Exploring Black Student Representation in Dual Enrollment: A Critical Race Mixed Methods Study

ACCEPTANCE

This dissertation, EXPLORING BLACK STUDENT REPRESENTATION IN DUAL ENROLLMENT: A CRITICAL RACE MIXED METHODS STUDY, by JANELLE R. CLAY, was prepared under the direction of the candidate's Dissertation Advisory Committee. It is accepted by the committee members in partial fulfillment of the requirements for the degree, Doctor of Philosophy, in the College of Education & Human Development, Georgia State University. The Dissertation Advisory Committee and the student's Department Chairperson, as representatives of the faculty, certify that this dissertation has met all standards of excellence and scholarship as determined by the faculty.

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PROFESSIONAL SOCIETIES AND ORGANIZATIONS

Society for Research in Educational Effectiveness (SREE)

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EXPLORING BLACK STUDENT REPRESENTATION IN DUAL ENROLLMENT: A CRITICAL RACE MIXED METHODS STUDY

by

JANELLE R. CLAY

Under the Direction of Dr. Kevin Fortner

ABSTRACT

Since the 1970s, dual enrollment programs have aimed to increase high school graduation rates and promote postsecondary enrollment. Nationally, participation in dual enrollment surged to nearly 2.5 million students in the 2022-23 academic year (Fink, 2024). In Georgia, recent estimates indicate that approximately 59,000 students participated in dual enrollment during the 2022-23 school year (Fink, 2024). However, despite widespread availability across Georgia, Black students are underrepresented in dual enrollment programs.

This study employs a Critical Race Mixed Methods (CRMM) design to examine Black students' representation in Georgia's dual enrollment program during the 2021-22 school year. In the quantitative phase, I use Quantitative Critical Race Theory (QuantCrit) to analyze school-level data to explore how compositional and contextual factors and Black students' perception of school climate relate to Black students' proportional representation in dual enrollment, measured through a dual enrollment equity index. In the qualitative phase, nine Black students were

interviewed to gain deeper insights into their experiences, perceptions of school climate, and the factors influencing their decisions regarding dual enrollment participation.

Results from regression analyses suggest that urbanicity, charter status, and teacher experience significantly affect Black students' perceptions of school climate, which, along with the racial composition of the student body and faculty, are positively associated with more equitable representation in dual enrollment programs. The qualitative phase revealed four themes that underscore the importance of connection and belonging within racially diverse school communities in enhancing student engagement and participation in dual enrollment. The study revealed that schools with coordinated strategies foster greater awareness, while perceived academic unpreparedness deters participation. Additionally, inclusive communication strategies that emphasize peer learning and experiential opportunities are essential to making dual enrollment more accessible to Black students.

This study adds to our understanding of the factors affecting equitable representation of Black students in Georgia’s dual enrollment programs and the effectiveness of school strategies in promoting racial equity in participation.

INDEX WORDS: Dual Enrollment; Quantitative Critical Race Theory (QuantCrit); Critical Race Theory

EXPLORING BLACK STUDENT REPRESENTATION IN DUAL ENROLLMENT: A CRITICAL RACE MIXED METHODS STUDY

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DEDICATION

I can do all things through Christ who strengthens me.

-Philippians 4:13

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1 THE PROBLEM

Access to high-quality and rigorous educational opportunities has historically been inequitable in the United States. The legacy of educational inequities in America is well documented; these inequities did not emerge randomly or by chance but were instead shaped by beliefs in the inferiority of Black, Asian, Latino/a, and Native peoples, beliefs that were institutionalized through policy and endorsed by the nation's leaders (Ladson-Billings, 2006; Noguera, 2016; Noltemeyer et al., 2012). This legacy has resulted in unequal educational opportunities for students of color, as evidenced by differential enrollment and underrepresentation in accelerated learning programs like Advanced Placement (AP) courses, dual enrollment, and International Baccalaureate (IB) programs; enrollment in honors and "gifted" classes; and postsecondary enrollment and completion (Ford et al., 2001; Ladson-Billings, 2006).

Since the 1970s, dual credit programs have been used as a strategy to encourage high-achieving high school students to take academically challenging courses beyond those offered at the high school level, aiming to increase college enrollment and completion (D. Allen, 2010; An & Taylor, 2019; Barnett & Stamm, 2010; Kim et al., 2006). In general, dual enrollment refers to policies or strategies between high schools and postsecondary institutions that allow high school students to simultaneously enroll in approved college courses and earn high school and college credit upon completing coursework (D. Allen, 2010; Barnett & Stamm, 2010; Pretlow & Wathington, 2013). The structure of dual enrollment programs varies based on the nature of the partnerships between high schools and postsecondary institutions, with courses being offered at

high schools taught by approved college faculty, on college campuses as traditional college courses or as a unique course only for dually enrolled students (Jamieson et al., 2022).

Nationally, estimates suggest that 90% of high schools offer at least one dual enrollment coursework, and approximately one-third of high school students take at least one college course while in high school (Shivji & Wilson, 2019; U.S. Department of Education, 2022). Studies that examine the benefits and impact of dual enrollment suggest participation is positively associated with college enrollment, persistence, and completion (An, 2013; Giani et al., 2014; Struhl & Vargas, 2012). However, evidence on the effects of dual enrollment for Black students remains limited (An & Taylor, 2019). Some scholars and educators nonetheless consider dual enrollment as a tool for promoting college enrollment and reducing college enrollment gaps among students from racially and ethnically marginalized groups and students from low-income backgrounds (Nelson & Waltz, 2019). Despite the documented benefits, racial disparities persist in participation rates. Specifically, Black and Hispanic high school students, along with those from low-income backgrounds, remain underrepresented in dual enrollment courses relative to their proportion in the overall student population (An & Taylor, 2019; Pretlow & Wathington, 2013; Shivji & Wilson, 2019; J. L. Taylor et al., 2022; J. L. Taylor & Lichtenberger, 2013; Xu et al., 2021).

According to the Georgia Student Finance Commission, the state's dual enrollment program offers high school students, whether enrolled in public, private, or home study programs, the opportunity to earn high school and college credit at participating institutions across the state (Georgia Student Finance Commission, n.d.). The program aims to increase high school graduation rates, reduce the time and cost required to earn a postsecondary credential, and prepare a skilled workforce (G. S. Griffin & McGuire, 2020). Between the 2007 and 2021 school

years, participation increased from 10,600 to over 48,000 students (Rauschenberg & Chalasani, 2017). Despite this overall growth, enrollment patterns among Black students did not reflect broader statewide patterns. In the 2017-18 school year, the Georgia Department of Education (GaDOE) reported that although Black students made up 37.1% of all public high school students, they represented only 28.4% of dually enrolled students, resulting in an underrepresentation of 8.7 percentage points. Hispanic students were similarly underrepresented by 6.2 percentage points. In contrast, White students who made up 40.9% of the total public high school population, accounted for 56.0% of dually enrolled students, indicating an overrepresentation of 15.1 percentage points. Asian students and those whose racial categories were not reported were proportionally represented in dual enrollment relative to the overall school population (Flamini & Chalasani, 2019).

For Black students, the decision to participate in dual enrollment is not solely influenced by individual academic readiness or aspirations. The broader school context, including the racial and economic composition of schools, the presence of Black teachers, and the overall school climate, plays a critical role in shaping students' perceptions of and access to advanced coursework. Schools with a high concentration of low-income students often lack the resources to offer a wide array of dual enrollment opportunities, while schools with a predominantly White and affluent student body are more likely to provide these programs (Barnard-Brak et al., 2011; ExcelinEd, 2018). Additionally, the racial diversity of the teaching staff can impact Black students' academic experiences, as Black teachers are more likely to serve as advocates and role models for Black students, fostering a sense of belonging and encouraging participation in advanced learning opportunities (Gershenson et al., 2022; Milner & Howard, 2004). Conversely, a lack of racial diversity in the teaching staff, combined with implicit biases, can create barriers

to Black students' enrollment in dual enrollment courses and other advanced coursework (Francis et al., 2019). Thus, understanding how these school-level factors contribute to or impede Black students' dual enrollment participation is essential for advancing equitable access to college preparation programs.

Purpose of the Study

The purpose of this study is to critically examine the representation of Black students in dual enrollment across high schools in Georgia, grounded in Critical Race Theory (CRT) as the overarching theoretical framework. The quantitative section, leveraging Quantitative Critical Race Theory (QuantCrit), investigates the relationship between Black high school students' representation in dual enrollment and school-level compositional and contextual factors, focusing on their collective perceptions of school climate. The qualitative section, using a phenomenological approach grounded in CRT, explores how Black students' perceptions of their high school's climate shape their decision-making regarding dual enrollment participation. By addressing the significant gap in research on Black students' experiences with dual enrollment, this study contributes to a deeper understanding of educational equity and access in accelerated learning programs.

Research Questions

Using a Critical Race Mixed Methods (CRMM) approach, this study explores this central question: *What is the relationship between school climate and Black students' participation in dual enrollment across high schools in Georgia?* As a mixed methods study, two primary research questions, one quantitative and one qualitative, were developed to address this question. The central quantitative question is *to what extent does a relationship exist between schools' compositional and contextual factors and Black students' proportional representation in dual*

enrollment in public high schools in Georgia during the 2021-22 school year? The analytical questions guiding this phase of the study are:

1. What were Black high school students' perceptions of their school climate? How does Black students' perception of school climate vary based on student-body demographics, teacher demographics, teacher experience, total enrollment, school operational characteristics, and location?
2. To what extent were Black high school students proportionally represented in Georgia's dual enrollment program? How does Black students' representation in dual enrollment vary based on student-body demographics, teacher demographics, teacher experience, total enrollment, school operational characteristics, and location?
3. What is the relationship between Black students' collective perception of school climate and Black students' representation in dual enrollment in high schools across the state of Georgia, controlling for student-body demographics, teacher demographics, teacher experience, total enrollment, school operational characteristics, and location?

The qualitative question explored is *how do Black high school students' perception of their high school's climate inform their decisions regarding dual enrollment participation?*

Significance of the Study

This study contributes to the literature on dual enrollment, particularly regarding Black students' participation, and to the ongoing discourse on dual enrollment in Georgia. First, a comprehensive literature review reveals significant gaps in existing research on Black students' representation in dual enrollment programs. While the literature on dual enrollment is expanding, much of it focuses on access to dual enrollment and the benefits of participation, often overlooking the critical role that school contextual factors play in shaping access and

participation (Moreno et al., 2021; Schaller et al., 2023; J. L. Taylor et al., 2022). Furthermore, qualitative studies on Black students' participation in dual enrollment typically concentrate on those who have already participated, missing opportunities to explore in-school factors that may exclude Black students or create barriers to their participation (Rarig, 2019). This study addresses these gaps by examining school compositional and contextual factors, such as school demographic composition, urbanicity, teacher diversity and experience, and school climate, which have yet to be fully explored in relation to dual enrollment participation.

In addition to filling these gaps, this study enhances the discourse on dual enrollment in Georgia, where few peer-reviewed or publicly available publications have focused on statewide participation patterns (Alsup & Depenhart, 2023; Berry et al., 2022; Harnish & Lynch, 2005). In Georgia, dual enrollment remains a legislative priority, as evidenced by recent efforts to refine program goals, examine participation growth, and adjust funding appropriations (G. S. Griffin & McGuire, 2020; Lee & Owens, 2019). This study contributes to these ongoing efforts in a few ways. First, it demonstrates the utility of a dual enrollment equity index in setting explicit data-driven goals for equitable participation. This index can be a valuable tool for state legislators and education advocates to quantitatively assess and address disparities in dual enrollment access. Additionally, the study incorporates qualitative student narratives, providing crucial insights into how Black students perceive their school environments and highlighting the importance of intentional programming around dual enrollment. By combining these quantitative and qualitative approaches, the research offers a comprehensive framework for developing targeted strategies to enhance Black students' participation in dual enrollment programs.

Furthermore, this study makes a methodological contribution by applying QuantCrit within a Critical Race Mixed Methods framework. QuantCrit allows for a critical interrogation of

quantitative data, moving beyond surface-level interpretations and revealing how systemic and structural inequities, specifically those related to race, are embedded in educational processes. By combining QuantCrit with qualitative inquiry, this study highlights how race and power operate within schools to shape Black students' opportunities for participation in dual enrollment. This methodological approach offers a more nuanced and comprehensive analysis of the structural factors and the lived experiences that influence educational outcomes for Black students, thereby making a notable contribution to the critical race literature in education research.

The findings and implications of this study have the potential to benefit educators in public high schools by helping them identify strategies to better engage Black students and create an environment where they have complete information and access to dual enrollment. By providing a deeper understanding of the factors influencing Black students' participation in dual enrollment, this research aims to inform policy and practice, ultimately contributing to more equitable educational outcomes.

Definition of Terms

Dual Enrollment. Georgia's Dual Enrollment program offers eligible high school students, whether enrolled in public, private, or home study programs, the opportunity to take college-level courses at participating postsecondary institutions. These courses can be taken at the student's high school or on the college campus. Upon successful completion, students receive both high school and college credit simultaneously (Georgia Department of Education, n.d.-a; Georgia Student Finance Commission, n.d.). For this study, students who have enrolled in at least one dual enrollment course are sometimes referred to as dually enrolled students. To avoid awkward phrasing, "participation in dual enrollment" is sometimes used to describe enrollment

in dual enrollment courses. Additionally, the term “dual credit course(s)” is used interchangeably with “dual enrollment” throughout the study.

Accelerated learning options. This term serves as a comprehensive descriptor for high school programs that enable students to enroll in college-level courses while still in high school, commonly referred to as credit-based transition programs (Hoffman et al., 2009). These programs include Advanced Placement (AP), International Baccalaureate (IB), early college programs, and dual enrollment. Despite their differences, these programs allow students to complete college-level coursework and earn college credit. Specifically, students in AP or IB programs must earn a specific course grade and pass a corresponding course exam to earn college credit.

Economically Disadvantaged. The Georgia Department of Education classifies individual students as economically disadvantaged if they are eligible for free or reduced-price lunch meals (FRM). Additionally, in schools with federal waivers, all students are classified as economically disadvantaged. This classification is collected as part of the student record (Georgia Department of Education, n.d.-b).

Equity. Equity is generally understood as the absence of bias or favoritism and is defined as the “state, quality or ideal of being just, impartial, and fair. The concept of equity is synonymous with fairness and justice” (The Annie E. Casey Foundation, 2015).

Georgia Department of Education: The Georgia Department of Education is responsible for managing K-12 public education, ensuring compliance with educational laws and regulations, and overseeing distribution of state and federal funding to local school systems (State of Georgia, n.d.).

Governors' Office of Student Achievement: The Governor's Office of Student Achievement (GOSA) serves as the state's P-20 education agency. GOSA plays a key role in promoting accountability and transparency by using data and through collaboration with various education stakeholders to support student achievement (Governor's Office of Student Achievement, n.d.).

Racially and Ethnically Marginalized Groups. Racially and ethnically marginalized groups refers to racial and ethnic groups that have been systematically excluded from full participation in American society and who have been related to or placed in an unimportant or depowered position within society (American Psychological Association (APA), n.d.; Minnesota Psychological Association, n.d.). In this study, I include people identified as African American or Black, Asian, Hispanic, Native American, Alaska Native, Pacific Islanders, and those of multiple racial identities as racially and ethnically marginalized. Students from these racial and ethnic groups, in particular, may face multiple layers of marginality, especially in environments that do not value or actively engage with diversity (Collins, 1986; Strayhorn, 2008).

Summary

Although dual enrollment is often promoted as a strategy to reduce racial disparities in postsecondary enrollment, research consistently indicates that Black students are underrepresented in these programs at both the national and state levels (J. L. Taylor et al., 2022; Xu et al., 2021). While some studies have documented these disparities, there has been limited exploration into the contextual factors at the school level that may contribute to equitable participation. Previous research has primarily concentrated on schools' racial composition, socioeconomic background, and school-level achievement and has focused on the Black-White participation gap (Museus et al., 2007; Pretlow & Wathington, 2013; Xu et al., 2021). This study

advances the field by focusing exclusively on Black students, moving beyond the traditional analysis of White-Black participation gaps. To do this, I introduce an equity-focused index to assess equitable representation in dual enrollment and incorporate a school-level measure of school climate to better understand how Black students' experiences and perceptions of their school climate influence their participation in dual enrollment. Additionally, the qualitative component of this study delves deeper into how these perceptions impact students' decisions to enroll in dual enrollment courses.

2 LITERATURE REVIEW AND THEORETICAL FRAMEWORK

The purpose of this chapter is to summarize the research literature on Black students' participation in dual enrollment, with a particular focus on how school contextual and compositional factors influence Black students' access to these programs. The National Center for Education Statistics (NCES) recently released the *Report on the Condition of Education 2023,* an annual overview of the latest data on education in the United States. This report sheds light on the persistent barriers that Black students face in accessing educational opportunities, as well as racial disparities in outcomes across different levels of education. As García (2020) observes, "Black children are still relegated to separate and unequal schools" (p.1), a reality that is reinforced by the disparities highlighted in the report.

The *Report on the Condition of Education 2023* also highlights national trends in school poverty and racial segregation that disproportionately affect Black students. In fall 2021, 37% of Black public-school students across the U.S were enrolled in high-poverty schools, those where more than 75% of students qualify for free or reduced-price lunch, this is 16 percentage points higher than the national average (National Center for Education Statistics, 2023a). Additionally, the report underscores that Black students are more likely to attend schools highly segregated by race and ethnicity. In fall 2021, 59% of Black public-school students attended schools where 75% or more of students were students of color (National Center for Education Statistics, 2023b). The implications of ongoing racial and economic segregation are particularly concerning. Research studies suggest that racial segregation between school districts correlates with funding disparities, with districts serving predominantly Black students often receiving fewer resources than those serving predominantly White students. Furthermore, such segregation

is associated with differences in academic outcomes between Black and White students (Reardon, 2016; Sosina & Weathers, 2019; Weathers & Sosina, 2022).

Multiple studies have explored the relationship between school resources and academic programming, consistently finding that schools with greater resources are better positioned to offer rigorous and diverse curricula, provide high-quality instruction, hire and retain experienced and credentialed educators, and maintain smaller class sizes (Baker et al., 2016; Gardner-Neblett et al., 2023; Nowicki, 2018). These structural inequities have both immediate and long-term effects on Black students, who are disproportionately enrolled in under-resourced, low-wealth schools (Clotfelter et al., 2007; Oakes et al., 2019; Orfield & Lee, 2005; Simon & Johnson, 2015). The segregation of Black students in under-resourced schools is just one mechanism through which educational inequality is perpetuated (Orfield & Lee, 2005).

School contextual and compositional factors, including the racial and economic composition of the student body, the racial makeup of the teaching workforce, teacher experience and credentials, and school location, play a significant role in shaping the availability and accessibility of academic programs. These factors, in turn, shape students' experiences of their school environments, affecting their perceptions of school climate (Bastian et al., 2013; Clotfelter et al., 2007; Diette, 2012; Diette et al., 2021; K. Griffin & Allen, 2006; Simon & Johnson, 2015; Thapa et al., 2013). This is particularly relevant for Black students, who must also contend with instances of racism, stereotypes, microaggressions, racial spotlighting (being singled out because of one's race), racial ignoring (being ignored because of one's race), and cultures of low expectations (Q. Allen, 2010, 2015; Andrews, 2012; K. Griffin & Allen, 2006; Malone et al., 2023).

To gain a deeper understanding of Black students' underrepresentation in dual enrollment, this literature review explores how school contextual and compositional factors shape their academic experiences and access to educational opportunities. In the following sections, I begin by providing background information and a brief history of dual enrollment, highlighting both the benefits of participation and the racial disparities in access. This is followed by an overview of dual enrollment programs specifically in Georgia. To further investigate how school contextual and compositional factors shape educational inequities, I then examine the role of school climate, racial and economic composition, teacher bias, and teacher-student racial matching, and their potential contributions to the underrepresentation of Black students in dual enrollment programs. Finally, I discuss how Critical Race Theory (CRT) serves as the theoretical framework for understanding the inequitable participation and representation of Black students in dual enrollment.

Background and History of Dual Enrollment

Since the 1970s, high school students have been able to enroll in and earn credit for college-level courses through partnerships with postsecondary institutions (Kim et al., 2006). Initially, dual enrollment programs were introduced to maintain academic engagement among high school seniors, offer advanced coursework to academically prepared and high-achieving students beyond what was available at the high school level, facilitate a smoother transition between high school and college, and provide students with additional momentum towards degree attainment (D. Allen, 2010; An & Taylor, 2019; Barnett & Stamm, 2010; Edwards et al., 2011; Kim et al., 2006; Klopfenstein & Lively, 2012).

Over time, dual enrollment has evolved as a strategy to address declining college enrollment and completion rates, particularly among students from racially and ethnically

marginalized groups and those from low-income backgrounds. It has also been used to respond to the growing need for remedial college courses (Kim et al., 2006; Mokher & McLendon, 2009).

In simple terms, dual enrollment refers to statewide policies or strategies that promote partnerships between high schools and postsecondary institutions, allowing high school students to enroll in college courses and earn high school and college credit upon successful completion (D. Allen, 2010; Barnett & Stamm, 2010; Pretlow & Wathington, 2013). More broadly, dual enrollment can also encompass programs designed to accelerate students' college experiences, such as AP or IB programs. However, unlike dual enrollment programs, AP and IB courses are managed by independent organizations and not in direct partnership with postsecondary institutions. Furthermore, while students in AP and IB courses receive high school credit upon course completion, they must earn a qualifying score on an optional exam to be eligible for college credit, which is subject to acceptance by the receiving college (Hughes, 2010; Speroni, 2011).

Characteristics of Dual Enrollment

Several terms are used to describe programs that allow high school students to take college credit-bearing courses through articulation agreements with postsecondary institutions, including concurrent enrollment, dual credit, joint enrollment, and dual enrollment (National Alliance of Concurrent Enrollment Partnerships, n.d.; Tobolowsky & Allen, 2016). Although these terms are sometimes used interchangeably to refer to high school students taking college courses, there are programmatic differences that vary by state and locality (An & Taylor, 2019; Edwards et al., 2011; J. L. Taylor et al., 2022; Tobolowsky & Allen, 2016). For this dissertation, I use the terms "dual enrollment" and "dual credit" interchangeably to describe the practice in

which high school students enroll in individual college credit-bearing courses and receive high school and college credit upon successful completion. This definition includes courses taught at high schools by college-approved faculty and courses delivered by college faculty either on campus or virtually. This definition aligns with the definition provided by the Education Commission of the States (ECS), which excludes programs offering college credit through early college or middle college high schools, as well as comprehensive dual enrollment programs requiring students to enroll in a specific set of courses or complete a particular credential (Jamieson et al., 2022).

According to the ECS, 48 states and the District of Columbia have state-level dual enrollment policies (Jamieson et al., 2022). Though state policies differ significantly, they generally offer guidance on key aspects of dual enrollment, including financing, student eligibility, course offerings, instructor qualifications, course locations, and the number of courses or credit hours students can take (Jamieson et al., 2022). In 2019, the National Center for Education Statistics (NCES) reported that 80% of students who took college credit-bearing courses took those courses at their high school, 17% took courses at a college campus, 8% took courses online, and 6% took courses at a high school other than their own (Shivji & Wilson, 2019). The location of these courses is often influenced by factors such as the proximity of a high school to a college campus, student enrollment or interest, instructor availability, and course scheduling (Edwards et al., 2011).

Dual Enrollment Participation and Benefits

Over the past two decades, the number of high school students enrolling in college credit-bearing courses has significantly increased (J. L. Taylor et al., 2022). National estimates indicate that approximately 90% of high schools offer dual enrollment courses, and about one-third of

high school students have taken at least one college course while still in high school (Shivji & Wilson, 2019; U.S. Department of Education, 2022). In contrast, estimates from 2003 suggested that only 70% of high schools offered dual enrollment courses at that time.

In five states, high school students enroll in postsecondary courses at rates significantly higher than the national average. Additionally, high schools in the South and Midwest are more likely to offer dual enrollment courses compared to those in the Northeast or West (National Alliance of Concurrent Enrollment Partnerships, n.d.). This regional variation is largely attributed to differences in state policies, which often serves as mandates for dual enrollment programs. These policies provide clarity regarding the objectives of dual enrollment, as well as guidance on financing, student eligibility, and the transferability of credits (Jamieson et al., 2022; Pretlow & Patteson, 2015; Spencer & Maldonado, 2021).

Dual Enrollment Outcomes and Benefits for Students

As a college readiness strategy, dual enrollment provides both social and academic benefits to students. Socially, research studies suggest that participation in college-level courses helps dually enrolled students increase their knowledge of college environments and gain important skills on how to navigate college once enrolled (Kanny, 2015; Lile et al., 2018; Speroni, 2011; J. L. Taylor et al., 2022). In a semester-long qualitative study, Karp (2012) found that dual enrollment students learned about the role of a college student in relation to academic expectations and performance. Through this experience, students practiced behaviors that aligned with these expectations, which contributed to their success in college. Karp (2012) emphasized the importance of providing high school students with opportunities to practice the role of a college student, rather than just being told about expectations, with dual enrollment serving as one such opportunity. Similar findings were reported by Kanny (2015) and Lile et al. (2018),

whose studies highlighted the importance of exposing high school students to college environments to enhance their understanding of academic expectations, as well as their knowledge and awareness of how to successfully navigate college (Kanny, 2015; Lile et al., 2018).

Quantitative studies have also explored the relationship between dual enrollment and academic outcomes. These studies demonstrate that dual enrollment participation is associated with an increased likelihood of postsecondary enrollment, persistence, and degree completion. It also enhances student readiness for college courses by reducing the need for remedial coursework and decreases both the financial burden and time to degree completion (Fink et al., 2017, 2017; Harnish & Lynch, 2005; Speroni, 2011; J. L. Taylor, 2015). Despite the breadth of research on dual enrollment, relatively few studies specifically examine how these benefits apply to students of color, particularly Black students.

In one of the few studies which examine Black students in dual enrollment, Struhl and Vargas (2012) estimated that Black students who participated in dual enrollment were 1.60 times more likely to enroll in college after high school compared to their non-dually enrolled Black peers. Similarly, Taylor (2015) employed propensity score matching to examine the differential effects of community college dual credit on college enrollment and degree completion for low-income students and students of color in Illinois. While this study found that dually enrolled students were 26% more likely to enroll in college and 14% more likely to attain a degree, a key limitation is the aggregation of all non-White students into a single group of ‘students of color.’ Though this may have been necessary due to small sample sizes, it masks the specific experiences and outcomes of Black students, limiting the ability to draw conclusions about the impact of dual enrollment on Black students. While both studies provide important insights into

the potential benefits of dual enrollment for Black students, they remain exceptions in the literature. Moreover, these studies highlight the need for more nuanced methodological approaches that do not rely on overly broad racial categories, as well as the need for research that directly examines the impact of dual enrollment on Black students.

Equity Gaps in Dual Enrollment Participation Trends

While studies have demonstrated the benefits of dual enrollment, significant equity gaps persist in participation, with students from racially and ethnically marginalized groups and low-income backgrounds remaining underrepresented. An and Taylor (2019) argue that equitable participation in dual enrollment would result in the demographics of participants mirroring those of the broader student population. However, inequitable participation leads to systematic disparities in student characteristics between participants and nonparticipants, further entrenching existing inequities. Despite the potential of dual enrollment as a mechanism for promoting equity, research consistently shows that Black, Hispanic, and Native American students, as well as those from lower socioeconomic backgrounds, are disproportionately excluded from these opportunities (An, 2013; An & Taylor, 2019; Giani et al., 2014; Pierson et al., 2017; Pretlow & Wathington, 2013; Xu et al., 2021; Zinth, 2014). These disparities are not merely the result of inequitable access but are also indicative of deeper systemic stratification within the education system. Williams and Perry (2020) further highlight that even within schools and districts with relatively high levels of dual enrollment participation, stark disparities persist, underscoring the need for intentional efforts to address the structural barriers that prevent equitable access to these programs.

Using data from the 2009 High School Longitudinal Study, Shivj and Wilson (2019) reported that 27% of Black students and 30% of Hispanic students enrolled in at least one dual

credit course during high school compared to 38% of White and 38% of Asian students. This reflects overall participation in dual credit coursework at any point during their high school experience (A. Williams & Perry, 2020). However, when examining annual dual enrollment rates, the disparities become even more pronounced. Annually, only about 5% of Black students participate in dual enrollment, compared to approximately 10% of White students, despite overall dual enrollment rates hovering around 8-9% for all students (A. Williams & Perry, 2020). State-specific analyses also mirrored national trends. For example, in Virginia, Pretlow and Wathington (2014) examined the effect of a statewide policy designed to increase dual enrollment participation generally and specifically among a diverse group of students. Using statewide administrative data, the authors found that though access to and participation in dual enrollment increased during the study period, 2004 to 2006, the increase was not equitable. Specifically, during the study period, Black and Hispanic students experienced the largest increase in dual enrollment; however, Black and Hispanic students remained significantly underrepresented, while White students were overrepresented (Pretlow & Wathington, 2014).

Though most studies focus on student-level participation trends and the impact of dual enrollment on academic outcomes, fewer have examined the school and district contextual factors that contribute to racial disparities in dual enrollment (for exceptions, see Museus et al., 2007; Pretlow & Wathington, 2013; Xu et al., 2021). Xu et al. (2021) linked multiple national data sources to examine White-Black and White-Hispanic gaps in dual enrollment and Advanced Placement across numerous school districts nationally. Their findings revealed a 4.7 percentage point gap in dual enrollment participation between White and Black students', with significant variability across districts (Xu et al., 2021). They identified the gap in pre-high school academic achievement, measured by standardized test scores in English Language Arts and math for

students in Grades 3 to 8, as the strongest predictor of participation disparities for Black and Hispanic students in both AP and dual enrollment programs.

Further, districts with a higher proportion of students receiving free or reduced-priced lunch and those with a higher proportion of Black students were associated with larger racial gaps in dual enrollment participation. However, there were no discernible patterns relating dual enrollment racial participation gaps to between-school economic segregation or the proportion of Hispanic students in a district (Xu et al., 2021). Additionally, state-level policies were found to impact these gaps: districts in states with stringent accountability measures for access and student outcomes exhibited larger White-minority participation gaps than those in states with less rigorous policies (Xu et al., 2021). Conversely, in states offering financial incentives for dual enrollment, the White-Black enrollment gap was smaller compared to districts where the costs fell on parents and students (Xu et al., 2021).

In another relevant study, Pretlow and Wathington (2013) examined access to dual enrollment in Virginia and discovered that schools that with a high percentage of students of color were less likely to offer dual enrollment courses, thereby limiting these students' opportunities to participate.

Reasons for Racial Disparities in Dual Enrollment Participation

According to Taylor et al.(2022), reasons for racial disparities in dual enrollment can be organized into state policies, institutional practices, and individual mindsets. Though state policies provide guidance on dual enrollment programming, they are also drivers of inequity by underfunding secondary and postsecondary institutions, limiting how funds can be used to support students in dual enrollment, not stipulating or limiting the financial costs to students, and restricting dual enrollment based on academic parameters (An & Taylor, 2019; Jamieson et al.,

2022; Zinth, 2014). These financial stipulations serve as barriers for students from middle- and low-income households as they are likely to be responsible for tuition and fees associated with dual enrollment. Additionally, the financial stipulations put in place through state policies may disincentivize postsecondary institutions and school districts from entering into dual enrollment agreements, limiting the availability of dual enrollment to students (Field, 2021; Hooper & Harrington, 2022; A. Williams & Perry, 2020; Zinth, 2014). State policies also govern student eligibility and often stipulate academic eligibility parameters including high school grade point average, performance on standardized assessments, and in some cases perceived readiness as determined by a high school counselor or college administrator (Jamieson et al., 2022; A. Williams & Perry, 2020; Zinth, 2014). In addition to financial barriers, the eligibility parameters included within state policies perpetuate educational inequities as they restrict participation to students who appear academically ready for college-level coursework and excludes students whose grades or assessment scores may fall just below eligibility measures (Hooper & Harrington, 2022; Zinth & Barnett, 2018). This is counter to studies which show that lower-performing students and students less likely to participate also benefit from dual enrollment participation (An & Taylor, 2019; Zinth & Barnett, 2018).

Beyond state policies which guide the financial costs associated with dual enrollment and eligibility parameters, institutional practices also serve as barriers to equitable participation in dual enrollment. Though schools vary in how they inform, recruit, and support students through the dual enrollment registration process, high school counselors are often tasked with this role (Moreno, 2023). Yet, the practices used to identify students for dual enrollment can be informed or influenced by their biases, resulting in exclusionary practices and gatekeeping (Hooper & Harrington, 2022; Rarig, 2019; J. L. Taylor et al., 2022; Trost, 2016; Witkowsky & Clayton,

2020). A study by Witkowsky and Clayton (2020) explored high school counselors' perceptions of and role in dual enrollment offerings in Colorado. The authors found that counselors often used formal and informal criteria to inform, identify, and support students around dual enrollment. Though counselors reported on the many benefits of dual enrollment, their practices and biases influenced who gained access to it (Witkowsky & Clayton, 2020). Specifically, counselors' biases may have influenced who they informed about dual enrollment, particularly as they used informal criteria, such as "mindset," "maturity," and "work ethic," to determine students' readiness for dual enrollment (Witkowsky & Clayton, 2020). Other studies have connected racial disparities in advanced coursework to educators' low expectations of students of color and educators' biases, which negatively impact these students (Francis et al., 2019; Gershenson et al., 2016). The role of counselors and other school-based staff in informing and recruiting students into dual enrollment suggests that students and families who are less familiar with dual enrollment opportunities and the potential benefits may not receive the necessary information to decide on dual enrollment participation (Zinth, 2014).

Racial disparities and equity gaps in dual enrollment participation can be partly attributed to policies and practices that are exclusionary by design, creating barriers to access through gatekeeping of information, restrictive eligibility criteria, and financial burdens. While the literature identifies the role of policies and in-school practices in perpetuating equity gaps in dual enrollment, there remains a research gap concerning how school environment and school climate further exacerbate these disparities. Although previous studies have established a link between school characteristics and dual enrollment participation (Museus et al., 2007; Pretlow & Wathington, 2013; Xu et al., 2021), the impact of institutional practices or school climate on these inequities remains unclear.

Dual Enrollment in Georgia

Since 1992, students in Georgia have had opportunities to earn college credit while still enrolled in high school (G. S. Griffin & Mcguire, 2018). Though the purpose or intent of dual enrollment in Georgia has shifted over time, the current iteration of Georgia's dual enrollment programming is designed to "promote and increase access to postsecondary educational opportunities for Georgia high school students while increasing high school graduation rates, preparing a skilled workforce, and decreasing time and cost to postsecondary credentials" (G. S. Griffin & McGuire, 2020, p. 3). As of June 2020, students in 11th and 12th grade are eligible for dual enrollment; 10th grade students may enroll in dual credit courses under specific circumstances (G. S. Griffin & McGuire, 2020). Though specific eligibility requirements vary across postsecondary institutions that participate in the state's dual enrollment program, most institutions require students to have a minimum high school GPA, minimum college entrance exam score (e.g., SAT, PSAT, Accuplacer, ACT), and be on track for graduating high school (Georgia Student Finance Commission, n.d.).

Since becoming an option for students in Georgia, access and participation in dual enrollment has increased. During the 2020-21 school year, approximately 48,000 public school students enrolled in at least one dual enrollment course, representing 9% of Georgia public high school students, a 104% increase from five years earlier (2015-16) (Flamini & Chalasani, 2019; Georgia Student Finance Commission, 2021). Though dual enrollment is widely available across the state, participation in dual enrollment is not equitable (Bond & Chalasani, 2018; Flamini & Chalasani, 2019; Rauschenberg & Chalasani, 2017). In a longitudinal analysis of enrollment and outcomes from 2008 to 2016, Rauschenberg and Chalasani (2017) showed that Black students' representation in dual enrollment was, on average, nine percentage points below their overall

enrollment in public schools across the state. Additionally, while dual enrollment participation increased among students from other racial groups, enrollment decreased among Black students (Rauschenberg & Chalasani, 2017). In a separate study using data from the 2017-18 school year, Flamini and Chalasani (2019) reported that while Black students accounted for 37% of public high school students, they accounted for only 28% of students in dual enrollment courses. Comparatively, during the same year, White students represented 41% of school enrollment yet accounted for 56% of students in dual enrollment (Flamini & Chalasani, 2019). Beyond enrollment, in Georgia, Black students also attempt and complete fewer credits than their White peers (Berry et al., 2022), which is another indicator that Black students are not fully participating in dual enrollment.

In 2020, the State Legislature passed HB 444, which in part refined dual enrollment eligibility and funding parameters to limit what was viewed as growing costs of the program (Lee & Owens, 2019). A study by the Georgia Budget and Policy Institute (GBPI) found that during fiscal year (FY) 2019, students enrolled in rural school districts were more likely to participate in dual enrollment compared to students enrolled within the metro Atlanta area (Lee & Owens, 2019). As with earlier reports on dual enrollment, this most recent report by the GBPI also found that Black and Latino students were underrepresented in dual enrollment, while White students were overrepresented (Lee & Owens, 2019). The report highlighted several strengths of the state's dual enrollment program, particularly the affordability of the program, flexibility in course delivery, and funding allocation for high schools and colleges. However, a key critique or weakness is the lack of data on student outcomes; a supporting recommendation is for the state to collect and publish data to evaluate the dual enrollment program (Lee & Owens, 2019).

Role of School Contextual and Compositional Characteristics on Educational Equity

In this section, I explore the relationship between equitable access to academic programming and school contextual factors. Specific focus is given to school climate, school demographic composition, teacher bias in education, and teacher-student racial matching. Empirical evidence demonstrates that these factors significantly influence racial equity within academic context such as gifted programs, Advanced Placement, and Algebra placement. This body of research highlights how contextual and compositional characteristics of schools can influence access to, and the outcomes of, these academic programs.

School Climate

Broadly defined, school climate is a multidimensional construct that considers schools' goals, culture, values, and resources. It reflects the overall atmosphere and quality of life within the school. It is shaped by the experiences of students and staff and reflects the "norms, goals, values, interpersonal relationships, teaching, learning and leadership practices, and organizational structures" (National School Climate Center, 2007, p. 5). Positive school climates "fosters youth development and learning necessary for a productive, contributive, and satisfying life in a democratic society. This climate includes norms, values and expectations that support people feeling socially, emotionally and physically safe" (National School Climate Center, 2007, p. 5). Based on a review of school climate research, Thapa et al. (2013) noted that for decades, going back as far as the early 1900s, educators and scholars have recognized the importance of school environment, culture, and climate on "the life and learning of students", with many educators and researchers observing that "school-specific processes accounted for a great deal of variation in student achievement" (p.358). Interest in and scholarship on school climate has continued to increase, especially as many state departments of education have included school

climate as a component of their school improvement efforts (Graham, 2022; Thapa et al., 2013; Voight et al., 2013).

Implications of Positive School Climate

There is an extensive body of literature that demonstrates the influence of a positive school climate on student engagement and academic achievement. For example, Thapa et al. (2013) conducted a substantive literature review of over 200 published studies on school climate. The review focused on five dimensions of school climate: (a) safety (e.g., rules and norms, physical safety, social-emotional), (b) relationships (e.g., respect for diversity, school connectedness/engagement, social support, leadership, and students' race/ethnicity and their perceptions of school climate), (c) teaching and learning (e.g., support for academic learning), (d) institutional environment (e.g., physical surrounding, resources, supplies), and (e) school improvement process (Thapa et al., 2013). Based on their review, the authors concluded that "school climate matters" and that a positive school climate is directly and positively associated with academic engagement and achievement (e.g., graduation rates and student learning), is associated with risk prevention, and promotes healthy development among students (Thapa et al., 2013).

Another review of 78 peer-reviewed articles focused on the extent to which a positive school climate can disrupt or mitigate the associations between low socio-economic status and student academic achievement (Berkowitz et al., 2017). In their review, Berkowitz et al. (2017) confirm claims of other studies in finding that a positive school climate matters. Their results demonstrate that "a positive school climate mitigates the negative effect of poor SES background on academic achievement" (p. 453) and that schools and classrooms with a positive school climate "could narrow achievement gaps among students from different SES and ethnic

backgrounds". They further suggest that "by promoting a positive climate, schools could allow greater equality in educational opportunities, decrease socioeconomic inequalities, and enable more social mobility" (Berkowitz et al., 2017, p. 458).

Variation in Perceptions of School Climate

While school climate has been linked to important outcomes for students, how students perceive their school environment is influenced by their personal experiences, cultural backgrounds, and school factors, leading to diverse perceptions of school climate (Parris et al., 2018). Notably, racial disparities in students' perceptions of school climate are well-documented. Research consistently demonstrates that Black students across different educational levels tend to report less favorable views of their school climate compared to their White and Asian peers (Graham, 2022; Konold et al., 2017; Parris et al., 2018; Pena-Shaff et al., 2018; Thapa et al., 2013).

For example, in a study conducted by Pena-Shaff et al. (2018), the authors explored the racial and ethnic differences in students' perceptions of school climate and disciplinary practices across three high schools in New York. Their findings indicated that Black students were more likely to perceive unfair treatment from teachers in comparison to White, Multiracial, or Asian American students (Pena-Shaff et al., 2018). Specifically, Black students reported feeling that their teachers treated other Black students more harshly than students from other racial groups. Additionally, they believed that Black students were disproportionately suspended for the same infractions as their peers. The study also revealed that Black students' views on differential treatment in disciplinary actions were closely related to their perceptions of whether teachers and other school staff supported their learning by maintaining high expectations, offering academic support, and listening to students (Pena-Shaff et al., 2018).

The variation in perceptions of school climate, particularly along racial lines, underscores the complexity of the school environment and its impact on students' educational experiences. For instance, Graham (2022) found that Black students consistently reported less favorable perceptions of school climate compared to White students. This Georgia-based study of middle and high schools identified several key factors contributing to differences in climate perceptions based on race, such as higher rates of disciplinary infractions, a larger proportion of novice teachers, and greater student-to-teacher ratios. Schools with higher proportions of Black students and students from low-income backgrounds were associated with more negative climate perceptions. Notably, the study also found that a greater proportion of Black teachers within schools helped narrow the racial school climate gap (Graham, 2022).

These findings highlight the persistent influence of structural inequalities and racism within educational settings. Graham (2022) situates this school climate gap within the broader context of racism in educational environments, revealing how these school environments continue to disadvantage students from racially marginalized groups. Similarly, Konold et al. (2017) analyzed survey data from over 323 schools in Virginia and found that Black students perceived their teachers as less supportive yet holding higher expectations of them and viewed their school's disciplinary practices as less structured and fair. They suggest that students' perceptions of support and fairness play a critical role in their academic engagement. Specifically, when Black students perceive their teachers as unsupportive or disrespectful, their responsiveness to academic expectations may diminish, thus affecting their overall school engagement. They may be less engaged and responsive to a teacher's academic expectations if they believe the teacher lacks support, respect, or concern (Konold et al., 2017).

The evidence from these studies points to the importance of understanding and addressing variations in students' perceptions of school climate. Without acknowledging the challenges that inform students' perceptions of school climate, efforts to improve access to opportunities such as advanced coursework may inadvertently reinforce existing disparities.

Exploring the Relationship between School Climate and School Characteristics

The relationship between school climate and various school structural characteristics has garnered attention from researchers aiming to understand how these elements interact to shape students' experiences. For example, Voight et al. (2015) investigated this relationship by analyzing multiple sources on 7th-grade students in California. Their study examined several factors, including school norms regarding respect for diversity (measured as a composite score of teacher responses to Likert-type items), racial and economic characteristics, student-teacher ratios, the proportion of Black or Hispanic teachers, academic performance across multiple content areas, geographic location, and student perceptions of school climate. Using multilevel regression models, they found that in racially diverse schools, where both Black and White students were well-represented, Black students reported lower perceptions of school safety, connectedness, and quality of relationships with adults. However, no significant differences between Black and White students' perceptions of safety or connectedness were observed in schools serving a high proportion of students from low-income backgrounds. Furthermore, the study revealed a statistically significant relationship between racial disparities in academic outcomes and school climate, with schools exhibiting larger gaps in academic performance between Black and White students also displaying wider disparities in perceptions of safety and connectedness (Voight et al., 2015).

The findings from Voight et al. (2015) suggest that school-level factors, particularly racial diversity and economic composition, play a significant role in shaping how students perceive their school climate. Schools with both racial and socioeconomic diversity tend to foster environments where perceptions of safety and connectedness differ considerably across racial groups. This underscores the importance of considering the intersection of race and school characteristics when evaluating students' experiences of school climate.

Building on these insights, Jones and Fleming (2021) further explored how school climate varies across racial and ethnic groups and its relationships to academic achievement. Their analysis, based on multilevel models predicting academic grades for students in grades 3 to 12, revealed that more positive school climates were associated with smaller academic disparities between White students and students of color. The finding reinforces the idea that institutional factors, rather than individual student characteristics, contribute to racial inequities in education. In their discussion, Jones and Fleming (2021) drew on the concept of the education debt (Ladson-Billings, 2006), which shifts the focus from individual student characteristics to institutional factors and emphasizes the historical and systemic disadvantages faced by students of color.

Taken together, these studies highlight the complexity of interpreting school climate data, particularly when examining it through a racial equity lens. The varying experiences and perceptions of school climate among students from different race and ethnic backgrounds suggest that school climate cannot be uniformly understood across diverse student populations. Black students and students from other racially marginalized groups frequently report different experiences related to safety, connectedness, and relationships with adults compared to their White peers (Voight et al., 2015). This evidence supports using more nuanced group-specific

measures of school climate that can better reflect the perspectives of Blacks and students from other marginalized groups.

Racial and Economic Composition of Schools

The socioeconomic composition of schools is closely associated to students' access to high-quality learning opportunities and academic support, serving as a predictor of academic achievement and attainment (National Academies of Sciences, Engineering, and Medicine, 2019; Ryabov, 2011). Schools that serve a large proportion of students from low-income backgrounds often lack the instructional and human resources necessary to adequately support students' academic and socio-emotional needs (National Academies of Sciences, Engineering, and Medicine, 2019). This issue is exacerbated by the legacy of racism and racial segregation, which has contributed to the disproportionate enrollment of Black students in schools with high concentrations of economically disadvantaged students (National Center for Education Statistics, 2023a). As a result, Black students are often less likely to be taught by experienced and qualified teachers and have limited access to high-quality, rigorous coursework, including dual enrollment, AP courses, and Algebra (Clotfelter et al., 2007; Lankford et al., 2002; National Academies of Sciences, Engineering, and Medicine, 2019; Sass et al., 2012).

In a national study, Barnard-Brak et al. (2011) examined the availability of AP courses in relation to the racial/ethnic and economic composition of schools. Their findings revealed an inverse relationship between school demographic composition and access to AP courses; schools with higher proportions of students from racially and ethnically marginalized groups and low-income backgrounds were less likely to offer AP courses and offered fewer AP courses compared to schools with fewer students of color (Barnard-Brak et al., 2011). Similarly, Excel*in*Ed (2018), drawing on data from the 2015-2016 CRDC, found that while 88% of low-minority schools

offered Algebra I, only 75% of high-minority schools did. Additionally, 67% of low-minority schools offered at least one dual enrollment course, compared to only 31% of high-minority schools (ExcelinEd, 2018).

Diette (2012) analyzed middle schools in North Carolina and found that even in racially integrated schools, Black students were less likely to enroll in Algebra 1 than their White peers. The largest disparities in Algebra I enrollment occurred in these integrated schools, and a negative relationship was observed between the proportion of White teachers in a school and Black students' enrollment in Algebra I, suggesting that faculty racial composition may influence enrollment patterns in advanced courses (Diette, 2012).

Beyond academic resources, the racial composition of schools has significant implications for nonacademic outcomes. For Black students, attending schools with a substantial number of Black peers can foster a sense of belonging and create identity-affirming spaces. Such environments can serve as protective factors, buffering students from the negative effects of institutional and instructional barriers, including spotlighting or being marginalized (Andrews, 2012; D. J. Carter, 2007; Houston II et al., 2020). These findings underscore the broader importance of racially congruent school environments in cultivating supportive and inclusive climates for Black students.

Teacher Racial Bias in Education and Teacher-Student Racial Matching

The racial composition of schools not only influences students' experiences but also intersects with the makeup of the teaching workforce, which carries implications for educational equity. In response to enduring systemic barriers that hindered true integration following the *Brown v. Board of Education* decision, former Secretary of Education Richard Riley emphasized the need for diversity in the teaching force to meet the needs of a pluralistic society (Riley,

1998). However, as Horsford (2011), the resistance from White administrators post-Brown led to the mass dismissal and forced resignation of qualified Black educators, severely undermining this ideal. As evidence of this, in the decade after the Brown decision, approximately 38,000 Black educators across 17 southern and border states were dismissed, leaving lasting challenges to achieving a diverse teaching workforce that is still evident today (Horsford, 2011; Will, 2019).

As of the 2017-18 school year, Black teachers made up only 7% of the K-12 teaching workforce, while White, non-Hispanic teachers accounted for 79% (Spiegelman, 2020). This significant decline in the presence of Black educators has had, and continues to have, profound implications for the quality of education that Black students receive (Milner & Howard, 2004, p. 286). The loss of Black teachers, who often serve as cultural brokers and role models, remains a critical issue in addressing racial disparities in educational outcomes.

Black teachers often represent surrogate parent figures, as they serve as advocates for students' overall development, role models, counselors (personal, professional, academic), disciplinarians, and as protectors (McKinney de Royston et al., 2021; Milner & Howard, 2004). Conversely, a predominantly White teaching workforce has been associated with racial disparities in advanced or accelerated learning programs, where Black students and other racially marginalized groups of students are underrepresented, and special education placements, where they are overrepresented (Annamma et al., 2019; Cheng, 2019; Ford, 2014; Ford et al., 2023; Lamb et al., 2019; Whiting & Ford, 2009).

Williams (2011) defines racial bias as a subjective and often irrational judgement based solely on an individuals' race, a factor that continues to influence the educational experiences of Black students. For example, in a study examining the role of racial and gender bias on counselor recommendations for advanced coursework, Francis et al. (2019) conducted a randomized

correspondence audit in which they asked high school counselors to evaluate student transcripts and provide a recommendation on whether the student would be recommended for an AP Calculus course. The content of the transcripts was identical, though the student names represented a chosen race and gender combination. Using this design, the study revealed that differences in counselor recommendations can be attributed to bias. Findings from this study indicate that across all transcript profiles of high school students, Black female students were least likely to be recommended for the course (Francis et al., 2019).

The presence of Black teachers can also positively impact Black students' academic and social success. For example, Gershenson et al. (2022) conducted a study to examine the long-term effects of having a Black teacher on Black students' academic outcomes. In this study, the authors leveraged data from the Tennessee STAR project, an experimental study that began in 1986 and was designed to assess the impact of class size on student achievement (Gershenson et al., 2022). Using data from this project, the authors matched students to college enrollment to examine the impacts of having a Black teacher in elementary school on both Black and White students' high school graduation, college aspirations, and college enrollment. Results from the study indicate that Black students who were randomly assigned to at least one Black teacher between grades K-3 were more likely to graduate from high school (9 percentage points) and to enroll in college (6 percentage points) than their same school, same-cohort Black peers who were not assigned a Black teacher (Gershenson et al., 2022).

In another study, Hart (2020) examined how the presence of Black teachers in advanced-track courses affects Black high school students' enrollment and performance in these courses. Using detailed administrative data from North Carolina and school-course fixed effects models, the research explores whether Black students were more likely to enroll in advanced courses

when they have access to at least one Black teacher in the advanced-track teaching staff. The results found that access to at least one Black teacher in advanced-track courses was associated with a modest but significant two-percentage-point increase in the likelihood of Black students enrolling in these courses. This effect was particularly pronounced for higher-achieving Black students, indicating that Black teachers may encourage enrollment among academically prepared students. The study emphasizes the role of teacher race in shaping Black students' academic pathways and suggests that Black teachers may act as both role models and advocates for students of color, helping to close gaps in advanced course participation.

Across grade levels, studies show that teacher expectations matter. Simply stated, "expecting more of a student can raise achievement while expecting less can cause lower achievement" (W. R. Allen et al., 2008, p. 224). Unfortunately, as shown in this literature review, teacher racial bias toward Black students has negative effects on the opportunities they are afforded. It is an oversimplification to expect that a more diverse teacher workforce could address or eliminate racial disparities in educational outcomes. However, numerous studies show that the presence of Black teachers is crucial, as they may serve as a protective factor against both explicit and implicit forms of racial aggression. Their presence may also encourage Black students to enroll in accelerated learning opportunities and enhance their overall experience by ensuring high expectations and employing culturally relevant, sustaining pedagogy that reinforces Black students' sense of identity (Gershenson et al., 2016, 2022; Goldhaber et al., 2019; Gottfried et al., 2022; Hart, 2020).

Theoretical Framework

This study is grounded in Critical Race Theory (CRT), a framework that centers race and racism as fundamental forces shaping the experiences of Black high school students. CRT

highlights the structural barriers and lived realities that contribute to educational disparities, providing a lens to understand how systemic racism impacts Black students' access to and participation in dual enrollment (DeCuir-Gunby & Schutz, 2017). By centering Black students' voices and experiences, CRT challenges dominant narratives and advocates for transformative change, making it an ideal framework for addressing the underrepresentation of Black students in dual enrollment and advancing equity within educational systems.

CRT emerged at the tail end of the civil rights movement in response to a perceived stalling or decreased momentum in traditional civil rights litigation (Ladson-Billings, 1998; E. Taylor, 2016). Following substantial, if not monumental, legal victories in the 1950s and 1960s, which legally addressed discrimination in schooling, employment, and housing, there arose backlash and hostility against progressive racial reforms and policies that attempted to address racial discrimination (E. Taylor, 2016). This resulted in behaviors such as White flight and discriminatory practices in hiring and financial lending, which re-established segregated neighborhoods and "cemented underclass status for many families of color" (E. Taylor, 2016, p. 2). Legal scholars, including Derrick Bell, Kimberlé Crenshaw, Richard Delgado, and Mari Matsuda, among others, who were frustrated by the slow pace of traditional approaches to racial reform, began to openly critique the role of law in maintaining "racially based social and economic oppression" (E. Taylor, 2016, p. 2). Through their continued engagement and scholarship, the architects of CRT established that majoritarian self-interest was an important element in the shifts of civil rights legislation and the fight for racial reforms. In their critique of the law, they were intentional in defining racism as the "larger, systemic, structural conventions and customs that uphold and sustain oppressive group relationships, status, income, and educational attainment" (E. Taylor, 2016, p. 3) and not merely individual acts of racism.

According to Ladson-Billings (1998), in the education field, CRT can be applied as a framework and explanatory tool for examining inequity experienced by people of color. This framework provides a "set of basic insights, perspectives, methods, and pedagogy that seeks to identify, analyze, and transform those structural and cultural aspects of education that maintain subordinate and dominant racial positions in and out of the classroom" (Solórzano & Yosso, 2002, p. 25). Education scholars and other critical race theorists acknowledge that CRT is not a rigid framework. Instead, it provides a set of foundational tenets, described below, which are largely agreed upon and referenced regularly. Sablan (2019) highlights that these tenets offer a framework for understanding how CRT operates both as a theoretical and methodological tool and how it has been applied in education research.

First, critical race theorists argue that racism is a normal factor of daily life that influences all aspects of American society. It is so deeply embedded in the social structure that if often appears normal and natural (DeCuir-Gunby et al., 2018; Taylor, 2016). This tenet suggests that across all systems and structures, including political, legal, economic, and educational systems and structures, a racial hierarchy exists that privileges White people (DeCuir-Gunby et al., 2018; Taylor, 2016). Though studies and narratives may "expose" the existence of racism, because of the ordinariness of racism and the inherent nature of racism in American society, addressing and eradicating it is difficult, if not impossible (Delgado & Stefancic, 2001). Outside of CRT, scholars who investigate racism may focus on individual acts of racism and may even consider institutional racism. However, a distinguishing aspect of CRT is the belief that racism is the "usual way [American] society does business, the common, everyday experience of most people of color in this country" (Delgado & Stefancic, 2001, p. 7).

A second tenet of CRT is the concept of interest convergence, which suggests that racial progress or efforts toward racial equality occur only when it converges with the interests of Whites (Bell, 1980). As such, for White people, the push for racial justice is not driven by altruism but instead by alignment and congruence with their interests. Thus, Black people and people from other racially marginalized groups who seek racial justice must "find the point where the interests of Whites and people of color intersect" (Ladson-Billings, 1998, p. 8).

CRT theorists also view race as a social construction, meaning that racial groups and categories are socially constructed and are products of an ever-changing society. These categories do not correspond to biological or genetic reality; they are not objective, inherent, or fixed. Thus, these categories, which are not based on any scientific reality, can and do shift over time based on society and to maintain White supremacy (Delgado & Stefancic, 2001; Ladson-Billings, 2021; Omi & Winant, 2014). They have been constructed and are defined by phenotypic traits such as skin color, hair texture, eye color, nose, lip size, and are used to create and maintain racial hierarchies and an ideology of White supremacy (Ladson-Billings, 2021). Though there are no genetic differences between these racial categories, critical race theorists acknowledge the social reality that there exists "significant disparities in the life chance of people based on the categorical understanding of race" (Ladson-Billings, 2021, p. 349).

When using CRT as a framework, scholars use storytelling and counter-storytelling to challenge majoritarian stories of racial privilege; through storytelling, CRT scholars center the experiences of people who are largely excluded from narratives in the dominant culture (Delgado & Stefancic, 2001; Solórzano & Yosso, 2002). Ladson-Billings (Ladson-Billings, 1998) notes that storytelling is used as a tool to critically assess information, be it "myths, presuppositions, and received wisdom" (p.11), that are dominant in common culture but are void of critiques of

race/racism and excludes or negates the experiences of Blacks and other racially marginalized groups. According to Solórzano and Yosso (2002), storytelling and counter-storytelling are methods of incorporating and centering the experiences of people whose "experiences are not often told" and is a tool by which to present narratives and experiences that are in opposition to the dominant story.

Another tenet is the critique of liberalism or challenge to dominant ideology. Liberal claims of objectivity, meritocracy, colorblindness, and incremental change are prevalent within educational institutions and function to uphold or maintain oppressive systems as educators fail to acknowledge race-related patterns in achievement or participation and ways in which racism may contribute to these patterns (Dixson & Rousseau, 2005; Solórzano & Yosso, 2002; E. Taylor, 2016). Critical race theorists argue that colorblindness, specifically the absence of any race-specific or race-focused analysis, is regressive and should be countered with aggressive race-conscious policies (Delgado & Stefancic, 2001). These ideologies often conceal the self-interest, power, and privilege of dominant groups and act as a barrier to critical reflection, influencing educators' roles in maintaining or producing these inequitable outcomes (Dixson & Rousseau, 2005; Solórzano & Yosso, 2002).

Intersectionality is in response to or an acknowledgment that we each represent multiple identities and no one person has a single or unitary identity, but instead often have conflicting and overlapping identities (Delgado & Stefancic, 2001; Ladson-Billings, 2021). Critical race scholars argue that it is not sufficient to prioritize or see race/racism as the operating factor but instead acknowledge and examine the impact of these intersections and engage in the "messiness of real life" (Ladson-Billings, 2021, p. 350). Finally, CRT scholarship is oriented towards social justice. CRT offers "a liberatory or transformative response to racial, gender and class

oppression" (Solórzano & Yosso, 2002, p. 26). Though idealistic, scholarship which advocates for transformative policies and practices aims for "full participation for members of communities who have been historically excluded from engaging meaningfully in institutions, society, and our democracy" (Garces & Gordon Da Cruz, 2017, p. 323).

Though racial disparities in education outcomes have been widely documented, some scholars (Harper, 2012) argue that in education policy and practice, little has been done to develop a conceptual model or coherent theory to examine and provide the tools to overcome racial inequities in education (Harper, 2012; Perna, 2007; E. Taylor, 2016). As a result, studies that do examine or identify racial disparities in educational outcomes often attribute these differences to student under-preparedness, their limited cultural capital, or other sociological status attainment models that primarily consider the effects of socioeconomic status on academic attainment and educational aspirations (P. L. Carter, 2003; Harper, 2012; Harper et al., 2018; Perna, 2007). CRT offers a framework to eschew these traditional practices and instead focus on systemic structures, policies, and practices that contribute to these educational disparities and to understand Black students' experiences within these systems. Additionally, specific tenets such as interest convergence (Bell, 1980), counternarratives or storytelling (Solórzano & Yosso, 2002), and intersectionality (A. Harris & Leonardo, 2018; Ladson-Billings, 2021) serve as explanatory and methodological tools to inform research (Sablan, 2019).

It is not lost on me that we are in a period of retrenchment. Critical race scholars refer to the concept of retrenchment as the process or period during which any meaningful race reforms are nullified through the political process or through the legal system (Beratan, 2008; Crenshaw, 1988). Moving into the end of 2024, scholarship on CRT is being heavily censored and denounced in public dialogue by those interested in censoring educational discussions of

America's history of racism, race, or racial justice in American schools (Robinson, 2021). Across K-12 schools and districts, anti-CRT efforts have included banning books related to issues of race and racism or simply written by people of color (Robinson, 2021). There are also legislative policies that systematically ban and prohibit public schools from teaching topics related to race and racism, diversity, equity, discrimination, and oppression (Ray & Gibbons, 2021; Robinson, 2021). However, even with this political context, CRT remains an appropriate theoretical framework to advance understanding of how school contextual and compositional factors are associated with Black students' underrepresentation in dual enrollment.

Chapter Summary

In this chapter, I examined the significant role that school climate, alongside school compositional and contextual factors, plays in shaping Black students' access to dual enrollment programs. Starting with a historical overview of dual enrollment, both nationally and in Georgia, I outlined the key factors influencing access to these programs, including school climate, racial and economic composition, teacher-racial bias, and teacher-student racial matching. The reviewed literature clarifies that while dual enrollment participation is increasing, there remains a gap in understanding how school-level factors impact Black students' representation in these programs. Furthermore, while much of the existing research focuses on student-level characteristics, the literature highlighted in this chapter underscore the importance of school-level characteristics in understanding the persistent inequities in dual enrollment participation. These insights point to the need for more focused efforts to address the systemic barriers that continue to limit access for Black students.

The research clearly shows that Black students are disproportionately enrolled in schools that lack the necessary resources and a diverse teacher workforce, both of which are critical for

providing the necessary support to Black students to access programs like dual enrollment. To examine these systemic inequities, I employed CRT as the guiding framework for this study, allowing for a deeper examination of how race and racism shape educational access and opportunities for Black students.

3 METHODOLOGY

This chapter begins with an overview of the research problem, the study's purpose, and study design. I then provide an overview of the research context, outline the foundational concepts of mixed methods research, and detail each phase of the study. This includes a thorough explanation of the data sources, sampling strategies, data collection procedures, and methods of data analysis.

Overview of the Research Problem

Since dual enrollment was introduced as an option for students in Georgia, access to and participation in the program has steadily increased (Berry et al., 2022; Georgia Student Finance Commission, 2020). However, despite the continuous growth of dual enrollment across the state, Black students remain proportionally underrepresented. According to two reports released by the GaDOE for the period covering the period between 2008 and 2018, the representation of Black students in dual enrollment was, on average, nine percentage points lower than their overall enrollment in public schools statewide, while White students were overrepresented by approximately 15 percentage points (Flamini & Chalasani, 2019; Rauschenberg & Chalasani, 2017).

Although several studies highlight inequitable participation rates in dual enrollment both in Georgia and nationally, there's a notable gap in the literature regarding the association between school contextual and compositional factors and these disparities (for exceptions, see: Pretlow & Wathington, 2013; Spencer & Maldonado, 2021; Xu et al., 2021). Much of the existing research on racial disparities in dual enrollment participation centers on students' individual characteristics and prior academic experiences, thereby neglecting the influence of school-level contexts that may restrict or discourage participation in certain academic programs

(W. R. Allen et al., 2008). This study aims to address this gap by investigating the school-level characteristics that are associated with Black students' representation in dual enrollment in Georgia and the extent to which Black students' perceptions of school climate influence their decisions regarding participation.

Research Purpose

The purpose of this study was twofold. First, I sought to examine the school-level characteristics associated with Black students' representation in dual enrollment, focusing on the relationship with Black students' collective perception of school climate. Second, the study aimed to explore how Black high school students' perceptions of their school's climate influenced their decisions regarding dual enrollment participation. The study's objectives and corresponding research questions align closely with a mixed-methods approach. While a purely quantitative study could offer valuable insights into the extent of equitable representation of Black students in dual enrollment, such an approach would omit the perspectives and decision-making experiences of students themselves. Therefore, a mixed-methods approach was deemed most appropriate.

Review of Research Questions

The central question being explored, using a Critical Race Mixed Methods (CRMM) approach, is: *What is the relationship between school climate and Black students' participation in dual enrollment across high schools in Georgia?* As a mixed methods study, two primary research questions, one quantitative and one qualitative, were developed to address this question. Using secondary data retrieved from Georgia state education agencies, the central quantitative question explored was *to what extent does a relationship exist between schools' compositional and contextual factors and Black students' proportional representation in dual enrollment in*

public high schools in Georgia during the 2021-22 school year? School-level data allow for a broad understanding of whether factors such as Black students' collective perception of school climate, student demographics, teacher demographics, school operational characteristics, or school location are associated with equitable representation in dual enrollment. The following questions guided this phase of the study:

1. What were Black high school students' perceptions of their school climate? How does Black students' perception of school climate vary based student-body demographics, teacher demographics, teacher experience, total enrollment, school operational characteristics, and location?
2. To what extent were Black high school students proportionally represented in Georgia's dual enrollment program? How does Black students' representation in dual enrollment vary based on student-body demographics, teacher demographics, teacher experience, total enrollment, school operational characteristics, and location?
3. What is the relationship between Black students' collective perception of school climate and Black students' representation in dual enrollment in high schools across the state of Georgia, controlling for student-body demographics, teacher demographics, teacher experience, total enrollment, school operational characteristics, and location?

The qualitative study centered on Black students' experiences and perspectives of school climate; the central qualitative question explored was *how do Black high school students' perception of their high school's climate inform their decisions regarding dual enrollment participation?* Semi-structured interviews with nine Black high school students explored their varied experiences in high school, their perceptions of school climate, and how they believe various aspects of school climate influenced their access to dual enrollment and the decision-

making process on whether to participate.

My Positionality: Who I Am and How I Enter This Work

This study was designed with a deep interest in the challenges and disparities within the U.S. educational system, particularly as they affect Black students. As a Black woman of Afro-Caribbean descent, my racial and ethnic identities critically shape my engagement with this research. My U.S.-based academic journey, from a high-minority, under-resourced high school to predominantly White education institutions, profoundly influenced my understanding of systemic racism, not as an abstract, but as a pervasive reality that shapes educational opportunities and outcomes.

Although dual enrollment and AP courses were theoretically available in high school, these options were not discussed with me or my parents. In hindsight, this was likely due to my newly immigrated status and institutional biases in identifying the "right student" for those opportunities. This exclusion highlighted how educational disparities persist and underscored the significant impact of teacher and counselor biases, coupled with limited school resources.

My study is informed by a "heightened critical consciousness" a term that captures my awareness of how traditional research methods have often perpetuated a racist narrative that marginalizes Black students' experiences (Tabron, 2019). As such, my research is firmly rooted in the principles of CRT and QuantCrit, guiding me to scrutinize and challenge the racial inequities entrenched in the educational system. As stated by Goar (2008), "research is impacted by broader social relations at every stage – inception of a question, design of a study, collection of data, interpretation of finding" (p. 154). As such, my approach is not from a supposed objective stance but from a position deeply intertwined with my lived experiences. These experiences do not bias my research but rather enrich it, allowing me to center Black students'

experiences authentically and critically, examining the structures that shape their educational opportunities and outcomes.

Research Design

The primary purpose of this study was to investigate the relationship between school contextual and compositional factors and the equitable representation of Black students in dual enrollment, as well as to explore the extent to which Black students' perceptions of school climate influenced their decision-making regarding dual enrollment participation. To do this, an explanatory sequential (QUAN -> QUAL) Critical Race Mixed Methods (CRMM) design was used. As DeCuir-Gunby (2020) explains, "the goal of CRMM is to expose issues of racism, challenge racial structures, and promote social change through the use of a mixed methods design" (p.5). In an explanatory sequential mixed methods design, data collection and analysis occur in two phases, beginning with quantitative data collection and analysis. Results from the quantitative analysis will then inform data collection (sampling and instrument development) for the qualitative phase of the study (Dawadi et al., 2021; Johnson & Onwuegbuzie, 2004; Teddlie & Tashakkori, 2009).

In the first phase of the study (QUAN), I conducted a quantitative analysis of statewide, school-level secondary data, comprising school-level administrative data and a student survey (aggregated to the school level) collected by the GaDOE for the 2021-22 school. This analysis aimed to examine the relationship between school factors and the proportional representation of Black students in dual enrollment. This phase of the study was informed by QuantCrit. QuantCrit, as outlined below, is a framework informed by CRT that is employed to guide quantitative research (Gillborn et al., 2018). In the second phase of the study (QUAL), I conducted semi-structured interviews with nine Black high school students across the state of

Georgia who identified as Black and were enrolled in 11th or 12th grade at the time of the interview.

Equal emphasis was placed on both phases of the study as the quantitative phase sought to provide an understanding of the problem across the state, while the qualitative phase was used to expand the discourse around Black students' representation in dual enrollment to more substantively understand how Black students experience their school environment and how those experiences influence their decisions on participating in dual enrollment (Frels & Onwuegbuzie, 2013; Leech & Onwuegbuzie, 2007). Data analysis occurred at the end of each phase of the study. Although the study period for the quantitative phase was historical, the results from the QUAN phase of the study were used to inform the design of the qualitative phase of the study, particularly informing sample selection. Results from both phases were then integrated to inform inferences and conclusions. CRT was used to guide the study from design through integration of results from both phases of the study (see Figure 1).

Figure 1

Critical Race Mixed Methods Design

Phase	Procedures	Outcome
QUAN Data Collection	• Request and collect school-level data and student-level GSHS response data	• Numeric data / Analytical file • School climate scale scores (Black students)

QUAN data analysis	• STATA data analysis:
	  ○ Frequencies
	  ○ Multiple regression
		• Descriptive statistics
		• Examination of relationship between variables
		• Predictive value of school climate and equitable participation in dual enrollment

Results and interpretation	• Summarize statistical results • Compare results with the literature	• Interpretation (summary) of results • Identify schools that match criteria for QUAL study
QUAL data collection	• Recruit nine Black high school students • Develop interview protocol • Conduct interviews • Note-taking and journaling	• Transcripts • Analytic journal
QUAL data analysis	• Thematic analysis • Engage 1-2 peers to review study results	• Coded transcripts • Interview summaries • Units of meaning and themes • QUAL database (NVivo)
Integrate and interpret	• Compare and integrate QUAN and QUAL data	• Interpretation (summary) of results

Definition of Mixed Methods Research

Tashakkori and Creswell (2007) defined mixed methods research (MMR) "as research in which the investigator collects, analyzes data, integrates the findings and draws inferences using both qualitative and quantitative approaches or methods in a single study or a program of inquiry" (p.4). Considered a relatively new research orientation, methodologists who employ mixed methods in their research design do so as an "alternative to the [quantitative] and [qualitative] traditions" (p.7), advocating that methodological approaches and tools should be selected based on the inquiry of interest (Teddlie & Tashakkori, 2009). This approach is most often associated with pragmatism, a paradigm which focuses on "what works" to best examine the topic of inquiry (Dawadi et al., 2021; Teddlie & Tashakkori, 2009).

A benefit to using MMR is the ability to develop a study design that is most relevant to the study question without limitations on the type of methods employed. Mixed methodologists have developed multiple typologies across mixed-model and mixed-method designs, yet there is space for researchers to create research-specific designs to effectively answer their research questions (Johnson & Onwuegbuzie, 2004). This flexibility contrasts with study designs in which only qualitative or quantitative methods are used. In multiple ways, the strengths of MMR directly address the weaknesses of single-method designs (quantitative or qualitative designs) and, in some ways, builds upon the strengths of these single-method designs (Johnson & Onwuegbuzie, 2004; Teddlie & Tashakkori, 2009). Further, a mixed methods design is "useful in addressing issues of equity…because it allows for the thorough examination of multiple sources of data and can be either quantitative dominant (emphasizing the breadth of experiences) or qualitative dominant (emphasizing the depth of experiences)" (DeCuir-Gunby, 2020, pp. 4–5). Further, mixed methods studies can provide the means for critically questioning study results to

understand the phenomenon of interest at a deeper level (Stage, 2007).

In addition to serving as a guide for researchers on how to proceed with a mixed methods study, typologies offer a common language and organizational structure that can be referenced across the field (Teddlie & Tashakkori, 2009). There are five common typologies of mixed methods designs, of which there are multiple permutations. These include parallel designs, sequential designs, conversion designs, multilevel designs, and embedded designs (DeCuir-Gunby & Schutz, 2017; Teddlie & Tashakkori, 2009). Even with these standard typologies, methodologists have sought to simplify these existing typologies as well as allow researchers space to create more study-specific and more complex designs as necessary (Johnson & Onwuegbuzie, 2004). For example, Johnson and Onwuegbuzie (2004) suggest researchers conducting mixed method studies first consider the order of the phases, sequential or concurrent, and the priority of each phase, equal status or dominant status. As another example, according to Teddlie and Tashakkori (2009), Creswell and colleagues identified six types of designs, each representing the order and priority. This study used an explanatory sequential design. Sequential designs, be they explanatory or exploratory, are often used to explore and confirm questions chronologically as researchers use the results from the first phase to inform the design components of the next (Johnson & Onwuegbuzie, 2004). As an explanatory study, data collection and analysis of quantitative data occurs first. Results from this phase of the study were used to inform the design of the subsequent qualitative phase of the study. As a final stage, results from both phases are then mixed or integrated to develop a comprehensive summary of the study (Johnson & Onwuegbuzie, 2004).

Methodological Frameworks: Critical Race Mixed Methods + QuantCrit

A critical race mixed methods (CRMM) is intended to identify and address racial inequities, question systemic racism, and facilitate social transformation through the use of mixed methods research (DeCuir-Gunby, 2020). A CRMM design has the same elements of a traditional mixed methods design, however, with CRMM, CRT is integrated throughout all the stages of the research process, including the research questions, data sources, data analysis, and interpretation (DeCuir-Gunby & Schutz, 2014, 2018).

CRT is a framework and explanatory tool used to examine how racism has shaped America's policies, resulting in racial disparities (Dixson & Rousseau, 2005). In their application of CRT to the education field, Ladson-Billings and Tate (1995) discussed the intersection of race and property rights to explain how educational resources, opportunities, and privileges are distributed inequitably along racial lines, effectively making race a determining factor in who "owns" the benefits of quality schooling. They argued that this dynamic contributes to and sustains broader societal inequities (Ladson-Billings & Tate, 1995). CRT scholars and researchers have collectively articulated five tenets which include (1) the idea that racism is endemic in American society and is a normal part of daily life; (2) interest convergence; (3) a critique of liberalism and a challenge to dominant ideologies; (4) the centrality of experiential knowledge through storytelling and counter-storytelling; and (5) orientation towards social justice (Ladson-Billings, 1998; Ladson-Billings & Tate, 1995; Solórzano & Yosso, 2002).

CRMM studies are distinguishable from traditional MM designs in three ways: (1) they are deeply rooted in CRT, ensuring that race is not a peripheral concern but central to the research; (2) there is an explicit focus on race as a central construct, rather than merely serving a cursory or explanatory role; and (3) CRMM studies are designed to challenge existing power

structures with the goal of social justice (DeCuir-Gunby, 2020; DeCuir-Gunby & Schutz, 2014). As stated by Decuir-Gunby, “in engaging in CRMM, the primary goal of addressing issues of racial equity is embedded within the framework. It enables the researcher to make race central to all interpretations that are made from the data” (DeCuir-Gunby, 2020, p. 8).

Traditional research frameworks and methods used to examine participation in dual enrollment often ignore systemic racism and Black students’ unique experiences within the U.S. education system. Furthermore, traditional research tends to overlook the importance of empowering groups, ensuring accountability, and providing tangible benefits to marginalized communities, even while it draws attention to the issues these communities experience (W. R. Allen et al., 2008). A critical perspective, however, challenges this approach and instead critiques existing power structures to bring attention to power disparities (DeCuir-Gunby & Schutz, 2017).

Since its introduction and application to the education field in 1998, scholars using CRT largely relied on qualitative methods to examine educational problems (DeCuir-Gunby et al., 2018; Sablan, 2019). More recently, however, scholars have begun to use CRT as a framework to inform quantitative inquiry and other methodologies (DeCuir-Gunby et al., 2018). This shift to apply CRT to other methodologies has received some pushback, as researchers have argued that quantitative approaches are rooted in positivism and post-positivism, which embraces assumptions like objectivity and the existence of a universal truth, while qualitative research assumes there are multiple truths and is better suited for critical paradigms (DeCuir-Gunby et al., 2018; Gillborn et al., 2018; Sablan, 2019; Tabron & Thomas, 2023).

While the application of CRT to quantitative methods has faced some challenges, researchers have identified multiple ways in which CRT can productively inform quantitative work. These approaches include variable selection and operationalization (Garcia & Mayorga,

2018), incorporation of intersectionality in statistical models (Castillo & Babb, 2023; López et al., 2018), critical interpretation of results (Castillo & Gillborn, 2022; Gillborn et al., 2018), nuanced data disaggregation (Cruz et al., 2021), development of alternative metrics (Pérez Huber et al., 2018), and in mixed methods approaches (DeCuir-Gunby et al., 2024; DeCuir-Gunby & Schutz, 2018). By employing these strategies, quantitative researchers can align their work with CRT principles, challenging traditional positivist assumptions while leveraging the strengths of quantitative methods to illuminate and address racial inequities.

Quantitative Critical Race Theory (QuantCrit)

In their 2018 article, Gillborn et. al. (2018) introduced QuantCrit as a framework or toolkit for quantitative research guided by CRT. In defining QuantCrit, the authors sought to "build a series of sensitizing concepts and principles that embody a more holistic view of CRT…which embodies the need to apply CRT understandings and insights whenever quantitative data is used in research and/or encountered in policy and practice" (Gillborn et al., 2018, p. 169). While the use of the term QuantCrit is new, scholars such as W.E.B. Du Bois in *The Philadelphia Negro* (Zuberi, 2000), have applied a critical lens in their study of quantitative data to push back against the assumptions that quantitative methods are neutral and objective and to conduct quantitative studies which center people of color (Bonilla-Silva & Zuberi, 2008; Garcia et al., 2018; Zuberi, 2001). This tradition of questioning and critiquing quantitative methods, particularly as it relates to the pervasiveness of racism, is important as the "social concept of race affects how we interpret quantitative representations of racial reality" (Zuberi, 2000, p. 127). This is evident across many quantitative studies which fail to acknowledge the role of racism "thus allowing the faulty assumption that the existence of race relations could be benign" (Zuberi, 2000, p. 127). Gillborn et al. (2018) identified five principles of QuantCrit,

which provide scholars with "tools and language to explicitly verbalize and interrogate how racism influences every aspect of quantitative data collection and analysis" (Castillo & Gillborn, 2022, p. 3).

Centrality of racism. Critical race scholars believe that race/racism is endemic in American society. In alignment with this core principle of CRT, QuantCrit acknowledges that racism is a multifaceted, evolving, and dynamic aspect of that cannot be quantified or measured through traditional statistical methods (Gillborn et al., 2018). Gillborn et al. (2018), and others before them, including Zuberi (2001), Zuberi and Bonilla-Silva (2008), and Goar (2008) contend that research that fails to consider race and/or ignores racism and its historical and continued impact on the education system is likely to reproduce and legitimate existing race inequities.

Numbers are not neutral. As a social construction, racial categories have shifted over time to reflect "society's overt commitment to categorizations of racial superiority and inferiority" (Goar, 2008, p. 154). These changes in racial categories, based on time, space, and ideology, are an indication that numbers are not neutral, objective, or free from researcher bias but instead are "gathered and analyzed in ways that reflect the interests, assumptions, and perceptions of White elites" (Gillborn et al., 2018, p. 170). Through the application of a QuantCrit framework, researchers examine how data were gathered and analyzed and findings generated to identify and expose the "racist logics that may have shaped conclusions" (Gillborn et al., 2018, p. 170).

Categories are neither 'natural' nor given. Though critical scholars understand and acknowledge that racial categories are socially constructed, many quantitative scholars choose to ignore this reality and instead their interpretations of 'race' in quantitative analysis often exclude consequences of systemic racism as contributing factors that produce differential outcomes,

giving way to interpretations that identify ‘race’ itself as a contributing factor, signaling some “pre-existing fixed quality (or lack of it)” (Gillborn et al., 2018, p. 172). Such interpretations mask consequences of systemic racism and may further empower white supremacists to suggest disparities are a result of participants’ racial identities and not acts of racism (Priddie & Renbarger, 2023).

Voice and insight (data cannot ‘speak for themselves’). “All data is socially constructed” (Castillo & Gillborn, 2022, p. 12), meaning that people are responsible for deciding which data are collected, how they are collected, the methods used to interpret the data collected, and the interpretation of the data. Thus, “*data cannot speak for themselves*”. Similarly to CRT, QuantCrit insists that data collection and interpretation should not be done in a vacuum, but should instead be informed by the experiences and insights of those who are directly affected, particularly those from racially and ethnically marginalized groups (Castillo & Gillborn, 2022).

Use numbers for social justice. A grounding principle of CRT, and other frameworks which build upon critical race theory, including QuantCrit, is the use of data and research to challenge systems of oppression; these frameworks and theories are “oriented to support social justice goals and work to achieve equity” (Gillborn et al., 2018, p. 174). The application of QuantCrit rejects and challenges analyses that focus on deficit orientations and rejects notions that statistical research can be “value-free and politically neutral” (Crawford et al., 2018, p. 127; Gillborn et al., 2018). Instead, with a QuantCrit framework, researchers can use quantitative data to construct counter-narratives to advance equitable policies.

By virtue of America’s legacy of racism, the educational experiences of Black students are distinct from those of other racial and ethnic groups, particularly in comparison to White students, who are overwhelmingly represented in the literature on dual enrollment. Much of the

existing research on Black students' participation, or the lack thereof, in dual enrollment disproportionately emphasizes academic preparedness and individual characteristics. This narrow focus overlooks critical factors at the systemic level that constrain Black students' access to academically enriching opportunities. The literature reviewed highlights how systemic racism manifests in under-resourced schools and restricts access to advanced learning opportunities. However, the specific experiences of Black students in dual enrollment remain largely absent from quantitative analyses.

In this study, QuantCrit served as a critical framework for examining dual enrollment participation, specifically challenging the deficit-oriented framing of Black students' limited participation in dual enrollment. The application of QuantCrit guided not only the critique of prior literature but also informed the selection of data sources, variables, and analytical methods. By embedding this framework into all stages of the study, I aimed to produce a nuanced analysis of dual enrollment participation, moving beyond traditional metrics to foreground the systemic barriers that influence access for Black students.

Research Context: Characteristics of High Schools in Georgia

In Georgia, like many other states across the US, schools are segregated by race and economic status, as Black students are more likely to be enrolled in schools with a high proportion of racially marginalized students and a high proportion of students experiencing low incomes (Nowicki, 2022). During the 2020-2021 school year, using data from the Common Core of Data (CCD), there were 433 high schools serving over 526,400 students across Georgia (*Common Core, Education Portal (Version 0.19.0)*, 2023). Approximately 36.5% of students were African American or Black, 37.8% White, 17.2% Hispanic, 5% Asian, and a combined 3.9% were two or more races, Native American or Alaska Natives, and Native Hawaiian or other

Pacific Islanders. Across the state, 37% of high schools were considered high-minority schools, in that 75% or more of their student body were African American/Black, Asian, Hispanic, American Indian/Alaska Native, or Native Hawaiian or other Pacific Islanders (*Common Core, Education Portal (Version 0.19.0)*, 2023). Additionally, most schools (52.3%) were designated as Title I schools, including those that received targeted and schoolwide support.

Within these 433 high schools, the teaching workforce was disproportionally White compared to the student population. Among the approximately 30,500 teachers at these schools, 68.4% were White, 24.6% were African American/Black, 3.2% were Hispanic, and combined, 3.8% were Asian, Native American, or multiracial. Similarly, among school leaders (i.e., principals and assistant principals), 61.3% were White, 35.4% were African American/Black, and the remaining 3% of administrators included those identified as Asian, Hispanic, Multiracial, or Native American (*Common Core, Education Portal (Version 0.19.0)*, 2023). These data suggest that while the State's student population at large is diverse, there is segregation in school enrollment, and the educator workforce is disproportionally White. This context is relevant as school compositional factors are central to the question being studied.

Phase 1: QuantCrit Study on Black Students' Representation in Dual Enrollment

In the first phase of this study, I used secondary quantitative data to examine the relationship between *schools' compositional and contextual factors and Black students' proportional representation in dual enrollment in public high schools in Georgia during the 2021-22 school year*. This phase was guided by QuantCrit, a framework to assess and critique the use of quantitative methods and data, mainly how they can be used to conceal racist assumptions and are "mobilized in uncritical ways that produce racial knowledge that operates to the advantage of dominant White interests" (Crawford et al., 2018, p. 427). In applying

QuantCrit, I acknowledge the limitations associated with using secondary data sources, particularly those collected and reported by local and state education agencies. One significant limitation is the lack of transparency regarding how students are categorized by race and ethnicity, as the processes and criteria are often not disclosed and may vary across schools (Campbell-Montalvo, 2020). This lack of transparency can obscure racial dynamics and potentially perpetuate systemic biases within the data.

Following the guidance of critical scholars (Castillo & Gillborn, 2022; Garcia & Mayorga, 2018), I critically engaged with the datasets, questioned the underlying assumptions related to data collection, categorization, and reporting, and reflected on the methodological choices I made throughout the study in an attempt not to inadvertently reinforce racial inequities. By conducting a single-group quantitative analysis of dual enrollment representation, I aim to center the experiences of Black students and provide a deeper understanding of factors associated with their participation in dual enrollment. This approach highlights the systemic barriers and potential biases that Black students may encounter, with the goal of supporting equitable programming and pathways to advanced educational opportunities.

Data and Measures

For this phase of the study, I constructed an analytical dataset of publicly available school-level data from multiple sources to quantitatively examine the relationship between Black students' representation in dual enrollment and school compositional and contextual factors. Each dataset, as described below, included a four-digit school code and a three-digit system code, which I combined to create a unique identifier for each school. This identifier was used to merge the datasets in Stata to create the analytical dataset.

Georgia Department of Education: School Administrative Data

School-level data on enrollment and dual enrollment participation for grades 9-12 across all public schools in Georgia for the 2021-2022 school year were requested from the GaDOE via their online data request form. GaDOE defines dual enrollment participants as students who are enrolled at any point during the school year and who have at least one or more non-incomplete, non-dropped, dual enrollment courses reported during the same school year (Vignati, M. personal communication, January 19, 2021). The requested file included 501 schools with grades 9-12. For each school, disaggregated by grade, the dataset included (1) *school enrollment*: total school enrollment, number of students categorized as Hispanic, American Indian, Asian, Black, Pacific Islander, White, Two or more races, female, male, economically disadvantaged; (2) *dual enrollment*: total number of dually enrolled students, number of dually enrolled students identified as Hispanic, American Indian, Asian, Black, Pacific Islander, White, Two or more races, female, male, economically disadvantaged; and (3) *school identifiers*: system code, system name, school code, school name, and grade-level. This dataset was used as the primary dataset. Prior to matching with the other datasets, data were aggregated at the school level.

In addition to the requested data, I used the GaDOE website to retrieve lists of charter schools, residential facilities, and alternative and non-traditional school assignments for the study period.

Georgia Department of Education: Georgia Student Health Survey

The GSHS is an anonymous survey administered annually by GaDOE to public school students in grades 3-12. Surveys are administered during a school-designated administration window between October and February of each academic year; students complete the survey online anonymously using a school-designated electronic device; schools are expected to have at

least a 75% response rate (Parris et al., 2018). A passive consent approach is taken, such that students or parents/guardians can opt out of the survey if they do not wish to participate or for their child to participate (Georgia Department of Education, 2021).

The GSHS was designed by multiple divisions within the GaDOE and other agency partners, including Georgia State University. The standard survey, administered to students in middle and high school, covers topics including school climate and safety, peer and adult social support, bullying, mental health, substance abuse, and suicidal ideation (Georgia Department of Education, 2021). As noted by Parris et al. (2018) in reference to an earlier version of the survey, the GSHS "includes a higher order factor called school climate that explains variance, in part, among [seven] lower order factors assessing various dimensions of school climate" (p. 631). Studies using earlier versions of the school climate scale have validated its reliability and have confirmed that school climate is measured consistently across race (Adams & Roach, 2023; Graham, 2022; T. La Salle et al., 2018; T. P. La Salle et al., 2021; Parris et al., 2018). A copy of the GSHS is provided in Appendix A.

Student-level responses to GSHS for grades 9-12 during the 2021-2022 school year were obtained through a formal data request submitted to the GaDOE via their online data request form. The requested dataset included 499 schools with student-level responses to all survey items, along with school identifiers and students' self-reported race and ethnicity. For race and ethnicity, students were asked to self-identify from a list of seven categories: Black or African American; Hispanic or Latino; White or Caucasian; Asian or Pacific Islander; Native American; Mixed Race; and 'I prefer not to answer'. Students were required to select one response and were not permitted to select multiple categories (Georgia Department of Education, 2021). Prior to matching with the other datasets, data were aggregated at the school level.

Governor's Office of Student Achievement: Certified Personnel Information Report

The Certified Personnel Information (CPI) Report was accessed and downloaded from the Governor's Office of Student Achievement (GOSA) website for the study year. According to the GOSA website, the CPI is a statewide data collection effort to "gather information regarding school system employees and includes employees who hold a professional or provisional Georgia certificate for all school systems and schools." GaDOE collects data from school systems at three points during the school year (October, March, and July). Data reported in the CPI report are based on employee beginning and termination dates. Among other data, the downloaded dataset included race/ethnicity and years of experience aggregated for each employee type (i.e. administrators, PK-12 teachers, and support personnel). To meet state and federal regulations, race and ethnicity are collected as two separate fields, allowing the respondent to identify their ethnicity (Hispanic or Not Hispanic) and race separately. The categories for race were Asian, Black, Pacific Islander, White, and multiracial. Employees must select at least one race indicator, though they may select more than one. If respondents select more than one race and select Hispanic as their ethnicity, that person is counted as Hispanic. The CPI report also reports on employees' years of experience. This is defined as the years of experience an educator has in Georgia (Georgia Department of Education, 2020).

National Center for Education Statistics (NCES) – Education Demographic and Geographic Estimates (EDGE).

The NCES EDGE program is a data resource for examining the social and spatial context of education in the U.S. This program leverages spatial data from the NCES and the Census Bureau to create geographic classifications and boundaries and other types of data to support spatial analysis (U.S. Department of Education, n.d.). The locale classifications are categorized

as rural, town, suburban, and city; each classification is divided into three subtypes based on population size or proximity to populated areas. The downloaded data file included the more specific classifications, which were then grouped into the four main locales.

Population and Sample

The population for this study comprised all public schools in Georgia ($N = 501$) with grades 9 through 12 during the 2021-2022 school year. The GaDOE administrative dataset included traditional high schools, charter schools, alternative and non-traditional schools, state juvenile correctional institutions, and state-managed schools. The study sample was limited to schools with grades 9 through 12 to align with dual enrollment policies. Additionally, given my focus on examining the relationship between school compositional and contextual factors and equitable representation of Black students in dual enrollment, I excluded schools managed by the Georgia Department of Juvenile Justice, residential schools, and State Schools due to the unique policies governing enrollment and academic programming at those institutions. Finally, to ensure sufficient analytical power and adequate racial and ethnic diversity within schools, I restricted the sample to schools with at least 15 dually enrolled students, a minimum of 15 Black respondents to the GSHS, and schools where the proportion of Black students ranged between 5% and 95%. Based on these criteria, 221 schools met the inclusion criteria and were included in the study.

Table 1 presents summary statistics on the racial and ethnic composition of the 221 schools in the sample. Across the sample, the average enrollment was 1,376 students. The racial and ethnic composition was 42% Black, 38.1% White, and 13.6% Hispanic, with other groups comprising smaller percentages. Additionally, on average, 10% of students in these schools were enrolled in dual enrollment courses. On average, the dual enrollment population across these

schools had a slightly different racial and ethnic composition, with a higher percentage of White students (45.3%) and lower percentages of Black (36.9%) and Hispanic (10.3%) students. These categories are based on the data provided by the GaDOE.

Table 1

Average Enrollment and Student Demographics (N=221)

	All Students		Dual Enrollment	
	M	SD	M	SD
Average Enrollment	1375.5	820.1	115.0	119.2
Percent Black	42.0	24.5	36.9	28.3
Percent White Students	38.1	23.8	45.3	28.6
Percent Hispanic Students	13.6	10.7	10.3	9.2
Percent Two-or More races	3.7	1.6	3.1	2.8
Percent Asian	2.3	3.8	4.0	6.9
Percent American Indian or Alaska Native	0.2	0.2	0.2	0.6
Percent Pacific Islander	0.1	0.2	0.1	0.5

Definition of Variables

This section defines the variables used in the study. The primary dependent variable of interest was the dual enrollment equity index; the independent variables measure Black students' collective perception of school climate, school race and ethnic composition, school economic diversity, teacher racial diversity, teacher experience, school charter status, schools with lower-level grades, school geographic locale, school enrollment, and proximity to nearest dual enrollment partner institution.

Aligned with QuantCrit principles, which emphasize the need to critically examine and challenge traditional quantitative methods in the context of race/racism, these variables are conceptualized not as neutral factors but as potential mechanisms through which racial inequities in dual enrollment might be perpetuated or mitigated (Suzuki et al., 2021). This perspective is

grounded in the recognition that such characteristics can influence institutional practices and student experiences, potentially reinforcing systemic barriers to equitable educational opportunities. By including these variables, I aim to not only explain the variance in outcomes but also to challenge and critique the roles these school characteristics play in sustaining inequitable educational environments. This approach, while still using regression techniques, acknowledges the complex nature of racial equity in education and aligns with the principles of QuantCrit, specifically foregrounding race in quantitative analyses (Sablan, 2019). This approach also prompts a deeper inquiry into how educational policies and practices can be restructured to foster racial equity in school programs like dual enrollment.

Dual Enrollment Equity Index. For this study, *the Dual Enrollment Equity Index* is the primary dependent variable. The equity index is a measure of proportionality calculated to assess equitable representation in dual enrollment for Black students. The index is derived from the Academic Equity Index (AEI); an approach which uses ratios to determine the extent to which students who are traditionally underrepresented, marginalized, and/or excluded have access to academic programs and resources (Bensimon et al., 2003). This approach has often been used to compare outcomes between racial and ethnic groups within higher education. For example, Perna et al. (2006) used this approach in their descriptive study to assess the status of race equity in college enrollment and degree completion between 1991 and 2001. By using an equity index, the authors were able to examine enrollment and completion trends for specific race/ethnicity groups and make comparisons over time and across states (Perna et al., 2006).

Though the index appears to be an effective method of assessing equitable group representation, there is no universally agreed-upon metric for achieving equity (Sosa, 2017). In an attempt to better identify instances of disproportionate impact, Bensimon and Malcolm-

Piqueux (as cited by Sosa, 2017) examined data from 28 colleges that used the index to identify gaps in achievement between student demographic groups. Based on their analysis, they recommended an index value of 0.85 as a cut-off to identify those groups who were disproportionately impacted (Sosa, 2017).

In another attempt to make sense of the index, Hao (as cited by Royal & Flammer, 2015) created an interpretation guide with four categories: values greater than or equal to 1.0 represent equity (i.e., at or above equity), values between 0.85 and 0.99 indicate being almost at equity, values between 0.70 and 0.85 indicate being below equity, and values below 0.70 are considered to be far below equity (Royal & Flammer, 2015).

For this study, the dual enrollment equity index for black students was calculated using the administrative dataset from GaDOE. The index was calculated as the ratio of two shares or percentages, such that the numerator is the number of Black dually enrolled students divided by the total number of dually enrolled students in each school (Equation (1)). The denominator is the number of Black students divided by the total number of students enrolled in each school. As noted in Table 2, the average dual enrollment equity index for schools in the sample was 0.80 (SD = 0.3).

$$\text{Dual Enrollment Equity Index} = \frac{\text{Black students in dual enrollment} / \text{Total students in dual enrollment}}{\text{Black enrollment} / \text{Total enrollment}} \quad (1)$$

Independent Variables

School Climate: School climate serves as both a dependent variable for the first research question and as the primary independent predictor variable for the third research question. For

this study, I use the NSCC's definition of school climate: "school climate refers to the quality and character of school life. It is based on patterns of school life experiences and reflects norms, goals, values, interpersonal relationships, teaching, learning and leadership practices, and organizational structures" (National School Climate Center, 2007, p. 5). **Black School Climate** represents a school-wide composite score of Black students' collective perception of school climate, derived from student-level responses to the GSHS. The score comprises of 22-items measuring school climate across seven subscales: 1) school connectedness (4 items), 2) peer social support (3 items), 3) adult social support (3 items), 4) cultural acceptance (3 items), 5) social/civic learning (3 items), 6) physical environment (3 items), and 7) school safety (3 items) (Georgia Department of Education, 2021; T. La Salle et al., 2018) (see the GSHS instrument in Appendix A). Items are scored on a four-point Likert-type scale (1=strongly disagree =1 to 4=strongly agree). Black School Climate was calculated by averaging the seven subscale means for respondents who self-identified as Black on the GSHS (T. P. La Salle et al., 2021). Higher scores indicate more positive perceptions of the school environment among Black student respondents, while lower scores reflect less favorable or negative perceptions. This measure was constructed in response to research consistently demonstrating that Black students often report less favorable perceptions of school climate compared to their White or Asian peers (Graham, 2022; Konold et al., 2017; Parris et al., 2018; Pena-Shaff et al., 2018; Thapa et al., 2013). This variable was included in the study to center the experiences of Black students and challenge the neutrality of whole-school climate scores. It acknowledges that a school-wide measure may obscure the distinct experiences of Black students, emphasizing the potential for differing perceptions and experiences within the same school environment. As noted in Table 2, the mean Black School Climate score for schools in the study was 2.97 (SD = 0.13).

School Student Body Composition: These variables were calculated using data from the GaDOE administrative dataset. **School enrollment** was included as a control variable to address variations in school size, which may influence resource allocation and educational practices. As shown in Table 2, the mean enrollment across schools in the study was approximately 1,375 students (SD = 820). The **percentage of racially and ethnically marginalized** students was calculated by dividing the total number of students categorized as Asian, American Indian, Black, Hispanic, Pacific Islander, or two or more races by the total school enrollment (Parris et al., 2018). This measure aims to reflect the diversity of the student population, recognizing that these categories oversimplify complex identities and experiences. It also acknowledges the potential impact of student body diversity on students' educational experiences (Diette, 2012; Leath et al., 2021). On average, 62% of schools' student population were from racially and ethnically marginalized groups. The **percentage of economically disadvantaged** students represents the proportion of students certified by the state as eligible for free or reduced-price lunch. This was calculated by dividing the number of students identified as economically disadvantaged by the total school enrollment. During the 2021-2022 school year, on average, 62% of students in the sample of schools qualified for free or reduced-priced lunch (Table 2). It is important to note that 45% of schools in the sample participated in the Community Eligibility Provision (CEP), a National School Lunch Program and School Breakfast Program (SBP) which certifies all students within a school as eligible to receive school meals at no cost. Schools are eligible for CEP program if at least 40% of their students are directly certified as eligible for free or reduced-priced lunch or if 40% of students in the school district are directly certified, even if an individual school does not meet this threshold. This measure is an imperfect proxy for poverty at the school level (Koedel & Parsons, 2021).

Teacher Demographics and Experience. These variables were calculated using data from the CPI Report. The **percent of Black teachers** was calculated by dividing the number of Black teachers at each school by the total number of teachers at that school. This variable was included in the study as a potential pathway through which racial representation in the teaching workforce might affect students' access to dual enrollment programs. Research shows that the presence of Black teachers contributes to a more supportive racial climate, which is associated with improved academic and social outcomes for Black students (Hart, 2020; T. P. La Salle et al., 2020). **Teaching experience,** measured as the average years of teaching in Georgia public education (Georgia Department of Education, 2020), is included as a potential indicator of systemic inequities, recognizing that schools serving predominantly Black students often have less experienced teachers due to historical patterns of resource allocation and teacher distribution (Cardichon et al., 2020).

School Location. The data for these variables come from the NCES and represent the geographic locale, or urbanicity, of schools in the sample. Four binary variables were constructed to reflect the four basic NCES locale types (city, town, suburb, and rural). As reflected in Table 2, 42% of schools in the study are located in rural areas, 28% are located in suburban areas, 16% in towns, and 14% in cities. These variables were included because of the geographic variation in access to postsecondary institutions (Gagnon et al., 2021; Spencer & Maldonado, 2021).

Operational Characteristics. These variables are based on publicly available data on schools' charter status and grade-levels within schools. **Charter school status** is a dichotomous variable to identify schools that operate as charter schools. This includes state charter schools which are authorized by the State Charter School Commission and locally approved charter schools which are authorized by local boards of education. As reflected in Table 2, 4% of schools

in the sample are charter schools. **Schools with lower-level grades** is a dichotomous variable to identify those schools that operate with primary and middle school grades. As reflected in Table 2, 11% of schools in the sample have grades below 9th grade. These variables are included in the analysis to account for variation in school operational practices, including dual enrollment policies at the school-level. For example, charter schools generally have greater flexibility in developing and implementing school programs.

School Proximity to College. This variable measures the shortest-line distance, in miles, from each high school to the nearest dual enrollment participating institution. Postsecondary institutions must sign a four-year institutional participation agreement with the Georgia Student Finance Commission (GSFC) to be considered a dual enrollment participating institution. School districts or individual high schools may partner with these institutions to offer a coordinated dual enrollment program. Alternatively, students may enroll at any participating institution, subject to meeting the institution's eligibility requirements. This metric was incorporated to control for the costs and convenience of attending courses on a college campus, recognizing that proximity may significantly influence dual enrollment programming and social goals of dual enrollment participation (Winfield, 2023).

To calculate this measure, I downloaded a list of participating colleges from the GSFC website for the 2022 fiscal year, which aligns with this phase of the study. Using the Integrated Postsecondary Education Data System (IPEDS), I retrieved the geographic coordinates (longitude and latitude) for each institution. I also obtained the geographic coordinates for high schools from the NCES EDGE file previously referenced. To estimate the nearest straight-line distance, I used the Stata *geonear (2019)* command, which calculates the shortest path between each high school and the nearest postsecondary dual enrollment partner (Picard, 2019). As

discussed in Chapter 5, a notable study limitation is the lack of data regarding specific dual enrollment arrangements at each school, including onsite or virtual course offerings. Thus, while this variable controls for the proximity to postsecondary institutions, it does not account for the availability of dual enrollment courses at the high school or through virtual offerings.

Table 2

Descriptive Statistics for Variables

Variable	Obs.	Mean	Std. Dev.	Min	Max
Continuous Variables					
School Enrollment	221	1375.48	820.11	86.00	4564.00
Percent Black Students	221	42.00	24.53	5.06	94.21
Percent Racially & Ethnically Marginalized Students	221	61.85	23.80	17.28	100.00
Percent Economically Disadv.	221	62.14	36.43	0.00	100.00
Percent Black Teachers	221	27.23	25.48	0.00	92.77
Teaching Experience (Years)	221	14.29	2.36	7.89	22.62
Dually Enrolled Students	221	114.97	119.17	15.00	972.00
Dual Enrollment Equity Index	221	0.80	0.30	0.00	1.95
Black School Climate Score	221	2.97	0.13	2.60	3.54
Miles to Nearest College	221	11.88	9.56	0.24	52.36
Binary Variables					
Locale: Rural	221	42%	49%		
Locale: Suburb	221	28%	45%		
Locale: City	221	14%	35%		
Locale: Town	221	16%	37%		
Charter Schools	221	4%	20%		
Schools with lower-level grades	221	11%	32%		

Quantitative Data Analysis

This phase of the study focused on equitable representation in dual enrollment for Black students at public high schools in Georgia. Stata was used to construct an analytical file, merging the multiple datasets as described above, and to conduct all statistical analyses. Descriptive

statistics were initially used to examine the characteristics of schools in the sample, and the dependent variables, *Black School Climate* and *Dual Enrollment Equity Index*. I then conducted multiple regression analyses to address the three research questions and examine the extent to which schools' percentage of students from racially and ethnically marginalized groups, percentage of students reported as economically disadvantaged, urbanicity/locale, charter school status, inclusion of lower and upper grades, racial composition of teaching staff, teachers' average years of experience, and school enrollment size influenced *Black School Climate* (RQ1) and the *Dual Enrollment Equity Index* (RQ2 and RQ3).

Prior to each regression analysis, all variables, including the dependent variables, were z-standardized ($M = 0$, $SD = 1$). Before standardization, certain variables were rescaled to enhance interpretability: the percent of students from racially and ethnically marginalized groups, the percent of economically disadvantaged students, and the percent of Black teachers were rescaled to a 0-10 range (where a one-unit increase corresponds to a 10-percentage-point change), and total school enrollment was rescaled to a factor of one hundred (see Table 3). Standardization allows all coefficients to be interpreted as the effect of a one standard-deviation increase in each predictor on the outcome variable.

Table 3

Rescaled Quantitative Variables

Variable	Obs.	Mean	Std. Dev.	Min	Max
School Enrollment	221	13.75	8.20	0.86	45.64
Percent Racially & Ethnically Marginalized Students	221	6.19	2.38	1.73	10.00
Percent Economically Disadv.	221	6.21	3.64	0.00	10.00
Percent Black Teachers	221	2.72	2.55	0.00	9.28

A correlational research design was the most appropriate to answer the research questions, as the goal of this study was to measure the association between two or more quantitative variables (Curtis et al., 2016; Minium et al., 1998). As a non-experimental design, correlational research can be used to examine how variations in one characteristic relate to changes in other variables (Curtis et al., 2016).

In the first research question, the regression equation employed (Equation 2) was:

$$\begin{aligned} BlackSchoolClimate_i \quad (2) \\ = \beta_0 + \beta_1 PerMarginalized_i + \beta_2 PerEconDisadv_i \\ + \beta_3 LocaleCity_i + \beta_4 LocaleSuburb_i + \beta_5 LocaleTown_i \\ + \beta_6 CharterSchool_i + \beta_7 LowerGrades_i + \beta_8 PerBlackTchrs_i \\ + \beta_9 AvgExperience_i + \beta_{10} SchoolEnrollment_i + \epsilon_i \end{aligned}$$

Here, $BlackSchoolClimate_i$ represents Black students' collective perception of school climate for each school *i,* standardized to facilitate comparability across schools. The intercept, β_0, indicates the expected value of *Black School Climate* when all predictors are zero. Each of the other variables in the equation were chosen to account for factors that may influence Black students' perceptions of school climate. Refer to Table 4 for detailed descriptions of each variable.

To address the second and third research questions, the analysis explores the influence of the same school compositional and contextual characteristics on the Dual Enrollment Equity Index ($DE\_EquityIndex_i$). This analysis was conducted in two stages, an initial partial model followed by a full model. The full model, delineated as Equation 3, extends the partial model by integrating the Black School Climate variable. The nested modeling approach allows for an examination of the incremental value added by including Black School Climate, thereby

assessing whether the inclusion of this variable significantly enhances the model's explanatory power.

$$DE\_EquityIndex_i = \beta_0 + \beta_1 BlackSchoolClimate_i + \beta_2 PerMarginalized_i + \beta_3 PerEconDisadv_i + \beta_4 LocaleCity_i + \beta_5 LocaleSuburb_i + \beta_6 LocaleTown_i + \beta_7 CharterSchool_i + \beta_8 LowerGrades_i + \beta_9 PerBlackTchrs_i + \beta_{10} AvgExperience_i + \beta_{11} SchoolEnrollment_i + \beta_{12} Distance_i + \epsilon_i \quad (3)$$

In addition to the primary analysis, several sensitivity tests were conducted to ensure the robustness and validity of the regression results. These tests included examining standardized residuals to identify potential outliers. Importantly, no changes were made to the model as a result of these tests, indicating that the findings are robust and reliable. By performing these sensitivity tests, I aimed to reinforce the reliability of the findings and ensure that the conclusions drawn from the analysis are well-supported by the data.

While I use regression analyses in this study, I acknowledge critiques such as those presented by Zuberi and Bonilla-Silva (2008) and Gillborn et al.(2018), who argue that traditional quantitative methods, rooted in historical contexts of racial hierarchy, can inadvertently perpetuate systemic racism if not critically examined and contextualized. By carefully selecting and justifying the variables used in this study, and explicitly acknowledging their limitations, this study aims to address these concerns. This approach supports a more nuanced interpretation of the results, recognizing the broader systemic factors at play in educational inequities.

Table 4

Dependent and Independent Variables

School-level Variables	Variable Description	Variable Type
Black School Climate	This score is a composite representing Black students' collective (school-level) perception of school climate.	Continuous RQ1: DV RQ2: IV RQ3: IV
Dual Enrollment Equity Index	A ratio based on the proportion of Black students in dual enrollment and the proportion of Black students enrolled at the school.	Continuous RQ2: DV RQ3: DV
Percent of students from racially/ethnically marginalized groups	The percent of students identified as Black, Hispanic, Asian, American Indian, Pacific Islander, or two or more races.	Continuous; IV
Percent economically disadvantaged	The percent of students eligible to receive free or reduced-price lunch.	Continuous; IV
Locale - City	Binary variable for schools within cities.	Binary; IV
Locale - Suburb	Binary variable for schools within suburbs.	Binary; IV
Locale - Town	Binary variable for schools within towns.	Binary; IV
Locale - Rural	Binary variable for rural schools.	Binary; IV
Charter School	Binary variable identifying charter schools.	Binary; IV
Lower-level grades	Binary variable identifying schools with grades below 9th grade.	Binary; IV
Percent Black Teachers	The percent of teachers who identified as Black.	Continuous; IV
Teaching Experience	The average number of years of experience for teachers.	Continuous; IV
School Enrollment	Total school enrollment	Continuous; IV
Distance to Nearest College	The distance in miles to the nearest dual enrollment postsecondary institution.	Continuous RQ2: IV RQ3: IV

Phase 2: Qualitative Study on Black Students' Perception of School Climate and Participation in Dual Enrollment

The purpose of this phase (QUAL) of the study was to further investigate and explore how Black students' perceptions of school climate may help us understand reasons for the underrepresentation of Black students in dual enrollment across Georgia. The central qualitative question explored was *how did Black high school students' perception of their high school's climate inform their choices on dual enrollment participation?* To address this question, I employed a phenomenological approach to gain a deeper understanding of each participant's experiences and perceptions of school climate and how their experiences and perceptions relate to the phenomenon, in this case, dual enrollment participation. Data for this study included semi-structured individual interviews with nine Black high school juniors and seniors enrolled across five public high schools in Georgia.

Phenomenology aims to delve deeply into the human experience by exploring the essence of individuals' lived experiences. This approach seeks to understand how people perceive, interpret, and find meaning in their everyday lives, focusing on the subjective aspects of these experiences. By capturing the richness and complexity of lived experiences, phenomenology aims to reveal the underlying structures of consciousness that shape how people engage with and make sense of the world around them (Hays & Singh, 2011; Henriksson & Friesen, 2012; Lopez & Willis, 2004; Starks & Trinidad, 2007). Through the use of thick descriptions and close analysis of participants' experiences and viewpoints, researchers hope to uncover the shared characteristics or essential aspects of an experience or event (Starks & Trinidad, 2007).

There are two approaches to phenomenology: hermeneutic (interpretive) phenomenology and transcendental (descriptive) phenomenology (Creswell et al., 2007; Henriksson & Friesen,

2012; Lopez & Willis, 2004; Starks & Trinidad, 2007). For this study, hermeneutic phenomenology was used. Hermeneutic phenomenology can be used to focus on "what humans experience rather than what they consciously know" (Lopez & Willis, 2004, p. 728). According to Lopez and Willis (2004), Heidegger, a key scholar of phenomenology, theorized that people, in reference to study participants, are influenced by the world they exist within and cannot separate or detach themselves from this world. In applying this approach, the implications of participants' daily experiences as it relates to the phenomenon in question is essential (Lopez & Willis, 2004), however, interpretation of these experiences, by the researcher, to construct meaning is not static or final, but instead is open to revision and reinterpretation (Henriksson & Friesen, 2012). By undertaking a hermeneutic phenomenological study, researchers both describe the phenomenon of interest, reflect on "what constitutes the nature of [the] lived experience", and also engage in an interpretive process through which the researcher "makes an interpretation of the meaning of the lived experiences" (Creswell et al., 2007, p. 253).

This phase of the study examined Black high school students' perspectives of school climate and their decision-making on dual enrollment participation, including both dually enrolled and non-dually enrolled students. I hope these stories provide valuable insights into how school climate informs decision-making, particularly as it relates to Black students. This study contributes to existing literature and our understanding of Black students' experiences in high school, their perceptions of school climate, and their decision-making regarding dual enrollment participation.

Sampling and Recruitment

Participant recruitment ran from March through May 2024. Purposeful sampling was used to identify participants for this study. Purposeful sampling is a technique to identify study

participants based on pre-determined criteria specific to the study purpose and research questions to obtain information-rich cases (Hays & Singh, 2011; Teddlie & Yu, 2007). To begin recruitment, I sent IRB-approved emails to my personal and professional contacts, asking them to share an IRB-approved flyer with students who they know may fit the study criteria and that they circulate the flyer to their networks (see Appendix B for recruitment material). The flyer directed potential participants to a questionnaire on Qualtrics, which I used to determine eligibility for the study. The questionnaire asked potential participants to provide their name and contact information, school name and district, grade, age, dual enrollment participation, and racial and ethnic identity. For racial and ethnic identity, the questionnaire allowed respondents to "select all that apply" and included Black or African American, Hispanic or Latino, White, Asian, American Indian or Alaska Native, and Other (write-in option). These categories aligned with the racial categories reported by GaDOE and were used in Phase 1 of the study. I used the following criteria to determine eligibility:

1. Individuals must be enrolled in 11th or 12th grade at a public school in Georgia that offered dual enrollment during the 2021-2022 school year.
2. Individuals must identify their race or ethnicity as Black or African American.

The first criterion was necessary to ensure that participants would have been exposed to dual enrollment programming and would have had an opportunity to enroll in a dual credit course if interested. Georgia's dual enrollment policy also restricts dual enrollment to students in 11th and 12th grade, so the grade range aligned with the state policy. The second criterion allowed for an explicit focus on Black students. Students who self-identified as Black or selected multiple categories (including Black) were eligible to participate in the study.

Once potential participants completed the questionnaire, I emailed them to confirm their

eligibility for the study and to schedule the interview. The email also included a link to an IRB-approved electronic consent form if respondents were at least 18 years old or a parental permission form and an assent form if they were under 18. Participants and their guardians, if applicable, were asked to review and sign the appropriate form before the start of the interview. The forms were hosted on Qualtrics. The email also included a link to Calendly, an online scheduling platform that facilitates an easy approach for potential participants to select a time for the interview. Through Calendly, potential participants were given the option of being interviewed virtually via Zoom or meeting in person; all participants chose to meet virtually. In all, 25 people completed the questionnaire. Sixteen students received a follow-up email with links to the consent forms and to Calendly to schedule the interview; nine of these students completed the interview. At the end of the data collection window, individuals who completed the questionnaire but did not participate in an interview received an IRB-approved email informing them that the study was full and recruitment had ended.

Interview Procedures

A semi-structured interview protocol was developed to serve as a guide for the interviews. A semi-structured interview approach allows flexibility in the questions that are asked, the sequence, and the pace (Hays & Singh, 2011). Thus, the protocol served as a guide and starting point for each interview, though based on participants' responses, the order of the questions varied, and additional questions were asked in order to fully describe participants' experiences and opinions (Hays & Singh, 2011). The interviews explored how students' perceptions of their school climate may have informed their decision on dual enrollment participation. This was accomplished by asking questions informed by the literature on dual enrollment and school climate that prompted participants to share their experiences about

relationships with adults and peers at their school, access to resources and educational experiences, and their awareness of dual enrollment. The interview protocol also solicited their observations and perceptions about their school climate in general and their thoughts on what their school can do to increase Black students' participation in dual enrollment. See Appendix C for the interview protocol.

All interviews were conducted virtually using Zoom. I conducted eight interviews in my home office and one interview in a meeting room at a public library. Though participants were invited to turn on their cameras, it was not required; three participants did so. My camera was turned on for all interviews. Prior to starting each interview, I provided a brief overview of the study, reviewed the consent or assent forms, and reminded participants of confidentiality procedures. All interviews were audio-recorded and transcribed through Zoom. The interviews ranged from 15 minutes to 30 minutes. Following each interview, I provided participants with a $30 Amazon electronic gift card.

Establishing Trustworthiness

In qualitative research, validity refers to the truthfulness of the findings and conclusions drawn from analyzing the data collected. Hays and Singh (2011) suggest that establishing validity within qualitative research includes demonstrating the strength of the research approach, specifically the study design and analytical approach, and noting study limitations. For this study, I used several strategies to demonstrate trustworthiness. First, throughout the research process, I maintained a journaling practice as a way to document my thoughts about the research process, my personal reflections on participants' experiences, and how their stories and narratives resonated with me. I also maintained notes and ideas for analytic consideration and recurring themes that were emerging and that I believed aligned with the results from the quantitative

phase of the study (Hays & Singh, 2011; Saldaña, 2013). This process was continuous, beginning at the end of each interview and throughout the analytical period.

I also relied on peer debriefing (Creswell & Miller, 2000; Saldaña, 2013) to establish trustworthiness throughout the process. Peer debriefing refers to a technique or strategy whereby the researcher and impartial peers (or research team members) have extensive discussions about the study design, analytical choices, and findings (Hays & Singh, 2011; Spall, 1998). This process supports the credibility of the data and overall trustworthiness in the findings as the peer interrogates the researcher's process and provides accountability by questioning the researcher's own bias' and pushing the researcher to recognize and account for their influence in the study (Hays & Singh, 2011). By engaging in this strategy, I invited two peers, relatively removed from the research study, to offer comments, thoughts, and suggestions on the study design, analytical steps, and research findings. First, a high school educator whom I trust and believe to be invested in providing rich academic experiences to Black students reviewed my interview protocol and offered suggestions on my interview protocol and recruitment strategies. He also invited his high school-aged son to comment on the interview protocol. It was helpful to gather this feedback from an individual intimately familiar with high school life and dual enrollment. I also engaged with a researcher colleague around my methodology, data collection and analytical steps, and the themes that were generated from my analysis of the data. Talking through my research process with a researcher who was not familiar with my study or the topic was extremely valuable as she offered suggestions on how to organize my data to support analysis and provided feedback on the study results.

Another strategy I used to demonstrate trustworthiness is by ensuring accuracy of the transcribed data, by listening to the recordings multiple times, by applying an identical analytical

approach across all data, and by triangulating or comparing the consistency of inferences across all interviews (Bolderston, 2012; Hycner, 1985). Trustworthiness will be also be demonstrated by including participants' own words in the study report, which will support the inferences made (DeCuir-Gunby & Schutz, 2017).

Qualitative Sample Description

The qualitative study included nine participants, all enrolled in public high schools across the metro Atlanta area during the data collection window. Among these participants, four were dually enrolled, while the remaining five participants had never enrolled in a dual enrollment course. Participants attended five high schools within four districts, including one charter school, Clark Atlanta High School. Eight of the nine participants were in 12th grade, with one participant in the 11th grade. Only one participant was under the age of 18. All participants self-identified as Black; one participant also identified as American Indian or Alaska Native, and another was Ghanian.

To contextualize the school environments where the participants were enrolled, data from the quantitative phase indicated that during the 2021-2022 school year, on average 65% of students in these schools were Black or African American. Additionally, four of the five schools had a dual enrollment equity index of at least 1.0. Additional context on these schools, including participant names and school and district names, is provided in Table 5. Participant names and school and district names are pseudonyms to maintain confidentiality.

Table 5

Participants and their School Characteristics

Name	Dual Enrollment Student	High School	School District	School Characteristics AY2021-2022	
				Percent of Black Students Enrolled	Dual Enrollment Equity Index
Kimberlé	No	Morehouse High School	District A	64.6	1.05
Jerlando	Yes	Clark Atlanta High School	District B	80.5	1.03
Christa	Yes	Clark Atlanta High School		80.5	
Derrick	Yes	Clark Atlanta High School		80.5	
Gloria	No	Spelman High School	District C	36.0	0.48
Nicole	Yes	Spelman High School		36.0	
Shaun	No	Morris Brown High School		53.0	1.16
Tressie	No	Howard High School	District D	92.9	1.08
William	No	Howard High School		92.9	

In terms of school tenure, six students had been attending their school for all four years of high school. One participant was new to their high school, having just enrolled at the beginning of the current academic year, and the other two had been at their respective schools for two and three years. All nine participants were active and engaged in their school communities. Five students were involved in leadership and academic-related clubs such as the National Honor Society, National Beta Club, Future Business Leaders of America, and other similar academic clubs. Several students also held roles as student government representatives or school ambassadors, often tasked with providing tours to visitors and collaborating with district and county representatives on school improvement initiatives. In terms of extracurricular activities, three students were involved in the arts, including theatre, chorus, and marching band, while four students were on sports teams – volleyball, softball, tennis, and cheerleading. Beyond their school activities, five students also maintained part-time jobs outside of school.

Qualitative Data Analysis

In this phase, I used phenomenological methods to explore participants' individual

experiences, examining their narratives through a lens informed by my personal background and theoretical grounding in CRT. Data analysis began immediately after each interview. I reviewed and corrected Zoom-generated transcripts for transcription errors, including punctuation, grammar, and spelling. Importantly, I de-identified each transcript to ensure confidentiality, removing any personal identifiers including participant names, school names, and staff names.

Subsequently, I listened to the audio recordings alongside the transcripts to ensure clarity and accuracy, allowing for a richer interpretation of participant expressions and nuances. This initial editing phase was critical as it ensured the transcripts authentically represented participants' voices and experiences. Multiple readings of the transcribed interviews allowed me to immerse myself fully in the data, preparing for in-depth analysis.

Following the initial cleaning process, the transcripts were uploaded into NVivo for first cycle coding (Saldaña, 2013). First cycle coding involved descriptive coding, where I assigned single words or short phrases to segments of text. During this phase, I identified 22 distinct codes that represented specific aspects of participants' experiences related to the study's research questions. Codes such as "clubs/extracurricular," "counselor role," "(in)eligible," "peer influence," "inclusive," and "exclusive" reflected various dimensions of participants' perspectives on school climate, dual enrollment, and access to academic opportunities.

To ensure consistency in code application and to track code definitions and examples, I developed and maintained a codebook throughout the first cycle of coding. The codebook included definitions and representative examples for each code, allowing for consistency as coding progressed across additional transcripts. CRT principles actively guided my coding choices in the first cycle. CRT's critique of meritocracy and colorblind policies shaped how I defined and applied certain codes, ensuring they reflected not only descriptive aspects but also

the nuanced racial dynamics embedded in participants' narratives. For example, “(in)eligible” was coded with an awareness of how meritocratic standards might act as structural barriers for marginalized students, influencing their access to dual enrollment. As another example, the code “looks like me” referred to instances where students described a sense of comfort or connection with peers and teachers who shared their racial background, aligning with CRT’s emphasis on the importance of racial representation.

The second cycle involved pattern coding, a method used to synthesize and aggregate these initial codes into broader categories based on shared meanings. This step was important in reducing the data’s complexity and enhancing interpretive depth. This process was iterative, requiring constant comparison of codes and categories across transcripts. For example, initial codes like “counselor role,” “program material,” and “teacher support” were grouped to reflect school engagement strategies that could either support or hinder access to dual enrollment. Similarly, codes like “peer influence,” “inclusive,” “exclusive,” and “intimidating” were grouped to reflect perceptions around accessibility and inclusivity.

To guide the formation of themes and align my analysis with CRT principles, I used a set of CRT-informed analytical questions adapted from Harris (2015). These questions provided a framework for interpreting the units of meaning and themes in ways that accounted for the centrality of racism in society and challenges to claims of meritocracy and colorblindness (Esposito & Evans-Winters, 2021). The questions included:

- How do dominant ideologies such as meritocracy appear in participants’ reflections on dual enrollment eligibility and participation?
- How have participants encountered the endemic nature of racism in school?

- How do participants speak of their relationships with teachers and other adult figures in their school?

These questions informed the development of themes by directing my attention to patterns in the data that aligned with CRT's emphasis on race-conscious analysis. This approach emphasized the centrality of race/racism in educational processes, thereby aligning the emerging themes with the broader theoretical framework of CRT. For example, the question on meritocracy helped me analyze how eligibility criteria and perceptions of "high achieving" students might act as gatekeeping mechanisms that limit access to dual enrollment for marginalized students. Similarly, the focus on racism and relationships with teachers influenced the coding and grouping of data related to school climate, fostering a deeper understanding of how racial dynamics shaped students' feelings of connection and belonging.

Through the process of refining categories and grouping codes, four overarching themes emerged. **Students feel connected to their school community**. This theme and subthemes emerged from codes such as "clubs/extracurricular," "familial relationship," "teacher support," "looks like me," and "comfortable setting". These codes highlighted how students felt embedded in their school community, and the factors that impacted their sense of connection, belonging, and safety. Using CRT as a guiding lens, I paid attention to ways in which participants' feelings of connection were influenced by racial dynamics within the school. Through this perspective, I noticed how participants linked feelings of comfort and safety with the presence of teachers and peers who shared their racial background, as well as how the racial composition of their schools influenced their sense of security and likely impacted their access to resources.

School engagement strategies are drivers of dual enrollment participation. This theme and subthemes developed from codes such as "all students," "counselor role," "program

material," "teachers push AP," and "seeking out information." These codes reflected different approaches to dual enrollment promotion, where a whole-school coordinated approach involved school-wide efforts, while the student-initiated approach placed the burden of discovering dual enrollment opportunities on individual students. CRT's critique of colorblind policies highlighted the equity implications of these strategies, showing that a lack of coordinated support could reinforce existing disparities in access.

Students' academic history and college-going plans were driving factors in dual enrollment participation. This theme was shaped by codes such as "(in)eligible," "mindset," "perception," and "academic path." CRT's critique of meritocratic standards guided the coding of eligibility as a structural barrier, leading me to analyze how criteria around academic readiness might disproportionately exclude marginalized students. Additionally, CRT informed my interpretation of mindset and perception, directing attention to how students' views on the importance of dual enrollment were shaped by their social and educational contexts.

Schools should do more to make dual enrollment accessible to Black students. Codes such as "peer influence," "incentives," "inclusive," "exclusive," "apathy," "hands-on learning," and "intimidating" informed this theme, highlighting perceived barriers and supports for Black students in accessing dual enrollment. CRT guided the analysis by emphasizing the systemic nature of these barriers, such as the perception of dual enrollment as an exclusive option for "high achievers," which could discourage students who might feel intimidated or unsupported. Participants' suggestions for peer-to-peer engagement and experiential opportunities reflected CRT's emphasis on culturally relevant and equity-centered strategies.

Data Integration

Data integration is considered the final stage of a mixed methods study. Generally speaking, data integration refers to the process of mixing or combining quantitative and qualitative data and can be accomplished in different ways depending on the design and purpose of the study (DeCuir-Gunby & Schutz, 2017; Fetters et al., 2013; Johnson & Onwuegbuzie, 2004). Data integration offers several benefits, including the use of qualitative data to assess the validity of quantitative findings and the use of quantitative data to guide sampling for qualitative analysis and to explain results from the qualitative phase (Fetters et al., 2013). Approaches to integration include triangulation (corroborating or confirming results gained from different methods, complementarity (elaboration, enhancement, clarification of results from one method using results from the other method), and merging (combining qualitative and quantitative data) (Almalki, 2016; DeCuir-Gunby & Schutz, 2017; Johnson & Onwuegbuzie, 2004). In an explanatory sequential design, data integration can occur at two points, first at the end of the quantitative phase of the study in which the quantitative data can be used to make decisions about the qualitative phase of the study (e.g., study sample, procedures etc.), and then again following the qualitative phase of the study when data from both phases are integrated for interpretation of results (Almalki, 2016; Watkins, 2022).

Integration can also occur at the interpretation and reporting level (Fetters et al., 2013). With this approach, qualitative and quantitative results are included in a single report or in a series of reports, or in this case, a single chapter (Fetters et al., 2013). This can occur through narrative, data transformation, or through joint displays (Fetters et al., 2013). For this study, results from each phase are integrated through a narrative approach. Specifically, the quantitative and qualitative results are discussed separately in what Fetters et. al. (2013) calls a contiguous

approach. Building on this, I also rely on interpretative integration, which Moran-Ellis et al. (2006) describe as the blending of results from each phase of the study into a coherent narrative through one explanatory framework. For example, I consider points in which the results from both phases are congruent or where they might diverge. I also consider how the qualitative results provide greater meaning and depth to the quantitative results.

Confidentiality and Security

Prior to initiating this study, an application was submitted to the Georgia State University Institutional Review Board (IRB) for approval to conduct the study. The quantitative phase of this study relied on publicly available secondary data, collected and managed by state or federal agencies. All datasets contained only school identifying information and did not contain any student identifying information.

The data for the qualitative phase of the study included an eligibility questionnaire, audio recordings of interviews, and interview transcripts. The eligibility questionnaire was hosted on the GSU Qualtrics secure platform. The only identifiers collected were name, email address, and phone number. Participant email addresses were used to communicate with participants, schedule the interview, and as a way to provide a gift card to those who completed the study. Qualtrics was also used to secure student consent or assent, as well as parental permission from participants. These forms included participant names and email addresses. At the end of the data collection window, the questionnaire and consent/assent forms were downloaded from the secure GSU Qualtrics platform and stored behind the GSU firewall and deleted from the Qualtrics platform. Data collected for individuals interested in the study, but who did not participate in the study were deleted.

All interviews were conducted using Zoom. Interviews were audio-recorded and

transcribed using the Zoom transcription services and initially stored on the Zoom Cloud server. Once the audio recording and transcription were complete, files were downloaded from the Zoom server directly to a password-protected folder on the GSU server for analysis. Files were then deleted from the Zoom server. During my review of the transcripts, participant names, school names, and names of staff were deleted. Audio files and cleaned transcripts were stored in separate folders, as was data from the questionnaire. Participant and school pseudonyms were assigned to protect participant identities in reporting findings.

Chapter Summary

This study follows a CRMM design with an explanatory sequential approach. The quantitative phase of the study preceded the qualitative phase. In the quantitative phase, I used QuantCrit as a framework throughout the study design to guide variable selection and analysis. As a framework, QuantCrit emphasizes the importance of centering race and recognizes the limitations of traditional quantitative approaches. Applied to this study, QuantCrit allowed for a critical examination of Black students' representation in dual enrollment programs, not simply by accounting for numerical disparities but by interrogating the structural inequities that shape these patterns.

In the qualitative phase, I further explored Black students' perceptions of school climate, examining how their lived experiences and interactions with peers, teachers, and their broader school environment shaped their decisions to participate in dual enrollment. This qualitative analysis was conducted through a CRT lens, foregrounding the endemic nature of racism and how structural inequities manifest in students' daily realities. By adopting a CRT perspective, the analysis highlighted how race and racism influence students' engagement in academic opportunities and decisions about advanced learning opportunities like dual enrollment.

4 RESULTS

The purpose of this study was to examine the relationship between school characteristics, particularly Black students' collective perception of school climate, and their equitable representation in dual enrollment within public high schools across Georgia. To achieve this, I employed an explanatory sequential (QUAN -> QUAL) Critical Race Mixed Methods design. In the first phase of the study, I conducted a QuantCrit analysis of statewide, school-level, secondary data to examine how schools' contextual and compositional factors relate to the representation of Black students in dual enrollment.

In the second phase of the study (QUAL), I explored how Black students perceive their school climate and how those perceptions influenced their decisions regarding dual enrollment participation. To gather these insights, I conducted semi-structured interviews with nine high school students across Georgia who identify as Black and were enrolled in 11th or 12th grade.

This chapter begins by presenting results from Phase 1 (QUAN), demonstrating the relationship between school characteristics and the representation of Black students in dual enrollment. It then transitions to the major themes identified in Phase 2 (QUAL), based on my analysis of the semi-structured interviews with nine Black high school students.

Phase 1: Quantitative Results

The purpose of the quantitative phase of this study was to examine the relationship between schools' contextual and compositional factors and Black students' equitable representation in dual enrollment during the 2021-22 school year across the state of Georgia. Situated within QuantCrit as a methodological framework, descriptive statistics and multiple regression analysis were used to answer the following research questions:

1. What were Black high school students' perceptions of their school climate? How does Black students' perception of school climate vary based on student-body demographics, teacher demographics, teacher experience, total enrollment, school operational characteristics, or location?
2. To what extent were Black high school students equitably represented in Georgia's dual enrollment program? How does Black students' representation in dual enrollment vary based on student-body demographics, teacher demographics, teacher experience, total enrollment, school operational characteristics, or location?
3. What is the relationship between Black students' collective perception of school climate and Black students' representation in dual enrollment in high schools across the state of Georgia, controlling for student-body demographics, teacher demographics, teacher experience, total enrollment, school operational characteristics, or location?

Research Question 1

The first research question examines *Black School Climate*, specifically how Black students' collective perceptions of school climate vary based on schools' compositional and contextual factors. Descriptive statistics for the original, unstandardized *Black School Climate* scores show a mean of 2.97 ($SD = 0.132$), with individual school scores ranging from 2.59 to 3.54. To explore the factors influencing these perceptions, a multiple regression was conducted incorporating school-level characteristics such as the percent of racially and ethnically marginalized students, the percent of economically disadvantaged students, urbanicity, charter school status, grade levels served, the percent of Black teachers, the average years of teaching experience, and total school enrollment size. For this analysis, all variables, including *Black School Climate* and the predictor variables, were standardized ($M = 0$, $SD = 1$). The standardized

Black School Climate scores ranged from -2.85 to 4.28, reflecting the variability in perceptions across different schools.

The multiple regression analysis revealed that the overall model was statistically significant, $F(10, 120) = 2.17$, $p < .05$, with an R^2 of .18, meaning that the predictors collectively explain 18% of the variance in Black School Climate. This suggests that while several factors were considered, only a few had a noteworthy association with Black students' perceptions. Among the predictors, the urbanicity of schools, specifically city locations, was a statistically significant predictor. As shown in Table 6, the standardized coefficient for city schools ($\beta = 0.16$, $p < .05$) indicates that, when compared to the reference group (rural schools), being located in a city is associated with a 0.16 standard deviation increase in Black students' collective perception of school climate, holding all other factors constant. Charter school status and teacher experience both demonstrated marginal significance, which suggests a trend in which Black students in charter schools and in schools with more experienced teachers may perceive the school climate more positively; however, these associations did not reach the conventional threshold of $p < .05$. Other predictors, such as the percentage of racially and ethnically marginalized students, the percentage of economically disadvantaged students, and the racial composition of the teaching staff, did not exhibit statistically significant relationships with the dependent variable. This indicates that these factors, while important in other contexts, did not significantly contribute to variations in Black students' perceptions of school climate within this model.

Table 6

Summary of Multiple Regression Analysis for Variables Predicting Black Students' Collective Perception of School Climate

VARIABLES	Black School Climate Score
Percent Racially & Ethnically Marginalized	-0.03
	(0.14)
Percent Economically Disadvantaged	-0.11
	(0.11)
Locale: City	0.16**
	(0.07)
Locale: Suburb	0.12
	(0.07)
Locale: Town	0.05
	(0.07)
Charter School	0.33*
	(0.20)
School with lower-level grades	-0.01
	(0.10)
Percent Black Teachers	0.01
	(0.11)
Teaching Experience	0.16*
	(0.08)
School Enrollment	-0.12
	(0.16)
Constant	-0.00
	(0.07)
Observations	221
R-squared	0.18

Note: Rural public high schools are the referenced group. Reported coefficients are standardized. Robust standard errors in parentheses.
*** $p < .01$, ** $p < .05$, * $p < .1$

Research Question 2

The second research question examines the variation in equitable representation of Black students in dual enrollment, as measured by the *Dual Enrollment Equity Index*, and how this correlates with the compositional and contextual characteristics of schools. The *Dual Enrollment*

Equity Index had an unstandardized mean of 0.80 (*SD* = 0.30) across the schools in the sample, with individual school values ranging from 0 to 1.95. Table 7 presents the distribution of schools in the sample across the equity index categories (Royal & Flammer, 2015). As shown in the table, a majority of schools in the sample have a *Dual Enrollment Equity Index* below 0.85, a threshold suggested by Sosa (2017) as indicative of approaching equitable representation. This highlights the widespread underrepresentation of Black students in dual enrollment programs across the state.

Table 7

Percentage Distribution of Dual Enrollment Equity Index

	Frequency	Percent	Cumulative Percent
Far below equity (<.70)	83	37.56	37.56
Below Equity (.70 - .84)	34	15.38	52.94
Almost at Equity (.85 - .99)	41	18.55	71.49
At or Above Equity (>=1.0)	63	28.51	100.00
Total	221	100.00	

Similar to the first research question, a multiple regression analysis was conducted to examine school-level characteristics that may influence the *Dual Enrollment Equity Index*. The results from the regression analysis revealed that the overall model was statistically significant $F(11, 120) = 14.03$, $p < .001$, $R^2 = .31$, indicating that the model explained 31% of the variance in the *Dual Enrollment Equity Index* (see Model 2 in Table 8). The standardized coefficients indicate that the percentage of racially and ethnically marginalized students ($\beta = 0.36$, $p < .01$) and the percentage of Black teachers ($\beta = 0.25$, $p < .01$) were statistically significant, with both variables showing positive associations with the equity index.

Research Question 3

Building upon the results from Research Question 2, which examined a partial model of school-level characteristics influencing the standardized *Dual Enrollment Equity Index*, Research Questions 3 incorporates *Black School Climate* as an additional predictor. This variable represents Black students' perception of school climate, operationalized as a school-level characteristic. By including this variable, I seek to better understand how school climate specifically related to Black students contributes to explaining variations in equitable representation in dual enrollment programs (see Model 3 in Table 8).

The results from Model 3 indicate a statistically significant regression equation $F(12, 120) = 13.02$, $p < .001$, $R^2 = .32$, explaining 32% of the variance in the *Dual Enrollment Equity Index*. The inclusion of *Black School Climate* in the model increased its explanatory power (from $R^2 = .31$ to $R^2 = .32$). A significant F-test $F(1, 120) = 4.52$, $p < .05$, comparing the two models confirmed that adding *Black School Climate* significantly improved the model, suggesting that school climate, as perceived by Black students, plays an important role in explaining variance in the *Dual Enrollment Equity Index*.

In Model 3, Black School Climate was statistically significant ($\beta = 0.12$, $p < .05$), indicating that, holding other factors constant, a one standard deviation increase in Black students' collective perception of climate is associated with a 0.12 standard deviation increase in the *Dual Enrollment Equity Index*. This suggests that improvements in Black students' collective perception of school climate have a small but significant positive effect on equitable dual enrollment representation.

Additionally, the percentage of racially and ethnically marginalized students ($\beta = 0.36$, $p < .01$) and the percentage of Black teachers ($\beta = 0.25$, $p < .01$) continued to show statistically

significant positive associations with the equity index. Specifically, a one standard-deviation increase in the percent of racially and ethnically marginalized students (approximately 2.38 units on the rescaled 0-10 scale or a 23.8 percentage point increase) is associated with a 0.36 standard deviation increase in the equity index. Similarly, a one standard-deviation increase in the percent of Black teachers (approximately 2.55 units on the rescaled scale or a 25.5 percentage point increase) is associated with a 0.25 standard deviation increase in the index. As in Model 2, the percentage of students from economically disadvantaged backgrounds was negatively associated with the index, suggesting a trend in which schools with higher proportions of students may be associated with lower equitable representation. This association, however, did not reach the conventional threshold of $p < .05$.

Table 8

Summary of Multiple Regression Analysis for Variables Predicting Dual Enrollment Equity Indices - Partial and Full Models

VARIABLES	Model 2	Model 3
Black School Climate Score		0.12**
		(0.06)
Percent Racially & Ethnically Marginalized	0.36***	0.36***
	(0.13)	(0.13)
Percent Economically Disadvantaged	-0.16*	-0.14*
	(0.08)	(0.08)
Locale: City	0.12	0.11
	(0.08)	(0.08)
Locale: Suburb	-0.08	-0.09
	(0.09)	(0.09)
Locale: Town	-0.06	-0.06
	(0.05)	(0.05)
Charter School	-0.03	-0.07
	(0.07)	(0.06)
School with lower-level grades	-0.03	-0.03
	(0.07)	(0.06)
Percent Black Teachers	0.25**	0.25**
	(0.11)	(0.11)
Teaching Experience	0.06	0.04
	(0.07)	(0.06)
School Enrollment	0.07	0.08
	(0.09)	(0.08)
Miles to nearest college	0.05	0.06
	(0.08)	(0.08)
Constant	-0.00	-0.00
	(0.07)	(0.07)
Observations	221	221
R-squared	0.31	0.32

Note. Rural public high schools are the referenced group. Reported coefficients are standardized. Robust standard errors are in parentheses

*** $p < .01$, ** $p < .05$, * $p < .10$

Phase 2: Qualitative Results

The quantitative phase of this study, analyzed through a QuantCrit framework, revealed the inequitable representation of Black students in dual enrollment across most high schools in Georgia. While controlling for various school compositional and contextual factors, the findings demonstrated that the socio-demographic makeup of schools, the proportion of Black teachers, and Black students' collective perception of school climate are statistically associated with the proportional and equitable representation of Black students in dual enrollment programs.

Recognizing the limitations of quantitative measures alone, the study's qualitative phase employs CRT to center Black students' voices and experiences. Through semi-structured interviews with nine Black high school students, I sought to gain a deeper understanding of how these students perceive their school climate and how these perceptions, along with their individual experiences, shaped their decision-making regarding dual enrollment participation.

In analyzing these interviews, I used CRT as a framework to guide the coding and theme development process. The analysis was informed by CRT-guided analytical questions that highlighted systemic factors, racial dynamics, and challenges to traditional meritocratic assumptions. This approach allowed me to identify and interpret patterns within the data that spoke to both the personal experiences of the students and the structural forces shaping those experiences. By iteratively coding and grouping text segments, and using analytic memos, I developed four major themes that captured the students' perceptions of school climate and their considerations regarding dual enrollment.

From the analysis of these interviews, I generated four major themes. The resulting themes, outlined in Table 9, reflect students' perceptions of their school climate and the factors that influenced their decisions about dual enrollment. This analysis reveals the interconnected

nature of school environment, racial representation, and the barriers or supports impacting students' dual enrollment decisions. Before delving into the analysis, I provide brief profiles of the nine interview participants to offer context for their school experiences and the perspectives they share.

By integrating QuantCrit in the quantitative phase and CRT in the qualitative phase, this study provides a comprehensive examination of both structural barriers and individual narratives, ultimately challenging deficit perspectives and illuminating the complex decision-making processes of Black students in navigating dual enrollment opportunities.

Table 9

Qualitative Themes and Subthemes

Theme	Subthemes
Theme 1: Students feel connected to their school community.	1. Engagement in school activities 2. Respect and support 3. Racial diversity as a protective factor 4. “My school is a little rough around the edges”
Theme 2: School engagement strategies are drivers of dual enrollment participation.	1. Whole school coordinated approach 2. Student-initiated approach
Theme 3: Students’ academic history and college going plans were driving factors in dual enrollment participation.	1. Importance of dual enrollment 2. Eligibility concerns
Theme 4: Schools should do more to make dual enrollment accessible to Black students.	1. Increase programmatic awareness 2. Provide more learning opportunities

Participant Profiles

Kimberlé is a senior at Morehouse High School, where she has been enrolled since her sophomore year. She is active in her school community, participating in chorus and serving as an ambassador for her school’s magnet program. Kimberlé takes Career, Technical, and Agricultural

Education (CTAE) courses and is currently enrolled in three AP courses, though she chose not to pursue dual enrollment. Reflecting on her decision, she explained, "*the idea of going to a college campus with a bunch of you know, freshly graduated high school students, or some almost graduating seniors who are probably being stressed about their classes and all this other stuff, it just didn't feel like a very appealing idea at the end of the day."*

Christa is a senior at Clark Atlanta High School, where she has been enrolled for six years. She is active in student government, theatre, and visual arts programming at her school. Outside of school, Christa engages in community service and works as a lifeguard. Christa is currently enrolled in one AP course and is also in dual enrollment. She chose dual enrollment because she *"knew she was going to college and wanted to have a feel of what the environment was going to be like, and to have an easy transition from high school to freshman year*". She also "*wanted to get college credits to pay for less in college and be able to save some money*". At the time of the interview, Christa had accepted admission to a private college and planned to begin her freshman year in the upcoming fall term.

Derrick is also a senior at Clark Atlanta High School. He has attended Clark for all four years. He is actively engaged in the school community, participating in the National Honor Society and the Beta Club. Derrick also plays tennis. Derrick is enrolled in one AP course and is also in dual enrollment.

Jerlando, a senior at Clark Atlanta high School, has attended his school for all four years. He is an active participant in academic programs, including the Beta Club and the Spanish Honor Society, and works part-time outside of school. Jerlando chose dual enrollment to advance his academic progress before starting college in the upcoming summer, where he already has a planned major. Reflecting on his decision, he shared that taking dual enrollment courses "…*puts*

me ahead. So, it makes the college transition easier and cheaper obviously. I also wanted to get a sense of the college atmosphere and how everything works."

Gloria is an 11th-grade student who recently transferred to Spelman High School from another state at the beginning of the school year. She is involved in athletics as a softball player and also holds a job outside of school. While she is not currently enrolled in dual enrollment or AP courses, Gloria plans to participate in dual enrollment in her senior year. She explained her motivation, stating, "*I feel like it'll make your college applications look better, considering that you have a college class already so they'd know you're capable of doing the courses."*

Nicole is a senior at Spelman High School, where she has been enrolled since her freshman year. She is active in athletics, playing volleyball and previously running track, and is a member of the Skills USA Club. Currently, Nicole is participating in dual enrollment, with most of her courses taking place online or on the college campus. She chose dual enrollment with the goal of graduating early, a decision she made with the support and guidance of her family, including her brother, who had also participated in dual enrollment and helped her consider her options.

Shaun is a senior at Morris Brown High School, where he has been enrolled for all four years. He is actively involved in his school's culinary arts program and serves as a host for the school's weekly televised program. Although familiar with the dual enrollment program, Shaun chose not to participate due to competing priorities. Instead, he is currently enrolled in AP courses.

Tressie is a senior at Howard High School, where she has been enrolled since the 10th grade. She is actively involved in school activities, participating as a cheerleader and a member of the Future Business Leaders of America (FBLA), she also has a job outside of school.

Although familiar with the dual enrollment program, Tressie chose not to enroll, citing the academic requirements and her belief that AP courses would provide a GPA boost needed for college applications. She mentioned that, given the opportunity, she would have liked to try dual enrollment.

William is also a senior at Howard High School, where he has been a student for all four years. He is actively involved in the school's music program, participating in concert and marching bands as well as the Georgia Mass Band. Additionally, he has served as an ambassador for his school. While enrolled in Advanced Placement (AP) courses, William chose not to pursue dual enrollment, citing concerns about the difficulty of college-based courses and the logistical challenges of traveling to and from the college campus.

Theme 1: Students feel connected to their school community

The first theme explores how participants perceive and interact with their school environment. For this study, I defined school climate as the overall quality and character of school life, encompassing norms, goals, values, relationships, teaching and learning practices, leadership, and organizational structures (National School Climate Center, 2007). During each interview, I introduced participants to this definition to ensure a common understanding. Guided by CRT, I focused on how racial dynamics and racial identity intersected with aspects of school climate, particularly participants' involvement in extracurricular activities and their relationships with teachers and counselors.

Engagement in school activities. All students were involved in various school-related extracurricular activities. This engagement fostered a sense of connection and belonging to their school community. When directly asked if they felt like part of their school's community, participants referenced these activities and described how involvement contributed to their sense

of belonging. For instance, Shaun spoke about his role as a "host" for his school's weekly televised program, which he says instilled pride in his community and reinforced his sense of belonging:

Shaun: Well, I feel like I'm a large part of the school community. For instance, I'm a part of my school's Friday show, which is essentially like a daily show that we air to the entire school, just consisting of small segments from our class. I feel like being an anchor on that show, being in front of the camera, speaking to my entire school every Friday has given me pride in my community, in a sense, making me feel like I'm really a [school] student, not just someone that hasn't done anything or participated in anything all four years.

Similarly, Nicole shared how her participation on her school's volleyball team and related team events strengthened her connection to the school:

Nicole: Like, volleyball did help a lot too, because, like, we worked the kids' camps…we help with the middle school team a lot; even our boys team. So that keeps me involved. We have like car washes, fundraisers, and all types of things like that. Events that are around [school mascot] days, it's like the club at the beginning of the year for upcoming freshmen that we attend to help out.

Jerlando also highlighted his role as a school ambassador, emphasizing the opportunities his school provided for leadership and engagement:

Jerlando: Well, I do feel like I'm part of the school community because, like I said, our school gives us a lot of opportunities. So, like, I'm actually a [school] ambassador. So, when we have guests come or people that want to just see the school, they'll call on me or other fellow students in order to guide those guests because they know leadership that I have or things like that.

Similarly to Jerlando, Kimberlé described the shared bond she developed with other

students through her school's arts magnet program, noting how it created a unique sense of community among magnet students.

Kimberlé: What I love about school, I guess really the magnet program. It's an arts magnet. So, I've been a magnet student for 3 years…and usually, with magnet students, we all have like this sense of community and this bond. We all like get each other.

Respect and support. Students discussed their relationships with adults at their school, emphasizing the support and respect they received from staff. Through these interactions, students felt respected, supported, and challenged by adults at their school. With this support, students were encouraged to take advanced courses like dual enrollment or Advanced Placement. For example, Christa shared how staff at her school consistently shared opportunities with her, reinforcing the school's supportive environment:

Christa: And there have been, just a lot of different interactions I've had with staff members where they've just brought up opportunities for me to grow and benefit from different situations. So I feel like [school] has a really good environment when it comes to living a positive and productive life, but it also makes sure that people are supported and they are going to spend their future doing things that they care about doing.

Similarly, Gloria reflected on how teachers at her school, directly and indirectly, support students to take challenging courses:

Gloria: They don't exactly like influence per se, but like they just be like being realistic like they know that like as a student, you know what you can do. … Um Mr.[teacher], he recommended me to take AP environmental science, but I actually already had an AP course and I was trying to take AP Statistics. So…he understands that that's gonna be a rigorous course for me, so he recommended me for honors forensics instead. So still a rigorous course, but just a little bit less

than environmental science so like it's kind of like that. That balance.

Likewise, as Shaun was preparing to graduate, he reflected on how his teachers significantly impacted his personal and academic development during his high school years:

Shaun: Throughout my high school years, I feel like I've had a pretty great relationship with all of my teachers, cause I'm someone, I'm an A and B student, so I don't give my teachers much trouble. I'm always asking questions and things of that nature. And my last semester...I feel like the teachers I had this semester are probably the most impactful of my life, especially one teacher in particular and I feel like I would not be some of the person I am today. I couldn't have accomplished that without the help of those teachers.

Racial diversity as a protective factor. Though race and racism were not explicitly addressed in the interviews, several students mentioned the racial composition of their school as a significant factor in their experience. Jerlando explicitly stated that he felt comfortable at school because the majority of staff at his school were African American or members of racially marginalized groups:

Jerlando: Yeah, the school environment is great. It's a lot of people that look similar to me. Most of our staff is actually African American or a minority. So, it gives you a comfortable setting. Those teachers are really passionate about what they teach, and the environment is definitely, I would say, a safe environment for myself; I haven't personally been in any form of threat.

William had a similar sentiment, tying his comfort level with his school's racial composition:

William: Well…I'd say that I like that our school is pretty much like dominantly people of my color. So I typically feel more comfortable for one. And two, the teachers I have are also very understanding to an extent. And yeah, that's pretty much it. You know.

When discussing whether teachers cared about students at her school, Gloria talked about the school she previously attended. She said that though most of the students were Black, they only had one or two Black teachers. She believed this racial mismatch accounted for the lack of care experienced by students:

Gloria: I feel like, because my school in Chicago was majority Black, and then it was like we…We had one maybe one or two Black teachers, but the Black people at our school were like the admin and things like that, so the people actually teaching us were like White people who didn't care for —that's just personally how I feel. But I feel like here, I feel like everybody's just I feel like everybody wants to succeed like, and everybody wants to see everybody do so as well.

"My school is a little rough around the edges." Despite their generally positive perspectives on school climate, some students acknowledged challenges related to safety and academic quality. Kimberlé noted that while she had a positive sense of community, safety issues persisted, including occasional fights:

Kimberlé: My school is a little rough around the edges. There's always something going on negative or positive, usually negative. There's usually a lot of I wouldn't say there's a lot of fights happening, but when there is a fight you hear about it, I would say. Maybe 3 times in the last 2 months I've heard about a fight.

Tressie connected safety concerns to the broader economic challenges of the surrounding community, expressing that these difficulties sometimes strengthened bonds among students:

Tressie: I'd say I love how close we are. Being in such a low-income environment, I think it's kind of brought us together, like the fact that we all had to experience the same things. Even though sometimes it negatively affected us. I think in a way, it brought us all closer I myself, I do not feel safe. I would say, there's been a lot of incidents with guns and violence, and it's very

hectic and chaotic.

William also acknowledged safety issues, linking them to the challenges teachers faced in adapting their teaching approaches:

William: I'd say education in my school is pretty decent. Do I feel safe? Not so much, since a lot of students tend to do a lot of negative things, and then it falls, there's a fall back on the teachers. But teachers have to pretty much adjust how they teach and how they approach the school based off of the students that's pretty much how I explain it.

Finally, Shaun reflected on his school's efforts to improve its reputation, which outsiders had negatively perceived:

Shaun: Our school's perception wasn't always positive from an outsider's perspective, like we were often called or thought of as a ghetto school and I feel like over the last couple of years, my junior and senior years, with the new reconstruction around the school, they're actively working to change the image about [school] growth and putting [school] in a more positive light.

Thematic Summary 1. For the students in this study, their sense of connection and belonging within their school community was important in fostering academic engagement and influencing their decision-making on course selection, specifically AP and dual enrollment courses. The racial diversity of their schools emerged as a notable factor in shaping their experiences, particularly as students felt comfortable and confident with staff who understood their backgrounds and perspectives. This racial diversity, particularly among teachers, served as a protective factor, fostering an environment where students felt seen, supported, and encouraged to pursue challenging academic opportunities.

Additionally, some students expressed concerns about limited resources and safety, which further reflect the racialized inequities they encounter within their schools. These insights

challenge dominant narratives that present schools as neutral environments. Instead, they point to the reality that for these Black students, and Black students generally, access to support, opportunities, and safety is deeply tied to the racial and structural conditions within their schools. The importance of Black teachers and racially diverse and affirming educational spaces is thus not merely symbolic, it is a necessary condition for creating environments where Black students can thrive academically and feel empowered to engaged in advanced coursework like dual enrollment.

Theme 2: School engagement strategies are drivers of dual enrollment participation.

This theme explores how schools' engagement strategies shape student participation in dual enrollment programs. Based on participant interviews, this theme reflects the impact of intentional, coordinated efforts by schools to inform students about dual enrollment. Participants indicated that schools with proactive, systematic approaches to generating programmatic awareness and regularly discussing the dual enrollment opportunities influenced students' likelihood of participating. This theme reveals how structured engagement strategies can reduce barriers to access, aligning with CRT's focus on equitable educational opportunities.

Whole school coordinated approach. Students from the charter school described learning about dual enrollment through school-wide informational efforts. In this model, the school hosts grade-level assemblies and sessions to inform students about dual enrollment and offer registration support. As Jerlando explained, during these assemblies and other sessions for 10th and 11th graders, counselors and staff discussed the application process, available courses, enrollment options at eligible colleges, and logistical considerations. This approach non only ensured that students received consistent information but also allowed them to hear from 12th grade students who were currently dually enrolled:

Jerlando: It's a grade level thing, so we'll have like a community forum towards the end of this school year and they'll start going over signing up, registering for classes, how to register for classes what classes you need to register for. They'll bring in seniors, like from this year, so we'll be the ones talking to them, about how to go about doing class, how to be successful, what not to do, what to do.

Similarly, Christa, who attended the same school as Jerlando, emphasized the value of peer-to-peer discussions and engagement from counselors:

Christa: We had a couple of sessions where they brought in previous or current seniors who were going through the process of dual enrollment. And they got to tell us a little bit about their experience and what it was going to be like and [the counselors] sent a couple of different like emails and reminders, reminding us to sign up and telling us the differences between the campuses. And then this year they um we toured our campuses at the beginning of this year.

Student-initiated approach. In contrast, students who did not attend the charter school described a more decentralized approach, where dual enrollment information was disseminated in an uncoordinated manner through flyers on electronic message boards, counselor offices, and on traditional bulletin boards. Counselors served as the primary points of contact, but there was no coordinated approach to ensuring all students understood the logistics, application process, or enrollment expectations. This decentralized model created variability in access to information, often depending on students' individual relationships with counselors and teachers. From a CRT perspective, this approach illustrates how the lack of a coordinated engagement strategy can reinforce existing inequities, as students without strong counselor or teacher connections may miss out on critical information about dual enrollment.

For example, Nicole noted that at her school, counselors were the primary source of

information on dual enrollment, while at Tressie's school, both teachers and counselors discussed the opportunity. Tressie also highlighted the importance of informational materials and one-on-one engagement with counselors, underscoring the variability in how students became aware of dual enrollment: *"In the counseling suite we have an area where they put all the papers and letters that they wanted students to be able to see. They [made] announcements and my counselor told me personally. It was a lot of things they definitely made sure it got out there."*

However, some students felt teachers were not as involved in sharing information as their counselors. Nicole, for instance, mentioned that teachers were more likely to recommend AP courses over dual enrollment:

Nicole: A lot of teachers don't really know about dual enrollment. They just, you know, suggest going into AP classes and the honors courses if you're doing well. If you have a high A in this class…they'll put you in the position to see you succeed if you were to take an AP course. But it's never really anything about dual enrollment.

Thematic Summary 2. Schools' promotion and management of dual enrollment programs are critical in shaping student participation. Schools that adopt a coordinated, whole-school approach, where teachers and counselors actively disseminate information and support dual enrollment, tend to create more equitable opportunities. These practices challenge traditional views of meritocracy by ensuring that access to dual enrollment is not limited to students who are already perceived as "meritorious" but is intentionally extended to all students. This proactive approach aligns with CRT's critique of meritocracy, which often overlooks the structural barriers that prevent marginalized students from accessing advanced educational opportunities.

In contrast, in schools without such coordinated efforts, the responsibility largely falls on

students to discover and engage with dual enrollment opportunities independently. This decentralized approach tends to benefit students who already possess social and educational capital, reinforcing existing advantages. Students without these advantages may be excluded from these opportunities, not due to lack of ability, but because of systemic barriers that prevent equitable access. Furthermore, when teachers preferentially recommend AP courses over dual enrollment, it may reflect an institutional bias that equates AP courses with higher academic prestige, a reflection of traditional meritocratic values that do not necessarily equate to fair or equal opportunities for all students. This emphasis on individual initiative over institutional support perpetuates racial and economic disparities, as access to advanced educational programs is unequally distributed along racial lines.

Theme 3: Students' academic history and college-going plans were driving factors in dual enrollment participation.

This theme highlights key considerations influencing students' decisions to participate in dual enrollment. Participants frequently referenced their academic eligibility, their readiness for college-level coursework, and their broader college-going mindset as considerations in their decision-making process.

Importance of dual enrollment: The students who were dually enrolled planned to attend college after high school, viewing dual enrollment as a means to get a head start, making college more relevant and affordable. For some students, like Derrick, dual enrollment was seen as a practical option due to their completed coursework and the limited course options available at their high school:

Derrick: So, in 12th grade…depending on how you led your school life, how you led your high school career, you might have "too many credits". So, to accommodate that you would take dual

enrollment classes. And if you didn't take dual enrollment classes, you would kind of be taking classes that are not necessarily important as other people would say, like, just filler classes. So, to avoid taking filler classes I chose dual enrollment because it'll give me a head start in college and it will not be boring, or as boring as taking filler classes.

Christa viewed dual enrollment as a way to acclimate to the college environment and save money by earning college credits while still in high school:

Christa: I think dual enrollment was really going to help me to get more acclimated to like a college environment. Since I knew I was gonna go to college, I wanted to kind of have a like a feel of what the environment was gonna be like and what it was gonna be like to like, take college classes. So [it would be] like an easy transition between senior year and freshman year of college. And I also wanted to get those college credits, so I'd have to pay for less in college and be able to save some money.

Similarly, Jerlando saw dual enrollment as a way ease the transition to college and reduce future expenses. Jerlando shared that by taking dual enrollment he would *"have my English credits. I'll have one of my 2 history/American government credits, and then also I'll have my one and only math credit. So that puts me ahead. So, it makes my college transition easier and cheaper obviously. I also wanted to get a sense of the college atmosphere and how everything works."*

Gloria, who anticipates enrolling in dual enrollment during the 2024-25 school year, believed that participating dual enrollment would enhance her college application and improve her chances of college admission:

Gloria (not yet a participant): I feel like it'll make your college applications look better, considering that you have a college class already so they'd know you're capable of doing the

courses. So that's also another reason why I applied.

Eligibility concerns: Students who chose not to participate in dual enrollment cited concerns about their academic eligibility and perceived readiness for college-level courses. For example, non-dually enrolled students like Kimberlé viewed dual enrollment as challenging and feared it might have little impact or even a negative effect on their academic success:

Kimberlé: I think, for the most part I was just scared. Cause the idea of going to a college campus with freshly graduated high school students, or some almost graduating seniors who are probably being stressed about their classes and all this other stuff, it just didn't feel like a very appealing idea at the end of the day.

Shaun expressed a similar perspective, attributing his decision to a belief that he could not successfully manage both dual enrollment and AP courses.

Shaun: I wouldn't say my environment had a large effect on me not taking dual enrollment. I would say it was more of a mindset thing personally…it was just a mindset thing of thinking that I wouldn't be able to do both or handle both at the same time.

William echoed these concerns, acknowledging the increased demands of dual enrollment and noting how messaging around both dual enrollment and AP courses affected his perception of their rigor:

William: Well, I thought dual enrollment would be much harder because…depending on what courses you take, you'd have to like do it at a college level, or however they describe… Our AP courses the way they explained it kind of seemed as if it was like normal high school courses, but just taken to another taken to like a higher level. And plus, we didn't have to do all this ripping and running back and forth from like our schools to a college. And it kind of seemed as if it was a bit much. It just looked intimidating, basically.

Thematic Summary 3. This theme underscores how students' academic histories and future college plans, which are often shaped by systemic and institutional factors, influenced their decisions to participate in dual enrollment. Students who chose dual enrollment, viewed it as a practical strategy to ease the transition to college, gain credits in advance, and reduce future educational costs. They recognized the program as an opportunity for early exposure to the college environment, which could facilitate a smoother adjustment after high school.

In contrast, students who did not participate cited concerns about academic eligibility and the perceived difficulty of dual enrollment courses as deterrents. These students expressed concerns that dual enrollment might negatively affect their grades or present challenges that exceeded their current abilities, especially compared to other options like AP courses. This divide between students who felt prepared and those who doubted their readiness highlights how perceptions of academic preparedness are not solely personal judgments but are often influenced by the level of institutional support students receive.

Using CRT as an analytical lens, this theme reveals how educational disparities that fall along racial lines influence students' perceptions of readiness and access to advanced educational opportunities. Students from historically marginalized communities may receive less encouragement and fewer resources to prepare for programs like dual enrollment. This unequal support contributes to a systemic divide where some students feel primed for college-level work, while others face self-doubt and lack of preparation.

Theme 4: Schools should do more to make dual enrollment accessible to Black students

This theme emerged from discussions about how schools could better support Black students' access to dual enrollment opportunities. At the end of each interview, I shared with students that Black students in Georgia are underrepresented in dual enrollment. I then asked

what they believed their school, or schools in general, could do to increase Black student participation. Across all interviews, students emphasized the need for increased awareness and intentional outreach to engage Black students about dual enrollment.

Increase programmatic awareness. While it may seem self-evident that staff should intentionally share information with Black students, many participants, especially those not attending the charter school, expressed that schools could do more to actively inform students about dual enrollment and share the details of what it means to be dually enrolled. Shaun, for instance, mentioned that he first heard about dual enrollment during his sophomore year, but the information was vague. It wasn't until his junior year that the details were thoroughly explained. He also shared suggestions that schools could adopt to increase awareness:

Shaun: I feel like the school…they sometimes leave flyers around the school. I guess they could do more to touch on it, more in a way that it would resonate with students, especially in a new era. The social media era through, like…short, informational videos, such as TikToks that would hit the target audience…I feel like they [students] know about it. Well, they they're aware of it, but they don't know, they don't truly know about it or aren't knowledgeable on it.

Nicole noted that dual enrollment information is often selectively shared with honors students, which creates an impression that the program is exclusive.

Nicole: I feel like they need to make it seem more inclusive…If anything, it would be mentioned in like honors classes, not necessarily like broader regular classes, because that's mainly where I see most Black people at my school. But I feel like they could make it more, make it feel more inclusive, and not that you have to be smart to do it or you need to be in a certain class to do it. Because I feel like that's where we kind of go wrong people think like, oh, you have to be a certain way. You have to have this. You have to have that. No, that's not the case. You literally

just have to…you don't even have to have like super great GPA to do it.

Similarly, Tressie argued that dual enrollment is often presented as intimidating, which may discourage other students. She suggested that schools should demystify the program by providing clear, honest explanations of how it works.

Tressie: One thing they could do is like, make it seem less intimidating, another thing is show the potential benefits of taking dual enrollment. They could have someone who has experienced dual enrollment courses explain how it works and stuff, like no sugar coating, no fabricated truth, just like full down explanation of how it works and whatnot. Cause I know one thing for sure, a lot of students don't really understand how dual enrollment works, [and if there's] no one to tell them that this is how dual enrollment works then they tend to stray away from it.

Provide more learning opportunities. Several participants suggested that schools should create peer-to-peer conversations where current or former dual enrollment students could share their experiences. Kimberlé recommended that students visit college campuses as a way to help them understand that program's benefits and be introduced to college life.

Kimberlé: You know you hear dual enrollment and going to a college to take classes, and you have to keep up your grades, and it just seems like it seems like there's only (…) you don't really see much of a positive. It would probably help to hear testimonials from people who you know ended up doing dual enrollment, and how their college life is going. Has it helped them, you know shorten the time between them entering college and graduation. Or even like letting them experience it for a day, giving them a chance to see if they would actually like it. I feel like a lot of things need that sort of experience to just do it, even if it's just for one day. Let them see if they can get acclimated to this sort of situation, because you don't want to go into environment and then be told that you're not allowed to just quit.

Christa, a student at a charter school, echoed this sentiment, emphasizing the importance of hearing from peers and vising campuses as part of the decision-making process.

Christa: We had a couple of sessions where they brought in previous or current seniors who were going through the process of dual enrollment. And they got to tell us a little bit about their experience and what it was gonna be like. And then this year, we toured our campuses at the beginning of the year.

Tressie also believed campus visits could help Black students better understand dual enrollment and decide if it is something they would be interested in.

Tressie: I feel like maybe taking them on a trip to the college that they would do dual enrollment at, or maybe any college that's in their area, and maybe putting them in that position to see what it's like, and see if it's something they would like to do instead of just telling them, oh, this is what it is, showing them first hand, what they could experience.

Thematic Summary 4. This theme calls for schools to take deliberate actions to make dual enrollment accessible and appealing to Black students. While participants not in dual enrollment were generally aware of the program, they often lacked detailed knowledge, pointing to a systemic failure in communication and outreach that disproportionately affects Black students. Participants emphasized that schools need to go beyond traditional outreach efforts and instead deliver information through modern, relatable channels like social media, which can reach students more effectively.

Students also expressed that dual enrollment should be framed as an inclusive opportunity, accessible to all students, rather than being positioned as an exclusive option for those deemed "high achieving". This perspective challenges the traditional meritocratic models, which often fail to account for the systemic barriers Black students face and do not fully

recognize diverse forms of academic potential. Through a CRT lens, the endemic nature of racism in educational systems can pressure Black students to feel they must “be a certain way” to access specific programs, like dual enrollment. This sentiment reflects the subtle racialized pressures that shape participation in advanced educational opportunities.

To counter this, students advocated for peer-to-peer learning and experiential opportunities, such as conversations with current or former dual enrollment and college campus visits. These strategies go beyond general awareness, helping Black students envision themselves in dual enrollment and addressing both perceptual and structural barriers to participation.

Chapter Summary

This mixed-methods study examined the underrepresentation of Black students in dual enrollment across public high schools in Georgia, employing QuantCrit and Critical Race Theory (CRT) frameworks. The quantitative phase, guided by QuantCrit principles, revealed through descriptive statistics that Black students are not equitably represented in dual enrollment programs across most high schools in Georgia. Multiple regression analyses explored how school compositional and contextual factors, alongside Black students' collective perceptions of school climate, influence their representation in dual enrollment. Findings indicated that urbanicity, charter status, and teacher experience are statistically associated with Black students' perceptions of school climate. Furthermore, these perceptions, along with the percentage of students from racially and ethnically marginalized groups and the percentage of Black teachers, positively correlate with more equitable representation of Black students in dual enrollment programs. Viewed through a QuantCrit lens, these results challenge the notions of neutrality in educational access, illustrating how institutional and contextual factors shape Black students' opportunities to participate in dual enrollment.

The qualitative phase, informed by CRT, centered on Black students' voices and experiences through semi-structured interviews. Four themes emerged, highlighting how systemic and institutional biases shape Black students' decision-making regarding dual enrollment. The findings revealed that school climate, particularly students' sense of belonging and connectedness, and their relationship with teachers and counselors, play a critical role in their decisions about dual enrollment. Relationships with teachers and counselors, especially when racially diverse, were pivotal in fostering a supportive environment where students felt empowered to pursue challenging academic opportunities. However, participants highlighted that a lack of detailed information and perceived access to dual enrollment programs disproportionately affected Black students, pointing to structural barriers such as limited outreach and communication. The students also stressed the importance of peer-to-peer engagement and experiential learning opportunities to help demystify dual enrollment, making it more approachable.

By integrating QuantCrit in the quantitative phase and CRT in the qualitative phase, this study offers a nuanced examination of both systemic barriers and individual narratives. The results from this study challenge deficit perspectives and illuminate the complex interplay between institutional factors and personal experiences in shaping Black students' participation in dual enrollment programs. This comprehensive analysis contributes to a deeper understanding of the multifaceted issues surrounding Black student representation in dual enrollment.

5 DISCUSSION

The primary purpose of this study was to explore inequitable participation in dual enrollment and how school factors, particularly school climate, may affect Black students' participation in dual enrollment. Using a Critical Race Mixed Methods design, the first phase of the study examined the extent to which school compositional and contextual factors were associated with Black students' proportional and equitable representation in dual enrollment. The second phase of the study explored how Black students' experiences and perceptions of their school climate informed their decisions regarding dual enrollment.

This chapter begins with a brief overview of the study, including a restatement of the research questions. I then provide a summary of the quantitative and qualitative findings, followed by a discussion where these findings are merged and interpreted. The chapter concludes with a discussion of limitations and recommendations for further research.

Brief Overview of the Problem

Nationally and across Georgia, dual enrollment is promoted as a bridge to higher education. It is seen as an opportunity for high school students to get a "head start" on college, reduce the cost of college, and become familiar with the expectations of being a college student before matriculation (Cassidy et al., 2012; Lile et al., 2018; Partridge et al., 2021). However, enrollment data indicates that Black students are underrepresented in dual enrollment and are less likely to enroll in dual enrollment when compared to their white classmates (An & Taylor, 2019; Pretlow & Wathington, 2013; Shivji & Wilson, 2019). In Georgia, though Black students account for 37% of all public school students, they comprise only 28% of dually enrolled students, indicating a dual enrollment equity index of 0.76, an indicator of inequitable representation (Bond & Chalasani, 2018). As research continues to demonstrate the positive

benefits of dual enrollment (An, 2013; Grubb et al., 2017), it is crucial to understand the factors associated with Black students' participation in dual enrollment. This understanding will enable policymakers and educators to develop and implement strategies that promote an educational environment where Black students can fully engage and thrive academically.

Purpose of Study and Research Questions

The primary purpose of this study was to examine the relationship between school contextual and compositional factors and Black students' equitable representation in dual enrollment and the extent to which Black students' perception of school climate informed their decision-making on dual enrollment participation. To do this, an explanatory sequential CRMM design was used. Using descriptive statistics and multiple regression analysis, the quantitative study addressed this central question: *to what extent does a relationship exist between schools' compositional and contextual factors and Black students' proportional representation in dual enrollment in public high schools in Georgia during the 2021-22 school year*? Statewide, school-level, secondary data allowed for a broad understanding of whether factors such as Black students' perception of school climate, student demographics, teacher demographics, school operational characteristics, or school location are associated with equitable representation in dual enrollment. The following questions guided this phase of the study:

1. What were Black high school students' perceptions of their school climate? How does Black students' perception of school climate vary based on student-body demographics, teacher demographics, teacher experience, total enrollment, school operational characteristics, and location?
2. To what extent were Black high school students equitably represented in Georgia's dual enrollment program? How does Black students' representation in dual enrollment vary

based on student-body demographics, teacher demographics, teacher experience, total enrollment, school operational characteristics, and location?

3. What is the relationship between Black students' collective perception of school climate and Black students' representation in dual enrollment in high schools across the state of Georgia, controlling for student-body demographics, teacher demographics, teacher experience, total enrollment, school operational characteristics, and location?

The qualitative study centered on Black students' experiences and perspectives of school climate; the central qualitative question explored was *how has Black high school students' perception of their high school's climate informed their choices on dual enrollment participation?* Semi-structured interviews with nine Black high school students explored their experiences in high school, their perceptions of school climate, and how they believe school climate influenced their access to dual enrollment and the decision-making process on whether to participate.

Discussion of the Results

As a mixed methods study, I used the quantitative phase to assess the extent to which Black students were equitably represented in dual enrollment, followed by a qualitative phase to explore how Black students perceive their school climate and how those perceptions and experiences influenced their decision-making related to dual enrollment. A mixed methods approach is particularly effective for exploring equity issues because it allows for a comprehensive analysis of multiple data sources (DeCuir-Gunby, 2020). By combining quantitative and qualitative approaches, the strengths of each phase complement the limitations of the other, allowing the researcher to either emphasize the broad scope of experiences

quantitatively or delve into the rich details qualitatively (DeCuir-Gunby, 2020; Hesse-Biber, 2010).

In an explanatory sequential design, data integration can occur at two points: first, at the end of the quantitative phase, where quantitative data can informs decisions about the qualitative phase (e.g., study sample, procedures etc.), and second, following the qualitative phase, where data from both phases are integrated to interpret results (Almalki, 2016; Watkins, 2022). For this study, equal emphasis was placed on both phases: the quantitative phase provided a broad understanding of the issue across the state, while the qualitative phase expanded the discourse around Black students' representation in dual enrollment, offering a deeper understanding of how students' perceptions of their school climate influenced their decisions on participating in dual enrollment (Frels & Onwuegbuzie, 2013; Leech & Onwuegbuzie, 2007).

The interpretation of the results is carried out through interpretive integration, which Moran-Ellis et al. (2006) describe as the process of generating explanation or interpretation from each phase of the study and blending these into a coherent narrative through a unified explanatory framework.

Black Students in Dual Enrollment: Access and Representation

This study found that access and participation in dual enrollment for Black students are closely intertwined. Quantitative analyses revealed that when controlling for other school factors, schools with higher percentages of students from racially and ethnically marginalized groups, Black teachers, and a positive Black school climate were significantly more likely to have equitable representation in dual enrollment programs. Specifically, holding other factors constant, a one standard deviation increase in Black students' collective perception of climate is associated with a 0.12 ($p < .05$) standard deviation increase in the *Dual Enrollment Equity Index*.

Additionally, a one standard-deviation increase in the percent of students from racially and ethnically marginalized groups (approximately 2.38 units on the rescaled 0-10 scale or a 23.8 percentage point increase) is associated with a 0.36 (p <.01) standard deviation increase in the *Dual Enrollment Equity Index*, while a one standard deviation increase in the percent of Black teachers (approximately 2.55 units on the rescaled scale or a 25.5 percentage point increase) is associated with a 0.25 (p <.01) standard deviation increase in the index.

These findings align with previous research on disparities in access to advanced coursework (Barnard-Brak et al., 2011; ExcelinEd, 2018; Hart, 2020; Pretlow & Wathington, 2013), which highlight how structural factors contribute to uneven access. For example, Pretlow and Wathington (2013) found that in Virginia, policy shifts aimed at increasing dual enrollment did not necessarily lead to equitable distribution of courses, as access was still influenced by the characteristics of the high school a student attends. Similarly, Barnard-Brak et al. (2011) found an inverse relationship between the proportion of students from racially and ethnically marginalized groups and AP course offerings, pointing to systemic inequities. This study builds on these findings by moving beyond issues of access to examine the conditions under which equitable participation occurs. By demonstrating that schools with higher percentages of students from racially and ethnically marginalized groups, Black teachers, and positive Black school climates have higher equitable representation in dual enrollment this study contributes new insights into the role of school environments in fostering equity.

The qualitative data further illuminate these disparities. Students expressed that while they were generally aware of dual enrollment, access to detailed, actionable information was limited. Nicole's critique of her school’s selective dissemination of dual enrollment information reveals how race-neutral approaches to information sharing, such as focusing outreach efforts on

high-achieving students, perpetuate inequities. Her observation that the majority of Black students were in regular classes highlights the structural barriers that prevent Black students from fully accessing dual enrollment programs. This qualitative insight underscores the need for intentional strategies that challenge meritocratic ideologies and ensure inclusivity in program access. Together, the quantitative and qualitative data reveal that simply offering dual enrollment is insufficient; schools must also take proactive, equity-centered steps to ensure Black students can fully engage with these opportunities.

Positive School Climate as a Catalyst for Black Student Participation in Dual Enrollment

Quantitative analysis revealed a positive association between Black students' perceptions of school climate and their equitable representation in dual enrollment programs. This suggests that Black students are more likely to participate in dual enrollment when they are supported and valued. Notably, the inclusion of Black School Climate in the regression model significantly increased the model's explanatory power, underscoring the importance of school climate as a critical factor in promoting more equitable participation in dual enrollment.

The qualitative findings provide context to this, as students emphasized the importance of supportive relationships with teachers and counselors in fostering a positive school climate. For example, Shaun's reflection on the transformative impact of his teachers highlights how positive interactions with supportive adults can shape Black students' academic trajectories. This aligns with the broader literature on school climate, suggesting that students' academic outcomes improve when they feel respected and supported (Graham, 2022; Pena-Shaff et al., 2018; Thapa et al., 2013; Voight et al., 2015). The qualitative data enrich the quantitative findings by showing that school climate is not just about the overall atmosphere but about meaningful, personalized

interactions that directly impact students' academic choices, including decisions about dual enrollment.

Racial Diversity as a Protective Factor

The quantitative and qualitative findings converge on the importance of racial diversity in schools as a protective factor for Black students. The quantitative analysis revealed that a higher percentage of students from racially and ethnically marginalized groups and Black teachers is associated with greater equitable representation of Black students in dual enrollment. This finding is consistent with the idea that racial diversity within a school can create conditions where Black students feel supported and are actively encouraged to pursue challenging academic opportunities, like dual enrollment.

This idea was qualitatively reinforced by students like Jerlando and William, who noted that the racial composition of their schools made them feel more comfortable and confident in their educational settings. Their experiences emphasize that racial diversity among both students and staff not only fosters a more inclusive school climate but also enhances Black students' willingness to pursue challenging academic opportunities. These insights suggest that racial diversity is not merely a demographic variable but a crucial component of an equitable school environment that actively supports Black students' academic preparation.

In sum, both phases of the study reveal that equitable representation of Black students in dual enrollment is deeply intertwined with school climate, access to resources, and racial diversity. Results from the quantitative phase highlight the structural factors, such as teacher diversity and the percentage of students from racially and ethnically marginalized groups, that predict equitable representation in dual enrollment. In contrast, results from the qualitative phase illustrated how students' perceptions of support and belonging drive their decisions to pursue

these opportunities. Together, the two phases demonstrate that creating equitable pathways for black students requires addressing both institutional structures, policies, and practices, including the ways in which race and systemic inequities shape access to dual enrollment

Limitations

While this study provides important insights into the inequities in dual enrollment participation, several limitations should be considered when interpreting the findings, particularly concerning the generalizability of the results.

Limitations of the Quantitative Phase

Conceptual Limitations with the Equity Index and QuantCrit Considerations. While the Dual Enrollment Equity Index provides valuable insights into the proportional representation of Black students in dual enrollment programs, it is still important to critically examine its construction and limitations through a QuantCrit lens. By design, the index focuses on racial representation and not on outcome equity, intersectional effects, or within-group diversity. As López et al. (2018) argue, quantitative research should strive to include the complexity of students' experiences and identities, which are not fully reflected in a single, race-based metric.

The simplicity of using a single metric while providing a clear measure might oversimplify the complex nature of enrollment equity. The index implicitly defines equity as proportional representation, assuming that equitable participation means Black students are represented in dual enrollment at the same rate as their overall enrollment. This assumption, while useful, does not capture the complexity of educational equity, particularly in light of historical and systemic injustices that might require more comprehensive measures (Gillborn et al., 2018).

This limitation highlights the necessity for a more nuanced approach in future studies. Incorporating a broader array of quantitative metrics, qualitative analyses, and mixed methods approaches could more accurately represent the complexities of dual enrollment equity. A comprehensive approach would enhance our understanding and facilitate the development of more effective interventions tailored to the diverse needs of all student groups, aligning more closely with the principles of QuantCrit and advancing the goal of substantive educational equity.

Sample Selection and Contextual Factors. Another limitation concerns sample selection and the specific context of the 2021-2022 school year. The unique circumstances of the COVID-19 pandemic during this period, including the shift to online and hybrid instruction and the socio-emotional stress on students, likely influenced students' perceptions of school climate, dual enrollment, and participation decisions. These factors suggest that the findings may not fully reflect typical dual enrollment engagement, recruitment practices, or participation under normal circumstances. Additionally, excluding certain schools due to enrollment size, racial composition, and non-submission of the GSHS introduces selection bias, potentially limiting the generalizability of the results to all schools across Georgia.

Quantitative Data Limitations. The reliance on school-level, publicly available data is another limitation, as it does not account for school-specific dual enrollment policies and practices that could significantly impact student participation. The absence of detailed data on factors such as the location of dual enrollment courses, type of course, availability of transportation, and specific enrollment restrictions limits the ability to understand the nuances of dual enrollment participation fully. This limitation underscores the importance of gathering more

granular data in future studies to better explore variation in participation and assess equitable participation.

Data Collection and Reporting Issues. Finally, using secondary administrative data introduces limitations related to reporting students' race and ethnicity. GaDOE's policy to limit reporting on race and ethnicity to a single race or ethnicity in the data may lead to under- or over-reporting of specific student groups, particularly those who identify as mixed-race or belong to multiple ethnic backgrounds (Campbell-Montalvo, 2020; Cruz et al., 2021). This limitation points to a broader issue in educational research: the need for more inclusive and nuanced categories that better reflect the diversity of student experiences. Future research should prioritize collecting data that captures within-group differences, allowing a more comprehensive understanding of how different student groups experience dual enrollment. Furthermore, the use of aggregate data masks these group variations, limiting our understanding of their unique experiences and representation in dual enrollment. These limitations exemplify how categories or groups are neither natural nor given, and when operationalized in this way, they can further obscure inequities based on race and ethnicity.

Limitations of the Qualitative Phase

One limitation of the qualitative study was the homogeneity of the sample in two distinct ways. First, only one 11th-grade student was interviewed. Although the study design sought to explore experiences for students in 11th and 12th grade, the snowball sampling method returned only one 11th-grade participant. Additionally, all participants were from schools within the metro Atlanta area. Consequently, this study may have excluded perspectives that could have provided greater variety and nuance regarding how school climate informs dual enrollment participation.

Moreover, the study may be affected by self-selection bias, as the students who chose to participate in the interviews might possess particular characteristics or attitudes that are not representative of the broader student body. This potential bias, coupled with my role as the interviewer, could have shaped the responses, potentially leading to socially desirable answers or skewed perspectives based on how the questions were framed. Additionally, as the coder and analyst for this study, my biases and assumptions about the topic inevitably influenced all components of the study.

Finally, the temporal context of the interviews presents another limitation. The perspectives gathered in this study reflect the students' thoughts and experiences at a specific point in time without considering how their views might have evolved over the course of their high school careers. The lack of a longitudinal perspective, as well as the possibility of unrepresented demographic factors, further limits the ability to generalize these findings. Future research should consider these limitations by employing larger, more diverse samples and longitudinal approaches to better understand the complexities of dual enrollment decisions across different contexts.

Future Research Directions

The findings from this study contribute to and expand the literature on inequities in dual enrollment participation based on race and ethnicity. This study also deepens our understanding of school climate by exploring the relationship between the equitable representation in dual enrollment and Black students’ collective perception of school climate. Despite the valuable insights gained, several areas require further investigation to deepen our understanding of equity in dual enrollment for Black students.

First, the study results indicate that Black students are underrepresented in dual enrollment within schools that offer dual enrollment. Specifically, the study revealed that Black students' collective perception of school climate, the percentage of students from racially and ethnically marginalized groups, the percentage of Black teachers, and the percentage of economically disadvantaged students were significant predictors of equitable participation in dual enrollment for the 2021-2022 school year. Future research could build on these findings by using the dual enrollment equity index to include additional years before and after the study period. This would provide a broader view on equity trends across the state and help assess how equitable participation has varied based on policy changes or the impact of the COVID-19 pandemic. Additionally, to better understand the components of school climate associated with equitable participation, future studies should examine the relationship between specific school climate subscales and equitable participation in dual enrollment. Focus should be given to subscales such as school connectedness, peer social support, adult social support, cultural acceptance, and school safety as these concepts emerged during interviews.

Second, future research should investigate the mechanics of dual enrollment at the school-level, specifically focusing on the policies and practices used to inform students about dual enrollment opportunities and how they support students once enrolled. This research should explore how components of school climate, particularly students' sense of connectedness and belonging, relationships with peers, and relationships with adults in their school, influence Black students' familiarity with dual enrollment and their decisions on participation, as these topics were highlighted during interviews. This inquiry could also be extended to explore teachers' knowledge of dual enrollment, their perceptions of its value, and the extent to which they engage Black students in dual enrollment participation. The findings could provide insights into the in-

school factors that influence Black students' interest in dual enrollment and help inform how schools approach dual enrollment programming.

Implications for Policy and Practice

The results of this study have implications for shaping policy goals that address educational inequities and reduce biases affecting dual enrollment participation. In alignment with the final tenet of QuantCrit, that numbers are used for social justice (Gillborn et al., 2018), the dual enrollment equity index offers a structured approach for states, districts, and schools to set measurable goals and monitor equitable representation. By using this index, policymakers and education leaders can identify gaps in participation and strategically allocate resources to ensure that Black students have equitable access to dual enrollment.

Beyond establishing measurable goals, this study calls for an exploration of school policies and practices that could further support Black students in understanding and accessing dual enrollment. Findings indicate that traditional outreach efforts may not be sufficient; Black students often receive limited information about dual enrollment, primarily through conventional channels that may not resonate with them. Schools should consider alternative approaches, such as using social media and peer-to-peer learning, to promote dual enrollment in a way that is accessible and appealing. Additionally, framing dual enrollment as an inclusive opportunity, rather than an exclusive privilege for high-achieving students, could help dismantle the barriers that often deter Black students from participating. By fostering experiential opportunities, like visits to college campuses and conversations with current dual enrollment students, schools can create a more inclusive and supportive environment where Black students feel empowered to see themselves as dual enrollment participants.

Conclusion

Nationally, and in Georgia, Black students are underrepresented in dual enrollment programs. While researchers, educators, and policymakers have examined factors influencing participation, many key elements remain underexplored. Much of the existing research attributes low participation to students' academic preparation, interest in postsecondary education, and social capital. However, this study challenges these surface-level explanations, arguing that racism—manifested through unwelcoming school environments and inadequate outreach efforts—is a critical contributor to Black students' underrepresentation in dual enrollment.

This study's integration of Critical Race Theory and QuantCrit within a Critical Race Mixed Methods framework underscores a commitment to exposing systemic inequities in education. By blending quantitative rigor with qualitative depth, the research foregrounds race and power as central analytical constructs, providing a richer understanding of the structural barriers facing Black students. Findings from this study suggest that schools with positive climates, racial diversity, and a diverse teaching workforce are more likely to achieve proportional equity in dual enrollment participation. These results offer actionable insights, emphasizing the need to intentionally encourage Black students to participate in dual enrollment, recognizing its benefits for postsecondary enrollment and completion.

Moreover, this study highlights the critical importance of addressing systemic inequities that contribute to the exclusion of Black students from these programs. Progress requires schools to create and maintain supportive, race-affirming environments, foster strong student-adult relationships, ensure safety, and provide comprehensive dual enrollment information. These efforts are essential to ensuring that Black students have meaningful opportunities to access and engage in dual enrollment programs.

REFERENCES

Adams, J., & Roach, A. (2023). School climate from the perspective of black girls with and without disabilities: Preliminary findings from an intersectional examination of the impact of relationships. *School Psychology Review*, 1–16. https://doi.org/10.1080/2372966X.2023.2240224

Allen, D. (2010). Dual enrollment: A comprehensive literature review and bibliography. *NY: CUNY Collaborative Programs, Office of Academic Affairs.*

Allen, Q. (2010). Racial microaggressions: The schooling experiences of Black middle-class males in Arizona's secondary schools. *Journal of African American Males in Education (JAAME)*, *1*(2), 125–143.

Allen, Q. (2015). "I'm trying to get my A": Black male achievers talk about race, school and achievement. *The Urban Review*, *47*(1), 209–231. https://doi.org/10.1007/s11256-014-0315-4

Allen, W. R., Suh, S. A., González, G., & Yang, J. (2008). Qui bono? Explaining–or defending–winners and losers in the competition for educational achievement. In *White logic, white methods: Racism and methodology* (pp. 217–237). Rowman and Littlefield Publishers.

Almalki, S. (2016). Integrating quantitative and qualitative data in mixed methods research—Challenges and benefits. *Journal of Education and Learning*, *5*(3), 288. https://doi.org/10.5539/jel.v5n3p288

Alsup, P., & Depenhart, J. (2023). College persistence of dual-enrolled high school students when considering modality of dual-enrollment course delivery. *Journal of College Student Retention: Research, Theory & Practice*, *25*(1), 170–186. https://doi.org/10.1177/1521025120973955

American Psychological Association (APA). (n.d.). *Inclusive Language Guidelines*. Https://Www.Apa.Org. Retrieved October 14, 2023, from https://www.apa.org/about/apa/equity-diversity-inclusion/language-guidelines

An, B. P. (2013). The impact of dual enrollment on college degree attainment: Do low-SES students benefit? *Educational Evaluation and Policy Analysis*, *35*(1), 57–75. https://doi.org/10.3102/0162373712461933

An, B. P., & Taylor, J. L. (2019). A review of empirical studies on dual enrollment: Assessing educational outcomes. *Higher Education: Handbook of Theory and Research*, *34*, 99–151. https://doi.org/10.1007/978-3-030-03457-3_3

Andrews, D. J. C. (2012). Black achievers' experiences with racial spotlighting and ignoring in a predominantly white high school. *Teachers College Record: The Voice of Scholarship in Education*, *114*(10), 1–46. https://doi.org/10.1177/016146811211401002

Annamma, S. A., Anyon, Y., Joseph, N. M., Farrar, J., Greer, E., Downing, B., & Simmons, J. (2019). Black girls and school discipline: The complexities of being overrepresented and understudied. *Urban Education*, *54*(2), 211–242. https://doi.org/10.1177/0042085916646610

Baker, B. D., Farrie, D., & Sciarra, D. G. (2016). Mind the gap: 20 years of progress and retrenchment in school funding and achievement gaps. *ETS Research Report Series*, *2016*(1), 1–37. https://doi.org/10.1002/ets2.12098

Barnard-Brak, L., McGaha-Garnett, V., & Burley, H. (2011). Advanced placement course enrollment and school-level characteristics. *NASSP Bulletin*, *95*(3), 165–174. https://doi.org/10.1177/0192636511418640

Barnett, E., & Stamm, L. (2010). *Dual enrollment: A strategy for educational advancement of all students*. https://doi.org/10.7916/D81G0KNQ

Bastian, K. C., Henry, G. T., & Thompson, C. L. (2013). Incorporating access to more effective teachers into assessments of educational resource equity. *Education Finance and Policy*, *8*(4), 560–580. https://doi.org/10.1162/EDFP_a_00113

Bell, D. A. J. (1980). Brown v. Board of Education and the interest convergence dilemma. In K. Crenshaw, N. Gotanda, G. Peller, & K. Thomas (Eds.), *Critical race theory: The key writings that formed the movement* (pp. 20–29). The New Press.

Bensimon, E. M., Hao, L., & Bustillos, L. T. (2003). *Measuring the state of equity in public higher education*. Harvard Civil Rights and UC Conference on Expanding Opportunity in Higher Education: California and the Nation, Sacramento, California.

Beratan, G. D. (2008). The song remains the same: Transposition and the disproportionate representation of minority students in special education. *Race Ethnicity and Education*, *11*(4), 337–354. https://doi.org/10.1080/13613320802478820

Berkowitz, R., Moore, H., Astor, R. A., & Benbenishty, R. (2017). A research synthesis of the associations between socioeconomic background, inequality, school climate, and academic achievement. *Review of Educational Research*, *87*(2), 425–469. https://doi.org/10.3102/0034654316669821

Berry, R., Partridge, M. A., Schaller, T. K., & Routon, P. W. (2022). Registration patterns, student characteristics and dual enrollment success in Georgia. *Journal of Applied Research in Higher Education*, *14*(4), 1260–1271. https://doi.org/10.1108/JARHE-02-2021-0063

Bolderston, A. (2012). Conducting a research interview. *Journal of Medical Imaging and Radiation Sciences*, *43*(1), 66–76. https://doi.org/10.1016/j.jmir.2011.12.002

Bond, K., & Chalasani, K. (2018). *Georgia Dual Enrollment and Postsecondary Outcomes: 2016- 2017 Analysis of Dual Enrollment Outcomes*.

Bonilla-Silva, E., & Zuberi, T. (2008). Toward a definition of white logic and white methods. In T. Zuberi & E. Bonilla-Silva (Eds.), *White logic, white methods: Racism and methodology*. Rowman & Littlefield Publishers.

Campbell-Montalvo, R. A. (2020). Being QuantCritical of U.S. K-12 demographic data: Using and reporting race/ethnicity in Florida heartland schools. *Race Ethnicity and Education*, *23*(2), 180–199. https://doi.org/10.1080/13613324.2019.1679748

Cardichon, J., Darling-Hammond, L., Yang, M., Scott, C., Shields, P. M., & Burns, D. (2020). *Inequitable opportunity to learn: Student access to certified and experienced teachers*. Learning Policy Institute. https://files.eric.ed.gov/fulltext/ED603398.pdf

Carter, D. J. (2007). Why the Black kids sit together at the stairs: The role of identity-affirming counter-spaces in a predominantly White high school. *The Journal of Negro Education*, *76*(4), 542–554.

Carter, P. L. (2003). "Black" cultural capital, status positioning, and schooling conflicts for low-income african american youth. *Social Problems*, *50*(1), 136–155. https://doi.org/10.1525/sp.2003.50.1.136

Cassidy, L., Keating, K., & Young, V. (2012). Dual enrollment: Lessons learned on school-level implementation. *SRI International*.

Castillo, W., & Babb, N. (2023). Transforming the future of quantitative educational research: A systematic review of enacting quantCrit. *Race Ethnicity and Education*, 1–21. https://doi.org/10.1080/13613324.2023.2248911

Castillo, W., & Gillborn, D. (2022). *How to "QuantCrit:" Practices and questions for education data researchers and users*. Annenberg Institute at Brown University. https://doi.org/10.26300/V5KH-DD65

Cheng, D. A. (2019). Teacher racial composition and exclusion rates among Black or African American students. *Education and Urban Society*, *51*(6), 822–847.

Clotfelter, C., Ladd, H. F., Vigdor, J., & Wheeler, J. (2007). High-poverty schools and the distribution of teachers and principals what are the mechanisms of high-poverty disadvantages. *North Carolina Law Review*, *85*(5), 1345–1380.

Collins, P. H. (1986). Learning from the outsider within: The sociological significance of Black feminist thought. *Social Problems*, *33*(6).

Common Core, Education Portal (Version 0.19.0). (2023). [Dataset]. Urban Institute. https://educationdata.urban.org/documentation/, made available under the ODC Attribution License

Crawford, C. E., Demack, S., Gillborn, D., & Warmington, P. (2018). Quants and crits: Using numbers for social justice (or, how not to be lied to with statistics). In *Understanding critical race research methods and methodologies: Lessons from the field* (pp. 125–137). Routledge. https://doi.org/10.4324/9781315100944-11

Crenshaw, K. (1988). Race, reform, and retrenchment: Transformation and legitimation in antidiscrimination law. *Harv. L. Rev.*, *101*, 1331.

Creswell, J. W., Hanson, W. E., Clark Plano, V. L., & Morales, A. (2007). Qualitative research designs: Selection and implementation. *The Counseling Psychologist*, *35*(2), 236–264. https://doi.org/10.1177/0011000006287390

Creswell, J. W., & Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory Into Practice*, *39*(3), 124–130. https://doi.org/10.1207/s15430421tip3903_2

Cruz, R. A., Kulkarni, S. S., & Firestone, A. R. (2021). A QuantCrit analysis of context, discipline, special education, and disproportionality. *AERA Open*, *7*, 23328584211041354. https://doi.org/10.1177/23328584211041354

Curtis, E. A., Comiskey, C., & Dempsey, O. (2016). Importance and use of correlational research. *Nurse Researcher*, *23*(6), 20. https://doi.org/10.7748/nr.2016.e1382

Dawadi, S., Shrestha, S., & Giri, R. A. (2021). Mixed-methods research: A discussion on its types, challenges, and criticisms. *Journal of Practical Studies in Education*, *2*(2), 25–36. https://doi.org/10.46809/jpse.v2i2.20

DeCuir-Gunby, J. T. (2020). Using critical race mixed methodology to explore the experiences of African Americans in education. *Educational Psychologist*, 1–12. https://doi.org/10.1080/00461520.2020.1793762

DeCuir-Gunby, J. T., Chapman, T. K., & Schutz, P. A. (2018). Critical race theory, racial justice, and education: Understanding critical race research methods and methodologies. In *Understanding critical race research methods and methodologies: Lessons from the field*. Routledge.

DeCuir-Gunby, J. T., McCoy, W. N., Gibson, S. M., Modaressi, S. L., & Macias, A. J. (2024). Using critical race mixed methodology to explore African American college students' experiences with racial microaggressions. *Innovative Higher Education*. https://doi.org/10.1007/s10755-024-09732-6

DeCuir-Gunby, J. T., & Schutz, P. (2017). *Developing a mixed methods proposal: A practical guide for beginning researchers* (Vol. 5). Sage Publications.

DeCuir-Gunby, J. T., & Schutz, P. A. (2014). Researching race within educational psychology contexts. *Educational Psychologist*, *49*(4), 244–260. https://doi.org/10.1080/00461520.2014.957828

DeCuir-Gunby, J. T., & Schutz, P. A. (2018). Critical race mixed methodology: Designing a research study combining critical race theory and mixed methods research. In *Understanding critical race research methods and methodologies: Lessons from the field* (pp. 166–179).

Delgado, R., & Stefancic, J. (2001). *Critical race theory: An introduction* (Vol. 20). New York University Press.

Diette, T. M. (2012). The whiter the better? Racial composition and access to school resources for Black students. *The Review of Black Political Economy*, *39*(3), 321–334. https://doi.org/10.1007/s12114-011-9101-7

Diette, T. M., Hamilton, D., Goldsmith, A. H., & Darity, W. A. (2021). Does the Negro need separate schools? A retrospective analysis of the racial composition of schools and Black adult academic and economic success. *RSF: The Russell Sage Foundation Journal of the Social Sciences*, *7*(1), 166. https://doi.org/10.7758/rsf.2021.7.1.10

Dixson, A. D., & Rousseau, C. K. (2005). And we are still not saved: Critical race theory in education ten years later. *Race Ethnicity and Education*, *8*(1), 7–27. https://doi.org/10.1080/1361332052000340971

Edwards, L., Hughes, K. L., & Weisberg, A. (2011). *Different approaches to dual enrollment: Understanding program features and their implications*. https://ccrc.tc.columbia.edu/publications/different-approaches-to-dual-enrollment.html

Esposito, J., & Evans-Winters, V. (2021). *Introduction to intersectional qualitative research*. SAGE Publications, Incorporated.

ExcelinEd. (2018). *College and career pathways: Equity and acess*. https://www.excelined.org/wp-content/uploads/2018/10/ExcelinEd.Report.CollegeCareerPathways.CRDCAnalysis.2018.pdf

Fetters, M. D., Curry, L. A., & Creswell, J. W. (2013). Achieving integration in mixed methods designs—Principles and practices. *Health Services Research*, *48*(6 PART2), 2134–2156. https://doi.org/10.1111/1475-6773.12117

Field, K. (2021). The rise of dual credit. *Education Next*, *21*(1). http://eres.regent.edu/login?url=https://www.proquest.com/scholarly-journals/rise-dual-credit/docview/2475144904/se-2?accountid=13479

Fink, J. (2024, August 26). How many students are taking dual enrollment courses in high school? New national, state, and college-level data. *The Mixed Methods Blog*. https://ccrc.tc.columbia.edu/easyblog/how-many-students-are-taking-dual-enrollment-courses-in-high-school-new-national-state-and-college-level-data.html

Fink, J., Jenkins, D., & Yanagiura, T. (2017). What happens to students who take community college “dual enrollment” courses in high school? *Community College Research Center, Teachers College, Columbia University.* https://ccrc.tc.columbia.edu/publications/what-happens-community-college-dual-enrollment-students.html

Flamini, M., & Chalasani, K. (2019). *Georgia dual enrollment and postsecondary outcomes: 2017- 2018 analysis of dual enrollment outcomes*.

Ford, D. Y. (2014). Segregation and the underrepresentation of Blacks and Hispanics in gifted education: Social inequality and deficit paradigms. *Roeper Review*, *36*(3), 143–154. https://doi.org/10.1080/02783193.2014.919563

Ford, D. Y., Harris, J. J., Tyson, C. A., & Trotman, M. F. (2001). Beyond deficit thinking: Providing access for gifted African American students. *Roeper Review*, *24*(2), 52–58. https://doi.org/10.1080/02783190209554129

Ford, D. Y., Hines, E. M., Middleton, T. J., & Moore III, J. L. (2023). Inequitable representation of Black boys in gifted and talented education, Advanced Placement, and special education. *Journal of Multicultural Counseling and Development*, *51*(4), 304–314. https://doi.org/10.1002/jmcd.12283

Francis, D. V., De Oliveira, A. C. M., & Dimmitt, C. (2019). Do school counselors exhibit bias in recommending students for advanced coursework? *B.E. Journal of Economic Analysis and Policy*. https://doi.org/10.1515/bejeap-2018-0189

Frels, R. K., & Onwuegbuzie, A. J. (2013). Administering quantitative instruments with qualitative interviews: A mixed research approach. *Journal of Counseling and Development*, *91*(2), 184–194. https://doi.org/10.1002/j.1556-6676.2013.00085.x

Gagnon, D., Liu, J., & Cherasaro, T. (2021). *Understanding access to and participation in dual enrollment by locale and income level* (REL 2021–089). U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Central.

Garces, L. M., & Gordon Da Cruz, C. (2017). A strategic racial equity framework. *Peabody Journal of Education*, *92*(3), 322–342. https://doi.org/10.1080/0161956X.2017.1325592

García, E. (2020). *Schools are still segregated, and Black children are paying a price*. Economic Policy Institute.

Garcia, N. M., López, N., & Vélez, V. N. (2018). QuantCrit: Rectifying quantitative methods through critical race theory. *Race Ethnicity and Education*, *21*(2), 149–157. https://doi.org/10.1080/13613324.2017.1377675

Garcia, N. M., & Mayorga, O. J. (2018). The threat of unexamined secondary data: A critical race transformative convergent mixed methods. *Race Ethnicity and Education*, *21*(2), 231–252. https://doi.org/10.1080/13613324.2017.1377415

Gardner-Neblett, N., Iruka, I. U., & Humphries, M. (2023). Dismantling the Black–White achievement gap paradigm: Why and how we need to focus instead on systemic change. *Journal of Education*, *203*(2), 433–441. https://doi.org/10.1177/00220574211031958

Georgia Department of Education. (n.d.-a). *Dual Enrollment Program*. Retrieved October 13, 2023, from https://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Pages/Transition-Career-Partnerships.aspx

Georgia Department of Education. (n.d.-b). *Title I, Part A - Improving the Academic Achievement of the Disadvantaged*. Retrieved October 13, 2023, from https://www.gadoe.org/School-Improvement/Federal-Programs/title-i/Pages/Disadvantaged-Children.aspx

Georgia Department of Education. (2020, June 4). *FY2021 CPI Data Element Detail.pdf*. https://georgiainsights.gadoe.org/Data-Collections/Documents/CPI%20Documentation/FY2021/FY2021%20CPI%20Data%20Element%20Detail.pdf

Georgia Department of Education. (2021). *Georgia Student Health Survey 2.0*. Georgia Department of Education. www.gadoe.org

Georgia Student Finance Commission. (n.d.). *Dual Enrollment*. Retrieved October 12, 2023, from https://www.gafutures.org/hope-state-aid-programs/scholarships-grants/dual-enrollment/

Georgia Student Finance Commission. (2020). *Annual report (2020)*. Georgia Student Finance Commission (2020).

Georgia Student Finance Commission. (2021). *Annual report (2021)*. Georgia Student Finance Commission (2021).

Gershenson, S., Hart, C. M. D., Hyman, J., Lindsay, C. A., & Papageorge, N. W. (2022). The long-run impacts of same-race teachers. *American Economic Journal: Economic Policy*, *14*(4), 300–342. https://doi.org/10.1257/pol.20190573

Gershenson, S., Holt, S. B., & Papageorge, N. W. (2016). Who believes in me? The effect of student–teacher demographic match on teacher expectations. *Economics of Education Review*, *52*, 209–224. https://doi.org/10.1016/j.econedurev.2016.03.002

Giani, M., Alexander, C., & Reyes, P. (2014). Exploring variation in the impact of dual-credit coursework on postsecondary outcomes: A quasi-experimental analysis of Texas students. *The High School Journal*, *97*(4), 200–218.

Gillborn, D., Warmington, P., & Demack, S. (2018). QuantCrit: Education, policy, 'Big Data' and principles for a critical race theory of statistics. *Race Ethnicity and Education*, *21*(2), 158–179. https://doi.org/10.1080/13613324.2017.1377417

Goar, C. (2008). Experiments in Black and White: How racial ideology affects experimental methodology. In T. Zuberi & E. Bonilla-Silva (Eds.), *White logic, white methods: Racism and methodology*. Rowman & Littlefield Publishers.

Goldhaber, D., Theobald, R., & Tien, C. (2019). Why we need a diverse teacher workforce. *Phi Delta Kappan*, *100*(5), 25–30. https://doi.org/10.1177/0031721719827540

Gottfried, M., Kirksey, J. J., & Fletcher, T. L. (2022). Do high school students with a same-race teacher attend class more often? *Educational Evaluation and Policy Analysis*, *44*(1), 149–169. https://doi.org/10.3102/01623737211032241

Governor's Office of Student Achievement. (n.d.). *The Governor's Office of Student Achievement*. Retrieved October 13, 2023, from https://gosa.georgia.gov/about-us

Graham, J. (2022). Explaining the Racial School Climate Gap: Evidence From Georgia. *AERA Open*, *8*(1), 1–19. https://doi.org/10.1177/23328584221131529

Griffin, G. S., & Mcguire, L. (2018). *Dual Enrollment* (Special Examination Report No.17-09). Georgia Department of Audits and Accounts, Performance Audit Division.

Griffin, G. S., & McGuire, L. (2020). *Follow up review: Dual enrollment program* (Follow-up Review Report No. 19-31). Georgia Department of Audits and Accounts, Performance Audit Division.

Griffin, K., & Allen, W. (2006). Mo'money, mo'problems? High-achieving Black high school students' experiences with resources, racial climate, and resilience. *Journal of Negro Education*, *75*(3), 478–494.

Grubb, J. M., Scott, P. H., & Good, D. W. (2017). The answer Is yes: Dual enrollment benefits students at the community college. *Community College Review*, *45*(2), 79–98. https://doi.org/10.1177/0091552116682590

Harnish, D., & Lynch, R. L. (2005). Secondary to Postsecondary Technical Education Transitions: An Exploratory Study of Dual Enrollment in Georgia. *Career and Technical Education Research*, *30*(3), 169–188. https://doi.org/10.5328/cter30.3.169

Harper, S. R. (2012). Race without racism: How higher education researchers minimize racist institutional norms. *Review of Higher Education*, *36*(1 SUPPL.), 9–29. https://doi.org/10.1353/rhe.2012.0047

Harper, S. R., Smith, E. J., & Davis, C. H. F. (2018). A critical race case analysis of Black undergraduate student success at an urban university. *Urban Education*, *53*(1), 3–25. https://doi.org/10.1177/0042085916668956

Harris, A., & Leonardo, Z. (2018). Intersectionality, race-gender subordination, and education. *Review of Research in Education*, *42*(1), 1–27. https://doi.org/10.3102/0091732X18759071

Harris, J. C. (2015). *"Intrinsically interesting": The racialized experiences of multiracial women students at a predominantly White institution*. Indiana University.

Hart, C. M. D. (2020). An honors teacher like me: Effects of access to same-race teachers on Black students' advanced-track enrollment and performance. *Educational Evaluation and Policy Analysis*, *42*(2), 163–187. https://doi.org/10.3102/0162373719898470

Hays, D. G., & Singh, A. A. (2011). *Qualitative inquiry in clinical and educational settings*. The Guilford Press.

Henriksson, C., & Friesen, N. (2012). Introduction. In N. Friesen, C. Henriksson, & T. Saevi (Eds.), *Hermeneutic phenomenology in education: Method and practice* (Vol. 4). Springer Science & Business Media.

Hesse-Biber, S. (2010). Qualitative approaches to mixed methods practice. *Qualitative Inquiry*, *16*(6), 455–468. https://doi.org/10.1177/1077800410364611

Hoffman, N., Vargas, J., & Santos, J. (2009). New directions for dual enrollment: Creating stronger pathways from high school through college. *New Directions for Community Colleges*, *2009*(145), 43–58. https://doi.org/10.1002/cc.354

Hooper, K. M., & Harrington, C. (2022). Equity Gaps in Dual Enrollment. *Impacting Education: Journal on Transforming Professional Practice*, *7*(3), Article 3. https://doi.org/10.5195/ie.2022.251

Horsford, S. D. (2011). *Learning in a burning house: Educational inequality, ideology, and (dis) integration*. Teachers College Press.

Houston II, S. L., Pearman II, F. A., & McGee, E. O. (2020). Risk, protection, and identity development in high-achieving Black males in high school. *Journal of Research on Adolescence*, *30*(4), 875–895. https://doi.org/10.1111/jora.12568

Hughes, K. L. (2010). Dual enrollment: Postsecondary/secondary partnerships to prepare students. *Journal of College Science Teaching*, *39*(6), 12–13.

Hycner, R. H. (1985). Some guidelines for the phenomenological analysis of interview data. *Human Studies*, *8*(3), 279–303. https://doi.org/10.1007/BF00142995

Jamieson, C., Duncombe, C., Bloomquist, L., Mann, S., & Keily, T. (2022). *50-State Comparison: Dual/Concurrent Enrollment Policies*. Education Commission of the States. https://www.ecs.org/50-state-comparison-dual-concurrent-enrollment-policies/

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, *33*(7), 14–26. https://doi.org/10.3102/0013189X033007014

Jones, T. M., & Fleming, C. (2021). A Multilevel Model of the Association Between School Climate and Racial Differences in Academic Outcomes. *Psychology in the Schools*, *58*(5), 893–912. https://doi.org/10.1002/pits.22477

Kanny, M. A. (2015). Dual enrollment participation from the student perspective. *New Directions for Community Colleges*, *169*, 59–70. https://doi.org/10.1002/cc

Karp, M. M. (2012). I don't know, I've never been to college!" Dual enrollment as a college readiness strategy. *New Directions for Higher Education*, *158*, 21–28.

Kim, J., Kirby, C., & Bragg, D. D. (2006). *Dual credit: Then and Now*. Office of Community College Research and Leadership.

Klopfenstein, K., & Lively, K. (2012). Dual enrollment in the broader context of college-level high school programs. *New Directions for Higher Education*, *158*, 59–68. https://doi.org/10.1002/he.20015

Koedel, C., & Parsons, E. (2021). The effect of the community eligibility provision on the ability of free and reduced-price meal data to identify disadvantaged students. *Educational Evaluation and Policy Analysis*, *43*(1), 3–31. https://doi.org/10.3102/0162373720968550

Konold, T., Cornell, D., Shukla, K., & Huang, F. (2017). Racial/ethnic differences in perceptions of school climate and its association with student engagement and peer aggression. *Journal of Youth and Adolescence*, *46*(6), 1289–1303. https://doi.org/10.1007/s10964-016-0576-1

La Salle, T., George, H. P., McCoach, D. B., Polk, T., & Evanovich, L. L. (2018). An examination of school climate, victimization, and mental health problems among middle school students self-identifying with emotional and behavioral disorders. *Behavioral Disorders*, *43*(3), 383–392. https://doi.org/10.1177/0198742918768045

La Salle, T. P., McCoach, D. B., & Meyers, J. (2021). Examining measurement invariance and perceptions of school climate across gender and race and ethnicity. *Journal of Psychoeducational Assessment*, *39*(7), 800–815. https://doi.org/10.1177/07342829211023717

La Salle, T. P., Wang, C., Wu, C., & Rocha Neves, J. (2020). Racial Mismatch among Minoritized Students and White Teachers: Implications and Recommendations for Moving Forward. *Journal of Educational and Psychological Consultation*, *30*(3), 314–343. https://doi.org/10.1080/10474412.2019.1673759

Ladson-Billings, G. (1998). Just what is critical race theory and what's it doing in a nice field like education? *International Journal of Qualitative Studies in Education*, *11*(1), 7–24. https://doi.org/10.1080/095183998236863

Ladson-Billings, G. (2006). From the achievement gap to the education debt: Understanding achievement in U.S. schools. *Educational Researcher*, *35*(7), 3–12. https://doi.org/10.3102/0013189x035007003

Ladson-Billings, G. (2021). Critical race theory—What it is not! In *Handbook of Critical Race Theory in Education* (2nd ed.). Routledge.

Ladson-Billings, G., & Tate, W. F. (1995). Toward a critical race theory of education. *Teachers College Record*, *97*, 47–68.

Lamb, K. N., Boedeker, P., & Kettler, T. (2019). Inequities of enrollment in gifted education: A statewide application of the 20% equity allowance formula. *Gifted Child Quarterly*, *63*(4), 205–224. https://doi.org/10.1177/0016986219830768

Lankford, H., Loeb, S., & Wyckoff, J. (2002). Teacher sorting and the plight of urban schools: A descriptive analysis. *Educational Evaluation and Policy Analysis*, *24*(1), 37–62. https://doi.org/10.3102/01623737024001037

Leath, S., Pfister, T., Ball, P., Butler-Barnes, S., & Evans, K. A. (2021). A qualitative exploration of school racial diversity, friendship choices, and Black women's identity-based experiences in high school. *Journal of School Psychology*, *89*, 34–50. https://doi.org/10.1016/j.jsp.2021.09.006

Lee, J., & Owens, S. J. (2019). *Dual enrollment requires sustainable funding to promote high school and college success*.

Leech, N. L., & Onwuegbuzie, A. J. (2007). An array of qualitative data analysis tools: A call for data analysis triangulation. *School Psychology Quarterly*, *22*(4), 557–584. https://doi.org/10.1037/1045-3830.22.4.557

Lile, J. R., Ottusch, T. M., Jones, T., & Richards, L. N. (2018). Understanding college-student roles: Perspectives of participants in a high school/community college dual-enrollment program. *Community College Journal of Research and Practice*, *42*(2), 95–111. https://doi.org/10.1080/10668926.2016.1264899

Lopez, K. A., & Willis, D. G. (2004). Descriptive versus interpretive phenomenology: Their contributions to nursing knowledge. *Qualitative Health Research*, *14*(5), 726–735. https://doi.org/10.1177/1049732304263638

López, N., Erwin, C., Binder, M., & Chavez, M. J. (2018). Making the invisible visible: Advancing quantitative methods in higher education using critical race theory and intersectionality. *Race Ethnicity and Education*, *21*(2), 180–207. https://doi.org/10.1080/13613324.2017.1375185

Malone, L., Seeberg, V., & Yu, X. (2023). “The Soft Bigotry of Low Expectations”: Perceptions of teacher expectations Among Black families in a suburban school. *Educational Studies*, *59*(3), 247–263. https://doi.org/10.1080/00131946.2023.2165924

McKinney de Royston, M., Madkins, T. C., Givens, J. R., & Nasir, N. S. (2021). “I’m a Teacher, I’m Gonna Always Protect You”: Understanding Black Educators’ Protection of Black Children. *American Educational Research Journal*, *58*(1), 68–106. https://doi.org/10.3102/0002831220921119

Milner, H. R., & Howard, T. C. (2004). Black teachers, Black students, Black communities, and Brown: Perspectives and insights from experts. *The Journal of Negro Education*, *73*(3), 285–297. https://doi.org/10.2307/4129612

Minium, E. W., Clarke, R. C., & Coladarci, T. (1998). *Elements of Statistical Reasoning* (2nd edition). Wiley.

Minnesota Psychological Association. (n.d.). *Marginalized Populations*. Retrieved October 14, 2023, from https://www.mnpsych.org/index.php?option=com_dailyplanetblog&view=entry&category=division%20news&id=71:marginalized-populations

Mokher, C. G., & McLendon, M. K. (2009). Uniting secondary and postsecondary education: An event history analysis of state adoption of dual enrollment policies. *American Journal of Education*, *115*(2), 249–277. https://doi.org/10.1086/595668

Moran-Ellis, J., Alexander, V. D., Cronin, A., Dickinson, M., Fielding, J., Sleney, J., & Thomas, H. (2006). Triangulation and integration: Processes, claims and implications. *Qualitative Research*, *6*(1), 45–59. https://doi.org/10.1177/1468794106058870

Moreno, M. (2023, April 11). Academic advising practices for dual enrollment and early college high school students [National Alliance of Concurrent Enrollment Partnerships]. *National Alliance of Concurrent Enrollment Partnerships*. https://www.nacep.org/press-room/academic-advising-practices-for-dual-enrollment-and-early-college-high-school-students/

Moreno, M., McKinney, L., Burridge, A., Snodgrass Rangel, V., & Carales, V. D. (2021). Access for whom? The impact of dual enrollment on college matriculation among underserved student populations in Texas. *Community College Journal of Research and Practice*, *45*(4), 255–272. https://doi.org/10.1080/10668926.2019.1688734

Museus, S. D., Lutovsky, B. R., & Colbeck, C. L. (2007). Access and equity in dual enrollment programs: Implications for policy formation. *Higher Education in Review*, *4*, 1–19.

National Academies of Sciences, Engineering, and Medicine. (2019). *Monitoring Educational Equity*. The National Academies Press. https://nap.nationalacademies.org/catalog/25389/monitoring-educational-equity

National Alliance of Concurrent Enrollment Partnerships. (n.d.). *What is Concurrent Enrollment*. National Alliance of Concurrent Enrollment Partnerships. Retrieved August 23, 2023, from https://www.nacep.org/about-nacep/what-is-concurrent-enrollment/

National Center for Education Statistics. (2023a). *Concentration of Public School Students Eligible for Free or Reduced-Price Lunch* [Concentration of Education]. U.S Department of Education, Institute of Education Sciences. https://nces.ed.gov/programs/coe/indicator/clb

National Center for Education Statistics. (2023b). *Racial/Ethnic Enrollment in Public Schools* [Concentration of Education]. https://nces.ed.gov/programs/coe/pdf/2023/cge_508.pdf

National School Climate Center. (2007). *The School Climate Challenge: Narrowing the gap between school climate research and school climate policy, practice guidelines and teacher education policy*. https://schoolclimate.org/wp-content/uploads/2021/05/school-climate-challenge-web.pdf

Nelson, S. L., & Waltz, S. J. (2019). Dual enrollment programs: Litigation and equity. *Educational Policy*, *33*(2), 386–417. https://doi.org/10.1177/0895904817691845

Noguera, P. A. (2016). Race, education, and the pursuit of equity in the twenty-first century. In P. Noguera, J. Pierce, & R. Ahram (Eds.), *Race, equity, and education: Sixty years from Brown* (pp. 3–23). Springer International Publishing. https://doi.org/10.1007/978-3-319-23772-5_1

Noltemeyer, A. L., Mujic, J., & McLoughlin, C. S. (2012). The history of inequality in education. In A. L. Noltemeyer & C. S. McLoughlin (Eds.), *Disproportionality in Education and Special Education* (pp. 3–22). Charles C. Thomas Publisher Ltd.

Nowicki, J. M. (2018). *Public high schools with more students in poverty and smaller schools provide fewer academic offerings to prepare for college* (GAO-19-8). US Government Accountability Office. https://www.gao.gov/assets/gao-19-8.pdf

Nowicki, J. M. (2022). *K-12 Education: Student Population Has Significantly Diversified, but Many Schools Remain Divided along Racial, Ethnic, and Economic Lines. Report to the Chairman, Committee on Education and Labor, House of Representatives. GAO-22-104737.* (GAO-22-104737). US Government Accountability Office. https://www.gao.gov/assets/gao-22-104737.pdf

Oakes, J., Cookson, Jr, P. W., Levin, S., Carver-Thomas, D., Frelow, F., & Berry, B. (2019). *Providing an Equal Opportunity for a Sound Basic Education in North Carolina's High-Poverty Schools: Assessing Needs and Opportunities*. Learning Policy Institute.

Omi, M., & Winant, H. (2014). *Racial formation in the United States* (3rd Edition). Routledge.

Orfield, G., & Lee, C. (2005). *Why segregation matters: Poverty and educational inequality*. Harvard University, The Civil Rights Project.

Parris, L., Neves, J. R., & La Salle, T. (2018). School climate perceptions of ethnically diverse students: Does school diversity matter? *School Psychology International*, *39*(6), 625–645. https://doi.org/10.1177/0143034318798419

Partridge, M. A., Schaller, T. K., Berry, R. L., & Routon, P. W. (2021). The Economic Benefit from Tuition Savings for Dual Enrollment Students in Georgia. *Journal of School Choice*, *15*(4), 655–667. https://doi.org/10.1080/15582159.2020.1865091

Pena-Shaff, J. B., Bessette-Symons, B., Tate, M., & Fingerhut, J. (2018). Racial and ethnic differences in high school students' perceptions of school climate and disciplinary practices. *Race Ethnicity and Education*, *22*(2), 269–284. https://doi.org/10.1080/13613324.2018.1468747

Pérez Huber, L., Vélez, V. N., & Solórzano, D. (2018). More than 'papelitos:' a QuantCrit counterstory to critique Latina/o degree value and occupational prestige. *Race Ethnicity and Education*, *21*(2), 208–230. https://doi.org/10.1080/13613324.2017.1377416

Perna, L. W. (2007). The sources of racial-ethnic group differences in college enrollment: A critical examination. *New Directions for Institutional Research*, *133*, 51–66.

Perna, L. W., Milem, J., Gerald, D., Baum, E., Rowan, H., & Hutchens, N. (2006). The status of equity for Black undergraduates in public higher education in the south: Still separate and

unequal*. *Research in Higher Education*, *47*(2), 197–228. https://doi.org/10.1007/s11162-005-8886-2

Picard, R. (2019). *GEONEAR: Stata module to find nearest neighbors using geodetic distances*. https://EconPapers.repec.org/RePEc:boc:bocode:s457146

Pierson, A., Hodara, M., & Luke, J. (2017). Earning college credits in high school: Options, participation, and outcomes for Oregon students. *Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Educa-tion Evaluation and Regional Assistance, Regional Educational Laboratory Northwest*, 51.

Pretlow, J., & Patteson, J. (2015). Operating dual enrollment in different policy environments: An examination of two states. *New Directions for Community Colleges*, *169*, 21–29. https://doi.org/10.1002/cc

Pretlow, J., & Wathington, H. (2013). Access to dual enrollment courses and school-level characteristics. *Community College Journal of Research and Practice*, *37*(3), 196–204. https://doi.org/10.1080/10668926.2013.739513

Pretlow, J., & Wathington, H. D. (2014). Expanding dual enrollment: Increasing postsecondary access for all? *Community College Review*, *42*(1), 41–54. https://doi.org/10.1177/0091552113509664

Priddie, C., & Renbarger, R. (2023). Connecting QuantCrit to gifted education research: An introduction. *Gifted Child Quarterly*, *67*(1), 80–89. https://doi.org/10.1177/00169862221116636

Rarig, K. W. (2019). *Equity issues in dual enrollment programs: Exploring African American community college students' perceptions of dual enrollment* [Old Dominion University]. https://doi.org/10.25777/1b25-x591

Rauschenberg, S., & Chalasani, K. (2017). *Georgia dual enrollment and postsecondary outcomes: A longitudinal analysis of dual enrollment outcomes from 2008 to 2016*. Governor's Office of Student Achievement.

Ray, R., & Gibbons, A. (2021, November). Why are states banning critical race theory? *Brookings Commentary*. https://www.brookings.edu/articles/why-are-states-banning-critical-race-theory/

Reardon, S. F. (2016). School segregation and racial academic achievement gaps. *RSF: The Russell Sage Foundation Journal of the Social Sciences*, *2*(5), 34–57. https://doi.org/10.7758/RSF.2016.2.5.03

Riley, R. W. (1998). Our teachers should be excellent, and they should look like America. *Education and Urban Society*, *31*(1), 18–29. https://doi.org/10.1177/0013124598031001002

Robinson, I. (2021). *The War on Truth: Anti-CRT mania and book bans are the latest tactics to halt racial justice*. Legal Defense Fund. https://www.naacpldf.org/critical-race-theory-banned-books/

Royal, K. D., & Flammer, K. (2015). A critique of the equity index method. *Journal of MultiDisciplinary Evaluation*, *11*(25), 89–92.

Ryabov, I. (2011). Adolescent academic outcomes in school context: Network effects Reexamined. *Journal of Adolescence*, *34*(5), 915–927. https://doi.org/10.1016/j.adolescence.2010.12.004

Sablan, J. R. (2019). Can You really measure that? Combining critical race theory and quantitative methods. *American Educational Research Journal*, *56*(1), 178–203. https://doi.org/10.3102/0002831218798325

Saldaña, J. (2013). *The coding manual for qualitative researchers*. SAGE Publications.

Sass, T. R., Hannaway, J., Xu, Z., Figlio, D. N., & Feng, L. (2012). Value added of teachers in high-poverty schools and lower poverty schools. *Journal of Urban Economics*, *72*(2), 104–122. https://doi.org/10.1016/j.jue.2012.04.004

Schaller, T. K., Routon, P. W., Partridge, M. A., & Berry, R. (2023). A systematic review and meta-analysis of dual enrollment research. *Journal of College Student Retention: Research, Theory & Practice*, 152102512311703. https://doi.org/10.1177/15210251231170331

Shivji, A., & Wilson, S. (2019). Dual Enrollment: Participation and Characteristics. *U.S. Department of Education. Institute of Education Sciences, National Center for Education Statistics.* https://nces.ed.gov/surveys/

Simon, N., & Johnson, S. M. (2015). Teacher turnover in high-poverty schools: What we know and can do. *Teachers College Record*, *117*(3), 1–36. https://doi.org/10.1177/016146811511700305

Solórzano, D. G., & Yosso, T. J. (2002). Critical race methodology: Counter-storytelling as an analytical framework for education research. *Qualitative Inquiry*, *8*(1), 23–44. https://doi.org/10.1177/107780040200800103

Sosa, G. (2017). *Using Disproportionate Impact Methods to Identify Equity Gaps*. The RP Group.

Sosina, V. E., & Weathers, E. S. (2019). Pathways to inequality: Between-district segregation and racial disparities in school district expenditures. *AERA Open*, *5*(3), 2332858419872445. https://doi.org/10.1177/2332858419872445

Spall, S. (1998). Peer debriefing in qualitative research: Emerging operational models. *Qualitative Inquiry*, *4*(2), 280–292. https://doi.org/10.1177/107780049800400208

Spencer, G., & Maldonado, M. (2021). Determinants of dual enrollment access: A national examination of institutional context and state policies. *AERA Open*, *7*(1), 1–18. https://doi.org/10.1177/23328584211041628

Speroni, C. (2011). *High school dual enrollment programs: Are we fast-tracking students too fast? An NCPR working paper*. National Center for Postsecondary Research. www.postsecondaryresearch.org.

Spiegelman, M. (2020). *Race and ethnicity of public school teachers and their students. Data Point* (NCES 2020-103). National Center for Education Statistics. https://nces.ed.gov/pubs2020/2020103/index.asp

Stage, F. K. (2007). Moving from probabilities to possibilities: Tasks for quantitative criticalists. *New Directions for Institutional Research*, *133*, 95–100. https://doi.org/10.1002/ir

Starks, H., & Trinidad, S. B. (2007). Choose your method: A comparison of phenomenology, discourse analysis, and grounded theory. *Qualitative Health Research*, *17*(10), 1372–1380. https://doi.org/10.1177/1049732307307031

State of Georgia. (n.d.). *Georgia Department of Education*. Retrieved October 13, 2023, from https://georgia.gov/organization/georgia-department-education

Strayhorn, T. L. (2008). Sentido de Pertenencia: A hierarchical analysis predicting sense of belonging among Latino college students. *Journal of Hispanic Higher Education*, *7*(4), 301–320. https://doi.org/10.1177/1538192708320474

Struhl, B., & Vargas, J. (2012). *Taking college courses in high school: A strategy for college readiness*. Jobs for the Future.

Suzuki, S., Morris, S. L., & Johnson, S. K. (2021). Using QuantCrit to advance an anti-racist developmental science: Applications to mixture modeling. *Journal of Adolescent Research*, *36*(5), 535–560. https://doi.org/10.1177/07435584211028229

Tabron, L. A. (2019). I pulled up a seat at the table: My journey engaging in critical quantitative inquiry. In *Research Methods for Social Justice and Equity in Education* (pp. 275–282). https://doi.org/10.1007/978-3-030-05900-2_23

Tabron, L. A., & Thomas, A. K. (2023). Deeper than wordplay: A systematic review of critical quantitative approaches in education research (2007–2021). *Review of Educational Research*, 003465432211300. https://doi.org/10.3102/00346543221130017

Tashakkori, A., & Creswell, J. W. (2007). Editorial: The new era of mixed methods. *Journal of Mixed Methods Research*, *1*(1), 3–7. https://doi.org/10.1177/2345678906293042

Taylor, E. (2016). The Foundations of Critical Race Theory in Education An Introduction. In D. Gillborn, E. Taylor, & G. Ladson-Billings (Eds.), *Foundations of critical race theory in education* (pp. 1–11). Routledge.

Taylor, J. L. (2015). Accelerating pathways to college: The (in)equitable effects of community college dual credit. *Community College Review*, *43*(4), 355–379. https://doi.org/10.1177/0091552115594880

Taylor, J. L., Allen, T. O., An, B. P., Denecker, C., Edmunds, J. A., Fink, J., Giani, M., Hodara, M., Hu, X., Tobolowsky, B. F., & Chen, W. (2022). *Research priorities for advancing equitable dual enrollment policy and practice*. University of Utah.

Taylor, J. L., & Lichtenberger, E. J. (2013). *Who has access to dual credit in Illinois? Examining high school characteristics and dual credit participation rates*. Illinois Education Research Council.

Teddlie, C., & Tashakkori, A. (2009). *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences*. Thousand Oaks. CA: Sage Publications.

Teddlie, C., & Yu, F. (2007). Mixed methods sampling: A typology with examples. *Journal of Mixed Methods Research*, *1*(1), 77–100. https://doi.org/10.1177/2345678906292430

Thapa, A., Cohen, J., Guffey, S., & Higgins-D'Alessandro, A. (2013). A Review of School Climate Research. *Review of Educational Research*, *83*(3), 357–385. https://doi.org/10.3102/0034654313483907

The Annie E. Casey Foundation. (2015, January 9). *Racial Equity & Inclusion Framework*. The Annie E. Casey Foundation. https://www.aecf.org/resources/race-equity-and-inclusion-action-guide

Tobolowsky, B. F., & Allen, T. O. (2016). On the Fast Track: Understanding the Opportunities and Challenges of Dual Credit. *ASHE Higher Education Report*, *42*(3). https://onlinelibrary.wiley.com/doi/10.1002/aehe.20069

Trost, J. L. (2016). *Uneven access: Dual enrollment programs and students of color in Minnesota*. University of Minnesota.

U.S. Department of Education. (n.d.). *Education Demographic and Geographic Estimates*. Education Demographic and Geographic Estimates. Retrieved September 2, 2024, from https://nces.ed.gov/programs/edge/About

U.S. Department of Education. (2022, September 1). The Power of Dual Enrollment: The Equitable Expansion of College Access and Success. *ED.Gov Blog*. https://blog.ed.gov/2022/09/the-power-of-dual-enrollment-the-equitable-expansion-of-college-access-and-success/

Voight, A., Austin, G., & Hanson, T. (2013). *A climate for academic success: How school climate distinguishes schools that are beating the achievement odds*. WestEd. https://www2.wested.org/www-static/online_pubs/hd-13-10.pdf

Voight, A., Hanson, T., O'Malley, M., & Adekanye, L. (2015). The racial school climate gap: Within-school disparities in students' experiences of safety, support, and connectedness. *American Journal of Community Psychology*, *56*(3), 252–267. https://doi.org/10.1007/s10464-015-9751-x

Watkins, D. C. (2022). *Secondary Data in Mixed Methods Research* (1st edition). SAGE Publications, Inc.

Weathers, E. S., & Sosina, V. E. (2022). Separate remains unequal: Contemporary segregation and racial disparities in school district revenue. *American Educational Research Journal*, *59*(5), 905–938. https://doi.org/10.3102/00028312221079297

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

Will, M. (2019, May 15). 65 years After "Brown v. Board," where are all the Black educators? *Education Week*. https://www.edweek.org/policy-politics/65-years-after-brown-v-board-where-are-all-the-black-educators/2019/05

Williams, A., & Perry, A. (2020). *Prioritizing equity in dual enrollment*. Education Commission of the States. https://www.ecs.org/prioritizing-equity-in-dual-enrollment/

Williams, S. A. (2011). Bias, Race. In S. Goldstein & J. A. Naglieri (Eds.), *Encyclopedia of Child Behavior and Development* (pp. 235–237). Springer US. https://doi.org/10.1007/978-0-387-79061-9_329

Winfield, J. D. (2023). *Hiding in plain sight: A QuantCrit, intersectional analysis of dual enrollment*. Temple University.

Witkowsky, P., & Clayton, G. (2020). What makes dual enrollment work? High school counselor perspectives. *Community College Journal of Research and Practice*, *44*(6), 427–444. https://doi.org/10.1080/10668926.2019.1610676

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

Zinth, J. D. (2014). Increasing student access and success in dual enrollment programs: 13 model state-level policy components. *Education Commission of the States*, 1–17.

Zinth, J. D., & Barnett, E. (2018). *Rethinking dual enrollment to reach more students*. Education Commission of the States.

Zuberi, T. (2000). Deracializing social statistics: Problems in the quantification of race. *The Annals of the American Academy of Political and Social Science*, *568*(1), 172–185. https://doi.org/10.1177/000271620056800113

Zuberi, T. (2001). *Thicker than blood: How racial statistics lie* (First edition). Univ Of Minnesota Press.

Zuberi, T., & Bonilla-Silva, E. (2008). *White logic, white methods: Racism and methodology*. Rowman & Littlefield Publishers.

APPENDICES

Appendix A. Georgia Student Health Survey – Climate Scale

Subscales	Question
School Connectedness	Most days I look forward to going to school.
	I feel like I fit in at my school.
	I feel successful at school.
	I feel connected to others at school.
Peer Social Support	I get along with other students at school.
	I know at student at my school that I can talk to if I need help (e.g. homework, class assignments, projects).
	Students in my school are welcoming to new students.
Adult Social Support	Teachers treat me with respect.
	Adults in this school treat all students with respect.
	Teachers treat all students fairly.
Cultural Acceptance	Students at my school treat each other with respect.
	Students show respect to other students regardless of their academic ability.
	Students at this school are treated fairly by other students regardless of race, ethnicity, or culture.
Social/Civic Learning	I treat other students fairly.
	I am open towards different opinions and perspectives.
	Honesty is an important trait to me.
Physical Environment	My instructional materials are up to date and in good condition.
	Teachers in my school keep their classrooms clean and organized.
	Students in my school take pride in keeping our school building (e.g. bathrooms, classrooms, lockers) in good condition.
School Safety	I have felt unsafe at school or on my way to or from school.
	I have worried about other students hurting me.
	Students at my school fight a lot.

Appendix B. Recruitment Material for Qualitative Study

Recruitment Flyer

RESEARCH PARTICIPANTS NEEDED

Black High School Students' Perceptions of School Climate and Participation in Dual Enrollment

Purpose of the Study

The purpose of this study is to explore Black high school students' perceptions of their school climate and how school climate informed their decision on dual enrollment participation.

To Participate You Must

- Self-identify as Black
- Self-identify as a 11th or 12th grade student
- Attend a public high school in Georgia

Participation Involves

- One 60-minute interview by video chat or in-person
- A $30 Amazon Gift Card

If you're interested in participating

Please complete the eligibility survey (https://tinyurl.com/4n458rt2) or use the QR Code below. You can also contact Janelle Clay at jclay14@student.gsu.edu

Confidentiality

- Participation is voluntary and confidential. Participation in the study will not affect student grades, academic standing, or status within their high school.
- Students under 18 years old must have parental consent
- This dissertation study is approved by the IRB at Georgia State University.

Georgia State University
IRB # H24346

Recruitment Email to Personal Network

Hello [Name]

I am looking for participants for a study that explores Black high school students' perceptions of school climate and its influence on dual enrollment participation. If you know of a current 11th or 12th grade student who identifies as Black and who attends [name of specific public high school], I would be grateful if you would forward this email to them and the attached flyer which provides additional information about the study, plus my contact information.

As referenced in the flyer, students may contact me at jclay14@student.gsu.edu if they are interested in learning more about the study.

Additionally, please feel free to share this recruitment notice and information with colleagues and/or peers that may be able to reach out to other Black high school students at [name of school]. I am also available to talk through the study with you and others if you have any questions.

Thanks for your time and consideration

Janelle Clay
Email: jclay14@student.gsu.edu
Georgia State University
IRB # H24346

Invitation Email to Potential Participants

Dear [Student]

Thank you for showing interest in this study which explores Black high school students' perceptions of school climate and its influence on dual enrollment participation. As a participant in this study, you will be asked to participate in one interview with me. The interview will last 60 minutes and can occur virtually using video-conference platform or in-person at a place that is convenient to you. Participants who complete the interview will receive a $30 Amazon gift card.

If you would like to participate in the interview, please complete a short questionnaire using this link (Interest Questionnaire). This will help me understand if you fit the criteria for participating in the interview. After I receive the completed questionnaire, I will email you to either schedule a time to participate in the interview, let you know you do not fit the criteria, or if the enrollment target for the study has been met. Please do not hesitate to contact me if you have any questions about the study.

Finally, please share this email and questions with your guardian. If you are under 18 years old, your guardian will have to agree to your participation in this study.

Janelle Clay
Phone:
Email: jclay14@student.gsu.edu
IRB # H24346

Student Eligibility Form

Thank you for showing interest in this study which explores Black high school students' perceptions of school climate and its influence on dual enrollment participation. As a participant in this study, you will be asked to participate in one interview with me (Janelle). The interview will last 60 minutes and can occur virtually using Zoom or in-person at a place that is convenient to you. Participants who complete the interview will receive a $30 Amazon gift card.

What is your name?

_____

What school do you attend?

_____

What district is your school in?

_____

What grade are you in?

- ○ 9th (1)
- ○ 10th (2)
- ○ 11th (3)
- ○ 12th (4)

Have you ever enrolled in a dual enrollment course?

- ○ Yes (1)
- ○ No (2)
- ○ I'm not sure (3)

How old are you? *If you are under 18 years old, your guardian will have to agree to your participation in the interview.*

_____

What is your race or ethnicity

- ☐ Black or African American (1)
- ☐ Hispanic or Latino (2)
- ☐ White (3)
- ☐ Asian (4)
- ☐ American Indian or Alaska Native (5)
- ☐ Other (6) _____

This interview will be scheduled for 1 hour. Where would you prefer to conduct the interview?

- ○ Virtual / Online (Zoom, Webex, or MS Teams) (1)
- ○ In-Person (2)

Please enter your email address. *Your email address will be used to schedule the interview and if we schedule a virtual interview.*

_____

Please enter your phone number. *Your phone number will only be used to confirm our interview.*

_____

Thank you for completing this questionnaire. I will email you to either schedule a time to participate in the interview, to let you know if you do not fit the criteria, or if the enrollment target for the study has been met. Please do not hesitate to contact me if you have further questions about the study.

If you are under 18 years old, your guardian will have to agree to your participation in this study and complete a parental permission form.

Janelle Clay
Doctoral Candidate
Georgia State University - College of Education and Human Development
jclay14@student.gsu.edu
IRB #: H24346

Appendix C. Semi-Structured Student Interview Protocol

Thank you for taking the time to speak with me today about your experiences as a student in your school. My name is Janelle and I am a doctoral student at Georgia State University. I am conducting my dissertation research on Black students' representation in dual enrollment. Specifically, I am interested in how Black students' perceptions of their school climate may inform their decision-making on whether to participate in dual enrollment. You were invited to participate in this study because you self-identified as a Black student in 11th or 12th grade. As we go through this conversation, there are no wrong answers as I'm interested in what you've experienced and how you perceive your school environment. I have a number of questions to ask you. You are welcomed to share as much or as little as you feel.

Before we start, I want to go over the consent form that you've already viewed. Everything we talk about today will remain confidential to the extent allowed by law. I will be recording this interview to ensure my notes and summary of the conversation are accurate and reflect what you've shared. The interviews will be recorded with a digital app and saved in a password protected folder. When I write, though I may use quotes or make reference to your responses, I will not include your name, school, or any information that can be used to identify you.

Before I turn on the audio recording, do you have any questions?

[Turn on audio recording]

Introduction:
Questions about student's current high school and student's participation in extracurricular activities and academic programs (i.e., dual enrollment, advanced placement)

1. How long have you attended your current high school and what grade are you in?
2. Can you tell me a little bit about yourself (extracurricular activities/clubs etc.; family; work etc.)
3. How is the school year going so far?
4. What do you like or love about your school?

Dual Enrollment:
Switching to questions about dual enrollment, I want to define dual enrollment so that we are both referring to the same program. Simply stated, dual enrollment refers to programs or policies which allow high school students to enroll in college-level courses, while still in high school, then if students pass the course, they then receive both high school and college credit.

1. *(confirmation)* Are you currently enrolled in any dual enrollment courses? How about advanced placement?
2. Can you share with me what you know about your school's dual enrollment program or opportunities?
3. Do you recall when you first learned about dual enrollment at your school?

4. Who informed you about this opportunity? Did you seek out information at your school about this program?
5. What role did your teachers, counselor, or other staff at your school in informing you about dual enrollment?
6. Students in Georgia, for the most part, can take dual enrollment for free, or at a low cost. Were you aware of this?
    a. If yes - Did this factor into your decision on whether to participate?
    b. If no – would this information have influenced your decision on whether to participate?
7. At some high schools, dual enrollment students take the course at their high school with one of their teachers or with faculty from the participating college. At other schools, students travel to the college to take the dual enrollment course. Do you know what option is available at your school?
    a. If courses at college – did this factor into your decision on whether to participate?

School Climate:
I'm going to now shift to a few questions about school climate, generally, school climate refers to the quality and character of school life. When we think of school climate, we're thinking about relationships with adults and peers, your sense of safety, the quality of teaching, books, the physical building etc., and whether you feel connected and respected or valued at your school.

8. Does this definition make sense or align with how you think of school climate?
    a. If so, why?
    b. If not, how then would you define or describe school climate?
9. Thinking about your personal definition, how would you describe your school's overall climate?
10. In what ways do you feel like you are a part of the school community? If you don't feel like you are a part of the community, what do you feel is missing?
11. Can you talk to me a bit about your relationship with teachers, counselors, or other adults at your school.
12. Are there adults at your school who have encouraged you to take challenging courses? If so, in what ways?
13. Do you believe that teachers/adults at your school care about students? Why or why not?

School climate and dual enrollment participation

14. In what ways do you believe, your school (i.e., the climate of your school, relationship with other adults, sense of safety, awareness) influenced your decision on whether to participate in dual enrollment?
15. In what ways do you believe, your peer group influenced your decision on whether to participate in dual enrollment?
    a. Probes: Any peers in dual enrollment; conversations with peers/friends about dual enrollment
16. In what ways do you believe your family members influenced your decision on whether to participate in dual enrollment?
17. Were there any personal experiences that you had at your school that influenced your decision on whether to participate in dual enrollment?

18. *(if non-DE student)* Are there other reasons why you chose not to participate in or enroll in a dual enrollment course?
19. *(If DE student)* Thinking about your decision to participate in dual enrollment, who or what was most influential in helping you make this decision?
20. Can you share your perception on what your school can do to increase the number of Black students taking dual enrollment classes?
21. Probe on school climate, students' sense of belonging/connectedness, student-adult relationships

Final question*:* Is there anything else that you would like to share or add about your experience as a Black student navigating your school's climate?