were equal to that of Black high school enrollment in the SSSD (11.62%), then there would be 144 Black AP students. In reality, this number was more than twice the actual Black AP enrollment in 2022, which was 54 students. Seeking an incremental gain, I targeted increasing Black AP enrollment to 5.8%, half the percentage of Black high school enrollment in 2022. This percentage (5.8%) of the 1,243 AP students equated to a target aim of 72 Black AP students in 2025. After applying my intervention, Black AP enrollment in the SSSD increased to 104 students in 2025. It is worth noting that prior to the application of my treatment in the spring of 2024, Black students saw enrollment gains in 2023 and 2024, some of which may be attributed to early work in creating policy shifts and eliminating restrictive requirements that acted as barriers to AP enrollment.

My work has the capacity to cause meaningful change in addressing the Black-White AP participation gap in the SSSD and holds the potential for effecting greater change in other

districts across the state. Even though this PDSA cycle did not reduce the gap, it increased AP enrollment among Black students. This is a significant outcome, given the benefits AP exposure holds for students. Each successive cycle can potentially increase Black AP enrollment, and future modifications to my intervention may still yield growth that eventually shrinks the participation gap.

Further, my first cycle findings lead me to believe that additional gains can be made through more comprehensive advisement, specifically a model that includes sessions for parents, peer-led panel advisement, and counselor-led AP advisement. I hope that continued modification to the AP advisement process will continue to grow the number of Black students in AP classes. More Black students in AP classes should, in turn, lead to greater connection among Black AP students and hopefully an increased sense of belonging. PDSA cycles provide the platform for continued refinement of this theory. However, additional research on the effects of academic advisement on Black AP enrollment is warranted.

Implications of Findings

When I consider my findings, I see hope for addressing the Black-White AP participation gap. Even though this PDSA cycle did not narrow the gap, it increased the number of Black students enrolled in AP courses and provided critical insight into the need for holistic intervention that addresses the social as well as academic aspects of this problem. The nature of improvement science gives me hope that an answer can be found, if not with this cycle, then perhaps with the next or the one after that. As long as there are people willing to study the gap and try new approaches, there is hope that this problem of practice can be fixed through improvement science.

Implications for Similar Intervention

My work has strong implications for others considering similar interventions. It has been well established that the AP participation gap is a longstanding issue that exists at the national, state, and local levels (Davis et al., 2014). College Board has acknowledged this gap and the inequitable outcomes it causes for Black students for years (Kettler & Hurst, 2017). As a result, there is no shortage of attempted interventions to reduce the gap. At the outset of my work, I was largely influenced by the work of Crumb et al. (2021), Davis et al. (2014), and Ohrt et al. (2009), all of whom focused on the role of counselors in addressing the participation gap. My findings support that targeted, counselor-led advisement can increase Black enrollment. However, perhaps more significantly, my findings reveal that this approach fails to address the powerful social factors that influence AP decisions associated with race.

To be clear, my findings do not discount the importance of counselors in addressing the AP participation gap. They remain a crucial part of the equation. Counselors proved vital to increasing students' awareness and knowledge of AP courses and encouraging students to challenge themselves in these rigorous classes. Counselors act as vital advocates by helping students plan their academic pathways and navigate school policies and prerequisites that might otherwise stand between a student and their academic goals. In the SSSD, they are the only district employees officially charged with advising students on the courses they should take in preparation for college or careers. Their responsibility to provide academic guidance positions them so uniquely in relation to the problem of practice that their importance cannot be overstated. However, my findings also revealed that ACE protocols advisement alone addressed the participation gap through purely academic means.

Possibly, the biggest implication my work has for others considering similar interventions is that it affirms the need for a holistic approach. Focus group participants acknowledged that

counselors increased their knowledge of AP courses. However, they also indicated an urgent need to address the social factors—like acceptance, isolation, and otheredness—that influence a student's decision to take an AP course. My findings support the need for intervention that addresses issues of belonging and connection for Black students. Taliaferro and DeCuir-Gunby (2008) expressed a similar sentiment, stating that "relationships are essential to helping African American students feel as though they belong, particularly in the AP classroom" (p.168). Addressing this need will be a focal point for future PDSA cycles in my work. I recommend that others attempting to increase Black AP enrollment or reduce the Black-White participation gap consider addressing issues of belonging in their interventions as well.

Implications for Educational Leaders

The experience of combating a vexing problem of practice with improvement science has profoundly impacted me as an educational leader. Over the last 13 years, I have served in official leadership capacities, directly overseeing curriculum and instruction at the school and district levels. During that time, I have been painfully aware of the failure of the SSSD to address the Black-White AP participation gap adequately. While others within the district and I have tried to encourage greater Black AP enrollment, our loan efforts were often negligible because we lacked a systemwide, research-based approach to the problem. Improvement science provided a comprehensive, strategic framework for addressing the problem in an iterative, cyclical process. Each successive cycle of improvement science not only possesses the potential to make headway in addressing the problem of practice but can also offer clues to necessary modification and adjustments for increased efficiency. Such a powerful tool for prompting change should be in the toolbox of every educational leader.

The findings of my work highlight the importance of collaboration with school counselors. While my intervention did not reduce the participation gap, it did prompt sizeable AP enrollment growth for Asian, Black, Hispanic, and White students, as well as students identifying as two or more primary ethnicities. The only ethnic subgroups that did not grow as a result of my intervention were American Indian, Native Alaskan, and Pacific Islander (collectively reported as "Other"). The total populations of these subgroups were so small that their numbers typically remained in the single digits at each SSSD high school. This does not discount the importance of increasing AP enrollment among these populations but clarifies that their numbers are so small that growth is limited. Nevertheless, my findings support that counselor-led academic achievement correlates with increased AP enrollment. The significance of the role of counselors in growing AP enrollment—especially among underrepresented students—cannot be overstated for educational leaders. While all school and district personnel are charged with "cultivating college aspirations, school counselors are particularly poised" to discuss student plans and aspirations (Crumb et al., 2021, p. 2). Their proximity to student advisement and scheduling positions them as the most influential staff member regarding AP enrollment. Additionally, "research suggests that the rigor of an African-American or Latino student's academic tracking significantly correlates to his or her postsecondary planning and success" and I argue that no faculty members are closer to this work than counselors (Ohrt et al., 2009, p. 59). Educational leaders cannot afford to neglect the relationship between counselors and students when it comes to AP courses. Leaders must intentionally align advisement practices and ensure their application with fidelity. Autonomy concerning student advisement allows for inequitable outcomes for students. At best, some but not all students will receive the information and encouragement they need to pursue AP courses. At worst, inconsistent advisement can allow

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personal and systemic bias to deter capable Black students from receiving crucial preparation for college.

My work also emphasizes the need for educational leaders to maximize the connection Black students experience between their peers, instructors, and schools. Klopfenstein (2004a) used the phrase "cultural congruence" to describe a school environment that reflects the racial environment of a student's home environment (p. 119). Klopfenstein (2004a) posited that such representation and alignment contributed positively to educational outcomes for Black students. My work highlights Black students' need for racial connection in AP classes. Educational leaders must take action to create these optimal learning environments if they want to encourage greater Black AP enrollment. Encouragement and information from faculty members—even counselors—alone is not enough. Educational leaders are responsible for ensuring Black students experience connection and a sense of belonging in AP courses. This prompts broader reflection on the learning environment to examine whether Black students experience high expectations, receive encouragement and praise, and encounter teachers and other students who look like them in advanced classes. To do this, leaders must engage directly with the Black students in their schools. Leaders must hear firsthand accounts of how Black students experience school. These factors reflect school culture and require leaders to dedicate significant attention and time to address them properly. Such work requires vulnerability and an open mind on the part of educational leaders to examine if all of the students in their care genuinely experience the best their school has to offer.

Implications for Equity and Justice

In simplest terms, the Black-White AP participation gap is an equity issue. Black students' access to a premier college preparation lags behind that of their White peers and has

since the beginning. Despite decades of awareness and intervention, the problem remains. In order to ensure equitable outcomes for all students, with regard to AP enrollment, schools must engage in a departure from the norm and actively pursue new courses of action. Dunn et al. (2021) suggest that mere educational reform alone is too passive a means to disrupt the status quo and generate timely, meaningful change. Instead, they propose a radical reimagining of the education system with equity at the heart of reconstruction. Further, they call on non-Black people to shift from being mere allies to coconspirators in the work of equity and justice (Dunn et al., 2021). I believe that meaningful change in addressing the AP participation gap requires such a radical reimagining and reconstruction.

This study benefited the students of the SSSD and had profound implications for equity and justice. It increased Black AP participation and grew AP participation as a whole. Even though my work sought to reduce the Black-White participation gap specifically, preparing greater numbers of students for success in college through AP participation cannot be considered a failure. In addition, my study brought crucial attention to the need for connection and belonging that Black students experience in AP classes. Improvement science has allowed me not only to identify these factors but also to provide me with a means for disrupting the systems that cause them and rebuilding them with equity and justice in mind.

There are implications for teachers and counselors as well. My study demonstrates counselors' influence in equipping students and parents with the vital funds of knowledge and the encouragement necessary to make well-informed decisions about AP courses. While counselors were the focal point of my work, all educators possess a tremendous potential to encourage Black students to pursue AP courses. Focus group feedback made it clear that students are influenced by the adults in their lives: parents, counselors and teachers. Our approach as

educators must be to unify the message students hear to be one of encouragement and support. Black students contend with many factors that can serve as barriers to AP enrollment. We must ensure that counselors and teachers are aware of these factors and are not just allies but coconspirators in the work of dismantling these barriers and abandoning the status quo in favor of a reimagined system where all students receive our best instruction and support.

If we do this, not only will students benefit but the entire community as well. When we support and encourage all students to reach their greatest academic potential, we produce graduates who are responsible, productive citizens who are well-prepared for success in college and their careers. Such citizens are the lifeblood of a strong, thriving community. To achieve this goal, we must ensure that equity and justice are the cornerstones of our schools, which produce each new generation of community members.

Contributions to Research and Practice

My study contributes to the greater body of research surrounding the Black-White AP participation gap, specifically how counselor-led academic advisement protocols can increase Black AP enrollment. There is plentiful research documenting the participation gap, but there is less research exploring how counselors affect the gap. Previous studies by Crumb et al. (2021), Davis et al. (2014), and Ohrt et al. (2009) emphasized the influence of counselors regarding AP courses. However, each of these studies had additional considerations or focused on AP achievement rather than AP participation. Since there are benefits for Black students associated with simply taking an AP course, I felt focusing on AP participation rather than exam scores was imperative. My study uniquely adds to the body of research by focusing on counselors but, more specifically, how they influence Black AP enrollment through consistent advisement processes.

My study also explores how social factors, such as racial connection, isolation, and otheredness, influence AP participation. While not the initial focus of my study, focus group findings emphasized the importance of these factors on Black students considering AP enrollment. This finding supports claims made by previous researchers, such as Taliaferro and DeCuir-Gunby (2008), which stressed that Black student's sense of belonging and connection to their school environment influenced AP participation. Although my study does not make a conclusive determination of how to address these social issues, it stresses the need for future intervention and research to consider and address these factors.

Recommendations for Additional Research

My research highlights the need for consistent counselor-led, academic advisement protocols to increase Black AP enrollment. While my research supports the claim that counselor-led advisement increases AP enrollment, this intervention did not reduce the Black-White participation gap. I do not believe that this outcome undermines the vital role counselors play in increasing Black AP enrollment but rather underscores the need for intervention to address social and academic considerations. Such a comprehensive approach will be the focal point of the next PDSA of my work. Concerning further related research, my recommendations include examining 1) the relationship between taking accelerated high school coursework in middle school and Black AP enrollment, 2) the effectiveness of classroom guidance and group counseling at prompting Black AP enrollment growth, and 3) how the presence of Black AP teachers influences AP enrollment.

AP courses can sometimes serve as capstone academic experiences for students, coming at the end of an academic progression of sequential coursework. For example, in the SSSD, students cannot enroll in AP Literature or AP Language unless they have completed the

prerequisite courses: English I, English II, English III, and English IV. Similarly, an SSSD student cannot enroll in AP Calculus unless they have passed Algebra 1, Geometry, Algebra 2, and Precalculus. In both of the previous examples, the student would need to have taken the first course of the academic sequence in middle school or doubled up on their academic load by taking more than one academic course of the same content area in one year to take an academic class. It has been my experience that most students accelerate their academic pathway by participating in middle school rather than taking a double course load in high school. This makes participation in high school courses during middle school an important gatekeeper for access to AP courses. Kanno and Kangas (2014) observed how restricted curricular choices hinder AP enrollment for English Language Learners. That same logic could apply to Black students if their earlier curricular choices are similarly restricted. Examining the participation of Black middle school students in high school courses could prove insightful in determining if there are obstacles to Black AP enrollment that exist before high school even begins.

My study focused on individualized academic counseling during yearly IGP conferences. However, classroom guidance and group counseling may offer counselors additional influential approaches to AP advisement. Perhaps shifting the environment of advisement to a group orientation may address some of the social considerations that inhibit broader Black AP enrollment. The counselor-focused studies of Davis et al. (2014) and Ohrt et al. (2009) influenced my study and incorporated some level of group-specific counseling. Investigating whether individual or group counseling settings yield larger gains in Black AP enrollment is worth further consideration.

Another topic worthy of exploration in future research is the influence of Black AP teachers on Black enrollment. Kettler and Hurst (2017) observed that "limited research exists on

the connection between minority teachers and number of minority students taking advanced classes in high school" (p. 6). Focus group participants emphasized the importance and influence of Black faculty with whom they shared a sense of connection. This supports the claim that cultural congruence between the home environment and the learning environment is essential for Black students (Klopfenstein, 2004a). Further research to examine this relationship could have powerful implications for increasing Black AP enrollment and ultimately narrowing the Black-White participation gap.

Recommendations for Practice

In order to make gains in closing the participation gap, educators and policymakers must reject the status quo in favor of practices that ensure equitable enrollment in AP courses. This means reimagining current practices and policies and attempting interventions that grow Black AP enrollment. My study examined how counselor-led academic advisement could increase Black AP enrollment, and additional findings have implications for making gains in subsequent PDSA cycles. My findings also suggest additional practical applications for increasing Black AP enrollment, namely using peer panel advisement and holding AP parent information sessions to encourage greater Black participation.

Focus group feedback identified peer perception and influence as important considerations among Black students when deciding whether to take an AP course. Some participants suggested that hearing directly from students who looked like them and shared their experiences would help navigate the social dynamics of taking AP courses. To that end, I suggest hosting peer panel discussions with prospective AP students. Allowing a panel of current AP students—including Black AP students—to share their experiences could prove to be a powerful intervention in promoting Black enrollment. While counselors, parents, and teachers can share

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what they believe the AP experience will be like, there is a stronger implicit credibility for students who have personally experienced AP courses. Hearing firsthand accounts of student experiences may allay some of the fears and worries about AP classes. I intend to incorporate this intervention in addition to counselor-led academic advisement in future PDSA cycles and encourage other educational practitioners and decision-makers to follow suit.

Similarly, focus group feedback highlighted the need to better inform parents about AP courses before course selection during academic advisement conferences. Several participants named parents as the most influential person in their AP enrollment decisions. These participants suggested schools host parent information sessions, where parents could learn about AP courses and their benefits by meeting with counselors and AP instructors. This is another intervention I plan to incorporate into future PDSA cycles of my study. I believe that this intervention could help build the critical funds of knowledge necessary for families to make well-informed decisions regarding AP courses, which could significantly impact Black AP enrollment.

There are innumerable approaches to addressing the problem, but the most important thing is for educational leaders and decision-makers to take action. Meaningful change will not come without educators acknowledging the gap and intervening.

Conclusion

In a cultural context where diversity, equity, and inclusion are vitally needed, these concepts are also scrutinized by some in society. One needs to look no further than the recent repeal of affirmative action to observe that historical, societal protections intended to promote equitable outcomes for Black Americans are under attack (Sherman, 2024). Even the way race and history are presented in schools is under fire. The removal of AP African American Studies in South Carolina and more than a dozen other states signifies a prioritization of appeasement

over a dedication to ensuring Black representation and voice in schools (Alfonseca, 2024). This makes work and interventions that allow Black students to experience successful outcomes in high school and college crucial to the continued pursuit of equity. Exposure to college-level rigor and content during high school through AP courses provides these outcomes to Black students. The fact that the gap between Black and White students in accessing AP courses has remained for more than 70 years highlights the pressing need to develop a response that helps Black students catch up to their White peers. The answer to addressing the Black-White participation gap is not a solution that causes Black enrollment to increase while White enrollment decreases. Instead, I seek a solution where the proverbial rising tide lifts all boats. I believe that academic advisement delivered by competent, caring counselors is the key to connecting Black students with the knowledge and encouragement needed to grow AP enrollment and, in turn, achieve the most successful academic outcomes. The findings of my study reveal that overhauling academic advisement alone is not enough, but it is progress.

Improvement science is essential to address the AP participation gap and generate meaningful change and reconstruction in education. I use the term reconstruction with great intentionality because I believe that reform does not go far enough. We must disassemble systems that have failed our students and rebuild and reconstruct systems where equitable outcomes for all learners are at the heart of our decision-making. Improvement science provides the platform for such rapid systemic change driven by scholarly practitioners living in the work.

In the case of my study, I identified a problem of practice afflicting the SSSD: a persistent Black-White AP participation gap. As a scholarly practitioner, improvement science allowed me to move from simply empathizing with students underserved by the gap to acting on their behalf. I set an aim of increasing Black AP enrollment by 5.8% by the 2024-2025 school

year to combat the gap. Improvement science allowed me to test my theory that intentional, consistent counselor-led academic advisement would increase Black enrollment and lessen the gap. When my findings revealed that my intervention did not lessen the gap but increased Black AP enrollment, improvement science provided me with an avenue to immediately launch into another intervention cycle to address the problem from a new vantage, testing other takeaways and findings from the first cycle of my work. I plan to engage in a second PDSA cycle in 2025, examining how the inclusion of peer panel discussions with current and former Black AP students, along with ACE protocol advisement, affects the gap in the SSSD.

Equitable AP participation matters because the benefits for participants matter. Black students deserve equitable participation in AP courses that prepare them for successful outcomes in high school and college. They deserve more than allies that offer passive platitudes of support. They deserve coconspirators invested in their success and leveraging their agency for change. I hope that my study is reflective of this commitment and outcome. I am dedicated to closing the participation gap in the SSSD. I hope that some aspect of my work is transferable to other districts and educators seeking similar change.

APPENDICES

Advanced Course Enrollment (ACE) Protocols

Counselor Script:

--I'd like to take a few minutes to discuss how taking an AP course is an important way to prepare for college while you are still in high school. AP courses offer students a lot of benefits now—during high school—and later should you attend college. The benefits of AP participation include:

- The potential for a higher GPA in high school

- The ability to stand out in the college admissions process

- Being more likely to enroll in additional schooling after high school

- Being more likely to enroll in a 4-year college

- Being more likely to have a higher GPA in the first year of college

- Reducing your likelihood of dropping out of college

- Being more likely to earn a college degree

- The potential to reduce the time and cost for earning a college degree

- And being more likely to graduate from college within 4 years

    (Kettler & Hurst, 2017; Klopfenstein, 2004a; Rodriguez & McGuire, 2019, Xu et al., 2021; Young, 2016)

The benefits of taking an AP course may be even greater among student groups that have historically been underrepresented in AP classes. "A U.S. Department of Education study concluded that African American, Latino, and low-income students are three times more likely to earn a bachelor's degree if they even attempt an AP class in high school" (Davis et al.,2014, p. 32).

--I'm speaking with you about this today because you have been identified, by the SSSD, as a student with the potential to be successful in an AP course. Have you ever considered taking an AP course?

YES (If the student response affirmatively, respond:)

--That's wonderful. I think this is a great decision because there are so many benefits for students taking an AP class. Research has shown that "All students who participate in advanced classes are far more likely to graduate from high school, and they are often far more successful in college after graduation" (Kerr, 2014, p. 481). I think this decision will benefit you now and in the future. Let's take a couple of minutes to see how an AP course could fit into your schedule next year. (Skip to the section **Scheduling an AP Course**)

NO (If the student responds negatively or is undecided, respond:)

--I understand that AP courses may not be in your plans right now, but I want you to know that we see the potential for you to be successful in these courses. Even if you don't get an A in the course or pass the AP exam, AP courses can still be beneficial. There are nearly universal benefits for students taking an AP class. Research has shown that "All students who participate in advanced classes are far more likely to graduate from high school, and they are often far more successful in college after graduation" (Kerr, 2014, p. 481). I'd still like to a take a minute to show you how we can work this course into your schedule next year. (Skip to the section **Scheduling an AP Course**)

Scheduling an AP Course

(First, build a quick mockup of the students schedule on the *Mock AP Schedule Sheet*

document. Be sure to include one of the AP courses available to 10th-grade students: AP Art

History, AP Music Theory, AP Computer Science, AP European History. <u>Let the student select

the course</u>. Offer to answer any questions they have about the courses. Then review the schedule

mockup with them explaining)

--This schedule shows how an AP course could fit into your schedule next year. Again, AP

courses are very important preparations for college. I want to make sure you know the benefits of

AP courses, and know that we believe you are capable of this level of learning.

--(Ask) Do you have any additional questions about this schedule or AP that I can answer for

you?

--(Ask) Are you interested in this schedule or one of the other AP courses I mentioned to you?

YES (If the student affirmatively, respond)

--Excellent. Let's get this scheduled for you.

(Proceed with the rest of the IGP meeting and scheduling)

NO (If the student responds negatively, respond)

--I understand and respect your decision. Please know that AP courses will be an option for you

again next year, and I'm always willing to discuss them with you.

(Proceed with the rest of the IGP meeting and scheduling)

AP Mock Scheduling Sheet

AP Courses Available to 10th Graders
- **AP Art History**
- **AP Computer Science**
- **AP European History (2 semesters)**
- **AP Music Theory**

Below is a mock up of how an AP course could fit into your schedule next year. This is NOT an official schedule. Courses, blocks, and semesters will vary when schedules are generated during the summer.

	1st Block	2nd Block	3rd Block	4th Block
1st Semester				
2nd Semester	1st Block	2nd Block	3rd Block	4th Block

AP = AP Course, C = Core Course, E = Elective Course

If you have questions about AP courses or how to schedule one for next year, please speak with your school counselor.

ACE Protocol Flow Chart

Advanced Course Enrollment (ACE) Meeting

Explain the benefits of AP and how it serves as an important college preparation

Ask if the student has ever considered taking an AP course?

If YES

If NO

Offer encouragement and reiterate the benefits of AP courses

Acknowledge their answer of "no", then explain that AP courses benefit students even if they don't pass the exam

Draw a mock schedule for next year including an AP course of their choosing

Offer to answer questions & ask if they are interested in scheduling an AP course for next year

If YES

If NO

Enter the schedule request for an AP course

Acknowledge that you understand and respect their decision & offer to discuss the issue with the student in the future

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Focus Group Protocol

Time of Interview:

Date:

Location:

Interviewer:

Focus Group Participants:

Focus Group Participant Positions:

Introduction to the Research:

I am studying the connection between academic counseling and student participation in

Advanced Placement (AP) courses. I will ask about your experience with AP coursework,

equitable access to AP courses, and academic advisement. Please know that all your responses

will be confidential, and you can cease involvement with this research anytime.

Questions:

1. What is your familiarity with the benefits of AP coursework as a preparation for college

    success?

2. How do you think taking an AP course in high school affects how well you succeed in

    college?

3. How do you think race affects a student's ability to access AP courses in the SSSD?

4. What role does academic advisement, delivered through a high school counseling office, play

    in the likelihood that a child will enroll in AP courses?

5. What further steps could the school or district take to encourage Black students to enroll in

    AP courses?

(Creswell & Poth, 2018)

REFERENCES

Alfonseca, K. (2024, June 11). *AP African American studies dropped in South Carolina, prompting criticism*. ABC News. https://abcnews.go.com/US/ap-african-american-studies-dropped-south-carolina-prompting/story?id=111028176

Bauer-Wolf, J. (2022). *College Board no longer disclosing AP test results by ethnicity, state*. Highereddive.com. Retrieved April 11, 2023, from https://www.highereddive.com/news/college-board-no-longer-disclosing-ap-test-results-by-ethnicity-state/626811/

Bittman, B., Davies, A., Russell, W., & Goussakova, E. (2017). Advance Placement and the achievement gap in the 21st century: A multiple linear regression of marginalized populations in AP enrollment. *Research in Social Sciences and Technology*, *2*(2). https://doi.org/10.46303/ressat.02.02.2

Brown v. Board of Education of Topeka, 347 U.S. 483 (1954). Justia Law. (n.d.). Retrieved April 12, 2023, from https://supreme.justia.com/cases/federal/us/347/483/

Bryk, A. S., Gomez, L. M., Grunow, A., & Lemahieu, P. G. (2017). *Learning to improve: How America's schools can get better at getting better*. Harvard Education Press.

College Board. (2021). *AP Program Results: Class of 2021*. Retrieved June 10, 2022, from https://reports.collegeboard.org/ap-program-results/2021

College Board. (2023a). *2023 AP Exam Fees* Retrieved April 7, 2022, from https://apstudents.collegeboard.org/exam-policies-guidelines/exam-fees

College Board. (2023b). *Understanding Racial/Ethnic Gaps in AP® Exam Performance*. https://research.collegeboard.org/media/pdf/Understanding_Racial_Ethnic_Performance_Gaps_in_AP_Exam_Scores.pdf

College Board. (n.d.). *What is AP?* Retrieved June 10, 2022, from

      https://apstudents.collegeboard.org/what-is-ap

Conger, D., Long, M. C., & Iatarola, P. (2009). Explaining race, poverty, and gender

      disparities in advanced course-taking. *Journal of Policy Analysis and Management*, *28*(4),

      555–576. https://doi.org/10.1002/pam.20455

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed*

      methods approaches. (5th Edition). SAGE Publications, Inc.

Creswell, J.W. & Poth, C.N. (2018). Qualitative Inquiry and Research Design Choosing

      Among Five Approaches. (4th Edition). SAGE.

Crumb, L., Chambers, C.R., & Chittum, J. (2021). #Black boy joy: The college

      aspirations of rural black male students. *The Rural Educator*, *42*(1), 1–19.

      https://doi.org/10.35608/ruraled.v42i1.969

Davis, P., Davis, M., & Mobley, J. (2013). The school counselor's role in addressing the

      advanced placement equity and excellence gap for African-American students.

      Professional School Counseling, *17*(1), 32–39. https://doi.org/10.5330/psc.n.2013-17.32

Dunn, D. C., Chisholm, A., Spaulding, E., & Love, B. L. (2021). A radical doctrine: Abolitionist

      education in Hard Times. *Educational Studies*, *57*(3), 211–223.

      https://doi.org/10.1080/00131946.2021.1892684

Hallett, R. E., & Venegas, K. M. (2011). Is increased access enough? Advanced

      Placement courses, quality, and success in low-income urban schools. *Journal for*

      the Education of the Gifted, *34*(3), 468–487.

      https://doi.org/10.1177/016235321103400305

Hinnant-Crawford, B.N. (2020). *Improvement science in education: a primer*. Myers

Education Press.

Kanno, Y., & Kangas, S. E. (2014). "I'm not going to be, like, for the AP." *American Educational Research Journal*, *51*(5), 848–878. https://doi.org/10.3102/0002831214544716

Kerr, R. (2014). "Advanced classes? They're only for white kids": How one Kansas school is changing the face of honors and Advanced Placement courses. *Action in Teacher Education*, *36*(5-6), 480–489. https://doi.org/10.1080/01626620.2014.977748

Kettler, T., & Hurst, L. T. (2017). Advanced academic participation. *Journal for the Education of the Gifted*, *40*(1), 3–19. https://doi.org/10.1177/0162353216686217

Klopfenstein, K. (2004a). Advanced Placement: Do minorities have equal opportunity? *Economics of Education Review*, *23*(2), 115–131. https://doi.org/10.1016/s0272-7757(03)00076-1

Klopfenstein, K. (2004b). The Advanced Placement expansion of the 1990s: How did traditionally underserved students fare? *Education Policy Analysis Archives*, 12, 68–. https://doi.org/10.14507/epaa.v12n68.2004

Kolluri, S. (2018). Advanced Placement: The dual challenge of equal access and effectiveness. *Review of Educational Research*, *88*(5), 671–711. https://doi.org/10.3102/0034654318787268

Maxwell, J. A. (2012). Chapter 5: Methods. *Qualitative research design: An interactive Approach*, (pp. 79-103). SAGE.

National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. (1979). *The Belmont report: Ethical principles and guidelines for protection of*

human subjects of research. U.S. Department of Health and Human Services.

https://www.hhs.gov/ohrp/regulations-and-policy/belmont-report/read-the-belmont-

report/index.html

Ohrt, J., Lambie, G., & Ieva, K. (2009). Supporting Latino and African-American students in

Advanced Placement courses: A school counseling program's approach. *Professional*

School Counseling, *13*(1), 59–63. https://doi.org/10.5330/psc.n.2010-13.59

Perry, J.A., Zambo, D., & Crow, R. (2020). *The improvement science dissertation in*

practice: A guide for faculty, committee members, and their students. Myers Education

Press

Provost, L.P. & Murray, S.K. (2011). *The health care data guide: learning from data for*

improvement (1st ed.). Jossey-Bass.

Rodriguez, A. & McGuire, K. M. (2019). More classes, more access? Understanding the effects

of course offerings on Black-White gaps in Advanced Placement course-taking. *Review*

of Higher Education, *42*(2), 641–679. https://doi.org/10.1353/rhe.2019.0010

Schneider, J. (2009). Privilege, equity, and the Advanced Placement program: Tug of

war. *Journal of Curriculum Studies*, *41*(6, Special Issue), 813–831.

https://doi.org/10.1080/00220270802713613

Schoolzilla (2021-2022). District Profile. *Renaissance Learning*.

Retrieved November 21, 2022, from http://mosaic.schoolzilla.com

Sherman, M. (2024, January 16). *Divided Supreme Court Outlaws affirmative action in college*

admissions, says race can't be used. AP News. https://apnews.com/article/supreme-court-

affirmative-action-college-race-f83d6318017ec9b9029b12ee2256e744

Shores, K., Kim, H. E., & Still, M. (2020). Categorical inequality in black and white:

Linking disproportionality across multiple educational outcomes. *American*

Research Journal, *57*(5), 2089–2131. https://doi.org/10.3102/0002831219900128

South Carolina Department of Education (2019-2022). *AP Data by School* [Data Set].

https://ed.sc.gov/data/test-scores/national-assessments/ap/

South Carolina Department of Education (2021). *2020-2021 [Southern Suburban School*

District] School Report Card. https://screportcards.com/overview/academics/college-

career-readiness/?q=eT0yMDIxJnQ9RCZzaWQ9NDYwNDAwMA

South Carolina Department of Education (n.d.). Career Guidance Best Practices.

https://ed.sc.gov/instruction/career-and-technical-education/education-and-

economic-development-act-eeda/career-specialist-services/igp-iep-guidelines/

 [Southern Suburban School District] (2021). *Southern Suburban Schools Strategic Plan*

Update 2020-21. https://www.[southernsuburbanschools].org/Page/69

Tanner, D. (2012). *Using statistics to make educational decisions*. Sage

Taliaferro, J., & DeCuir-Gunby, J. (2008). African American educators' perspectives on

the Advanced Placement opportunity gap. *The Urban Review*, *40*(2), 164–185.

https://doi.org/10.1007/s11256-007-0066-6

Whiting, G. W., & Ford, D. Y. (2009). Multicultural issues: Black students and Advanced

Placement classes: Summary, concerns, and recommendations. *Gifted Child Today*, *32*(1),

23–26. https://doi.org/10.4219/gct-2009-840

Xu, D., Solanki, S., & Fink, J. (2021). College acceleration for all? Mapping racial gaps

in Advanced Placement and dual enrollment participation. *American Educational*

Research Journal, *58*(5), 954–992. https://doi.org/10.3102/0002831221991138

Young, J. L. (2016). Access, achievement, and academic resilience: The relationship

between AVID and Black student participation in Advanced Placement courses. *Journal of Multicultural Affairs*, *1*(2), 4. https://scholarworks.sfasu.edu/jma/vol1/iss2/4/