

Upward Social Mobility for Whom?

A Mixed Methods Investigation of How Technical College - Suburban High School Dual Enrollment Policy and Practice Contribute to Racial (In)Equity in Dual Enrollment Participation

By

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Abstract

Existing research has suggested numerous advantages of dual enrollment, which allows high school students to concurrently earn high school and college credit through enrollment in a single course, including an increased likelihood of high school to college transitions and stronger postsecondary outcomes such as a reduced time to degree completion. As dual enrollment offerings have grown across the nation, research has pointed to disparities in participation by race and high school geographic location. Scholars have called for equity-minded inquiry toward policy and practice supportive of dual enrollment access. Situated within a midwestern state, my mixed methods dissertation research leveraged longitudinal administrative data, participant interviews, and document analysis to formulate meta-inferences detailing racial (in)equity in two-year college dual enrollment access. My quantitative findings revealed that disparities in dual enrollment participation exist by race, geographic location within suburban communities, and their intersection. My qualitative findings further revealed that dual enrollment practitioners laud dual enrollment as a mechanism to advance upward social mobility; yet there are inconsistent dual enrollment policies and practices across the state's dual enrollment partners which might shape differences in dual enrollment access. These policies and practices include a(n) (non)existent institutional commitment to racial equity that guides dual enrollment operations, forming articulated dual enrollment pathways as a roadmap to upward social mobility, and a (non)systematic approach to building awareness of dual enrollment among underrepresented Students of Color. These interlacing findings illuminate racial (in)equity in dual enrollment access by revealing disparities in participation and casting light on the policy and practice which molds the environment students must navigate.

Chapter I: Introduction

To promote postsecondary access and student success, two-year college administrators have collaborated with public high schools to develop dual enrollment programs (Cohen et al., 2014). These programs allow high school students to concurrently earn high school and postsecondary credit through enrollment in a single college course (Cohen et al., 2014). Dual enrollment programs are increasingly prevalent, as 98 percent of two-year colleges in the United States (US) provide dual enrollment courses to area high school students (Marken et al., 2013). According to data from the National Center for Education Statistics, more than 1 million high school students were enrolled in dual enrollment programs during the 2010-11 academic year (Marken et al., 2013). More recent analysis by the Community College Research Center, using data from the Integrated Postsecondary Education Data System, estimates the majority of dual enrollment growth has occurred in the public two-year college sector (Fink et al., 2017). More specifically, public four-year college dual enrollment grew from 72,000 to 220,000 participating high school students, while public two-year college dual enrollment grew from 163,000 to 745,000 participating high school students between 1995 and 2015 (Fink et al., 2017). The striking growth in dual enrollment participation across the nation suggests that high school students are increasingly interested in completing college-level courses while in high school. Further, the growth in two-year college dual enrollment suggests that high school students may be increasingly interested in engaging in two-year college courses and career pathway degrees (e.g., two-year college associate degrees, technical diplomas, and industry certifications) rather than four-year college opportunities.

Compared with the empirical evidence on dual enrollment programs in four-year institutions (e.g., Allen & Dadgar, 2012; An, 2013a, 2013b; Puyear et al., 2001), a smaller body

of research is devoted to studying the educational benefits (e.g., higher college GPA, increased college persistence, and increased likelihood of college graduation) of two-year college dual enrollment participation. Though smaller in quantity, the two-year college research consistently suggests the positive educational effects of dual enrollment participation, such as a higher likelihood of college entry without delay after high school graduation (Wang et al., 2015), and stronger postsecondary outcomes including college GPA, college persistence, credit accumulation, and degree completion (e.g., D'Amico et al., 2013; Karp et al., 2008; Kim & Bragg, 2008; Wang et al., 2015). Based on this line of dual enrollment inquiry, it is plausible that students acquire capital through participation in dual enrollment that is valuable to navigating educational and career pathways within the two-year college context.

A limited body of research focuses on issues of equity by examining the educational benefits of dual enrollment participation across student populations including race, economically disadvantaged students, first-generation students, and students with a disability (e.g., An, 2013a; An, 2013b; Karp et al., 2008; Plasman & Gottfried, 2018; Speroni, 2011; Taylor, 2015). This equity-focused research extends the understanding of the positive relationship between dual enrollment participation and student outcomes by accounting for the interaction of dual enrollment with student characteristics in predicting student outcomes and positions dual enrollment as a lever for advancing student success across student populations.

While much of the existing two-year college dual enrollment literature promisingly explores the associations between dual enrollment participation and postsecondary outcomes, empirical evidence addressing racial disproportionality in dual enrollment participation is limited. This body of literature aims to examine whether participation in dual enrollment is “equitable” across student populations. That is, if students are equitably represented within dual

enrollment, it would be expected that the proportion of dual enrollment participants for a specific subgroup is consistent across all subgroups e.g., related to student race¹, the percent of Black or African American high school students participating in dual enrollment is similar to the percent of White high school students participating in dual enrollment.

The body of research exploring dual enrollment participation generally suggests disparities in participation by student race. A series of state and national studies have found that Hispanic/Latinx and Black or African American high school students are significantly less likely to participate in high school dual enrollment compared to their peers (e.g., Miller et al., 2017; Henneberger et al., 2015; National Center of Education Statistics, 2019a; Pierson et al., 2017; Pretlow & Wathington, 2013; Pretlow & Wathington, 2014). Identifying these inequities in participation and why they exist is important given the suggested academic benefits of participating in dual enrollment and the historical racial disparities in college graduation rates within the United States (National Center of Education Statistics, 2018).

Research exploring participation in dual enrollment by high school location has suggested substantial differences between suburban and urban regions. Specifically, students enrolled in suburban high schools are less likely to participate in high school dual enrollment compared to students enrolled in urban high schools (e.g., National Center of Education Statistics, 2019a; Pierson et al., 2017). This is relevant to racial (in)equity in dual enrollment participation due to the striking growth in racial diversity occurring within the nation's suburban

¹ In this document, I adopt a classification system of race that aligns with my values of intersectionality and honors how authors have referenced race within their respective research. Due to inconsistencies in the classification of race and ethnicity, I choose to identify Hispanic, Latino, or Latina as Hispanic/Latinx when speaking generally. When referencing existing research or national datasets I choose to represent the classification of race and ethnicity as identified by the author.

regions (Frankenberg et al., 2016). Drawing on US Census data, Frey (2011) suggests the proportion of People of Color living within the suburbs grew from 19 percent in 1990 to 35 percent in 2010. Further, Lacy (2016) suggests exponential increases over the last three decades of populations of immigrants, low-income people, and Black or African American families living in the suburbs.

More recent analysis of data from the 2017 US Census American Housing Survey not only suggests existing diversity within suburban neighborhoods, but also that the majority of households in the US are within suburban neighborhoods. As represented in Table 1, 51.8 percent of respondents to the 2017 American Housing Survey identified their neighborhood as a suburban neighborhood. Descriptive statistics also suggest that roughly two-thirds of Asian respondents, 45.2 percent of Black or African American respondents, and nearly one-half of Hispanic or Latino respondents reside in a suburban neighborhood. Collectively, all racial groups except American Indian or Alaska Native are more likely to identify their neighborhood as suburban than they are urban or rural. Similarly, respondents living at or below the poverty level are more likely to reside within the suburbs (40.5 percent) compared to urban or rural neighborhoods. United States citizens by naturalization are also more likely to identify their neighborhood as a suburban neighborhood (57.7 percent) and respondents who are not US citizens are more likely to reside in suburban neighborhoods (51.8 percent) compared with urban or rural neighborhoods. Together, research exploring the characteristics of people living within suburban regions (Frankenberg, et al., 2016; Frey, 2011; Lacy, 2016) and recent analysis of the 2017 US Census American Housing Survey suggest that the majority of US households are within diversifying suburban neighborhoods and the presented populations, with the exception of American Indian or Alaska Native, are more likely to identify their neighborhood as suburban

rather than urban or rural. Given the recent growth in diversity within the nation's suburbs (Frankenberg, et al., 2016; Frey, 2011; Lacy, 2016), analyzing suburban school district policies and practices may provide an avenue to understand how schools have responded to racial demographic changes; specifically, in fostering an environment that promotes integration in dual enrollment programming as an acknowledgement of systemic forces which have created an uneven playfield by race.

Table 1. 2017 U.S. household profile: Frequency distributions by race, poverty status, and citizenship status within urban, suburban, and rural neighborhoods.²

		Neighborhood Classification		
		Urban	Suburban	Rural
All Households		26.8%	51.8%	21.4%
Household Race	American Indian or Alaska Native	27.1%	34.5%	38.4%
	Asian	33.3%	63.4%	3.4%
	Native Hawaiian or Other Pacific Islander	34.0%	53.5%	12.5%
	Black or African American	44.0%	45.2%	10.8%
	Hispanic or Latino	41.4%	49.2%	9.4%
	White	19.9%	53.1%	27.0%
	Two or more races	29.6%	50.5%	19.9%
Household Poverty Level	At or Below Poverty Level	38.8%	40.5%	20.8%
	Above Poverty Level	24.8%	53.7%	21.5%
Household Citizenship Status	U.S. Citizen by Birth	24.6%	51.3%	24.1%
	U.S. Citizen by Naturalization	36.4%	57.7%	5.9%
	Not a U.S. Citizen	41.0%	51.8%	7.2%

Exploring dual enrollment participation in the suburban context is important because growth in racial diversity within suburban regions has the potential to lead to greater integration of students. Research has suggested that racial desegregation in schools has positive effects for students such as a reduction in racial prejudice and stereotypes, an increase in friendships across racial groups, and an increased likelihood to live and work in more desegregated environments

² US Census, American Housing Survey, Special Tabulation of the 2017 final data.

after high school (Braddock & McPartland, 1989; Pettigrew & Tropp, 2006; Tropp & Prenovost, 2008; Wells & Crain, 1994). Complicating this line of inquiry, researchers have also found that racially desegregated schools can still be racially segregated within the school by disproportionately placing low-income, Black, and Hispanic and Latino students in non-advanced educational tracks (e.g., Frankenberg et al., 2017; Lewis & Diamond, 2015; Mickelson, 2001; Oakes, 1985; Oakes et al., 2000; Welner & Oakes, 2005; Welton, 2013).

Further understanding the school district policies and practices that contribute to racial desegregation is important within racially diversifying suburbs. The way high schools respond to shifting demographics can impact the educational experience of students, such as: the offering of quality, well-matched and engaging instruction that is responsive to student needs (Dentler & Hafner, 1997; Wortham et al., 2002); the relationship building process between student families and the school (Lowenhaupt, 2014; Posey-Maddox, 2014); and ultimately how inclusive the high school is for its students. As such, dual enrollment policy and practice that promotes racial desegregation in participation and leads to true integration may contribute to positive educational and relationship-based outcomes for students.

My dissertation is aimed at understanding how dual enrollment policy and practice mold racial (in)equity in two-year college dual enrollment access. Specifically, the research question that guides my dissertation is: *Among suburban dual enrollment partners, how do dual enrollment policies and practices shape racial (in)equity in technical college dual enrollment participation?*

Chapter II: Literature Review

Within this chapter, I synthesize dual enrollment research that focuses on issues of equity by examining the educational benefits of dual enrollment participation and incorporate dual enrollment participation research situated within the nation's suburbs. Related research exploring causes of racial disproportionality in Advanced Placement (AP) and honors course participation is examined due to existing gaps in the dual enrollment research. While the AP and honors course research does not address the gaps in the dual enrollment literature situated within the suburbs, it provides a related foundational understanding of the existing findings in a similar body of inquiry.

There are many reasons for conducting a review of the current literature. First, scholars have recently taken a broad approach to reviewing the literature on dual enrollment (An & Taylor, 2019), but have not positioned this synthesis with a more nuanced approach towards equity by accounting for the interplay of dual enrollment with student characteristics in predicting student outcomes. This approach will broaden the understanding of dual enrollment and whether participation advances student success across student groups. Doing so will provide foundational empirical evidence to practitioners and policymakers, and a synthesis to guide future equity-minded dual enrollment research. Second, a component of this review will focus on dual enrollment participation research within the nation's demographically shifting suburbs and the institutional factors and practices that contribute to racial (in)equity in AP and honors course participation within suburban regions. To date, a comprehensive review of dual enrollment participation research within the nation's suburbs is missing within the literature. This review will help advise practitioners and policy makers within suburban school districts on the existence of racial (dis)parity in dual enrollment participation and the institutional factors and practices

that might shape racial (dis)parity in dual enrollment participation. Together, this review will assess the existing landscape of dual enrollment literature focusing on issues of equity and identify future directions for inquiry.

Search Methods

The methods I used to explore the research literature can be categorized into three domains: strategies for identifying relevant literature; attributes I used to search for relevant literature; and the process I used to review the available literature. The strategies and approaches allowed for a comprehensive review of the research literature and supported the positioning of my research to add to the existing empirical evidence on high school dual enrollment.

The literature search process focused on four topics: racial trends in postsecondary outcomes within the two-year college sector; the relationship between high school dual enrollment and postsecondary outcomes by student race; high school dual enrollment participation by student race and high school location (urban vs. suburban); and high school tracking and racialized causes for disparate participation in AP and honors coursework in suburban regions. The topic of high school dual enrollment and racialized causes for disparate participation was originally explored, and the search process provided no relevant results. This finding prompted the search process to expand to AP and honors course participation.

I selected these areas of research for a series of reasons. First, research has generally suggested dual enrollment as a lever for postsecondary success. Given a history of systemic racial inequities that have contributed to differences in student outcomes by race, such as college graduation rates, it is important to (1) understand if dual enrollment transmits its positive educational benefits across race, and (2) understand if racial (dis)parity in dual enrollment participation exists. Further, it is important to investigate how these rates of dual enrollment

participation vary in regions that have undergone significant demographic shifts in order to begin an understanding of institutional responses to demographic changes within the community.

I primarily used online databases to find relevant research. Specifically, Academic Search Premier, the Educational Resources Information Center (ERIC), Educational Research Complete, and Google Scholar were used. Cited literature within relevant literature was referenced to guide study specific searches. Within the search processes, targeted searches to scholarly journals were conducted that focused on higher education and community colleges. Within these scholarly journal searches, results were limited to journals highly regarded in the field for their peer-review processes and quality management. Examples of journals include: *Community College Journal of Research and Practice*, *Community College Review*, *Peabody Journal of Education*, *American Educational Research Journal*, *Journal of Educational Psychology*, *New Directions for Higher Education*, *Research in Higher Education* and the *Journal of Higher Education*. Searches of related text using the UW-Madison library system were also conducted. Further, websites and online resources were referenced from a series of higher education research organizations that included Achieving the Dream, the National Center of Education Statistics, and the Community College Research Center at Columbia University.

A series of attributes were used to identify relevant literature within the search process across the four topic areas. Because the topic of interest crosses both the secondary and postsecondary system, the search criteria assessed these two sectors separately. The topic of (1) racial trends in postsecondary outcomes within the two-year college sector included an analysis of student outcomes made available through the National Center of Education Statistics and a review of written reports generated from search attributes that included: *equity gaps*, *achievement gaps*, *opportunity gaps*, *race*, *ethnicity*, *student success*, *student outcomes*, and

college completion. Attributes searched for by the remaining topics included: (2) the relationship between high school dual enrollment and postsecondary outcomes among racially minoritized and historically marginalized populations: *dual enrollment, dual credit, concurrent enrollment, student success, student outcomes, college completion, race, ethnicity, first-generation, disability, low-income, and economically disadvantaged* (3) high school dual enrollment participation by student race and high school location (urban vs. suburban): *dual enrollment, dual credit, concurrent enrollment, participation, access, race, ethnicity, high school location, urban high school, suburban high school, rural high school, suburban, urban, and rural* (4) high school tracking and racialized causes for disparate participation in advanced coursework: *tracking, race, ethnicity, participation, segregation, advanced coursework, advanced placement, and access.* All retrieved literature was saved as Portable Document Format (PDF) files for future consideration and review.

The process I used to review the retrieved literature began by organizing the literature into the four topic areas. Subsequently, I limited the literature based on the publication year to obtain the most recent evidence possible. A comparatively larger body of empirical evidence studying the relationship between dual enrollment and postsecondary outcomes has been generated in the last ten years. As such, much of the reviewed research in this line of inquiry is limited to a publication year within the last ten years. This same approach was applied to research investigating dual enrollment participation by student race and high school location, which largely has emerged in the last ten years. Literature on high school tracking and racialized causes for disparate participation in advanced coursework yielded a broader time frame for inclusion to the review processes; particularly related to the prevalence of racialized tracking in high schools and the disparate impact standardized testing has on minoritized populations.

Nonetheless, when situating this topic of inquiry in the suburban high school context, much of the tracking research literature emerged more recently within the last five years. While the majority of the research I explore within my review was published in the last ten years, I still acknowledge older pieces within the review if the information was relevant.

Next, I conducted an initial review of the article title, abstract, and findings to prioritize if the literature was relevant. When abstracts were unavailable, the discussion sections were reviewed to identify significance and relatedness of the article to my research. This allowed for an initial screening so more focused time could be used to digest the available literature that was deemed relevant. Each publication was then examined, and annotations were recorded to identify relatedness for inclusion within a final literature review. Collectively, this process provided a mechanism to conceptualize my research that contributes to the existing literature on racial equity in high school dual enrollment.

Lines of Inquiry in Research Literature Review

Four lines of inquiry were uncovered through the literature review: racial trends in postsecondary outcomes within the two-year college sector; the relationship between high school dual enrollment and postsecondary outcomes by student race; high school dual enrollment participation by student race and high school location (urban vs. suburban); and high school tracking and racialized causes for disparate participation in advanced coursework in suburban regions. For each theme, I presented a summary of the existing research to identify key takeaways, critiques, and limitations. I also presented methodological approaches that researchers used to investigate each of the four lines of inquiry, along with evidence suggesting a need for future research to use theory to make sense of (dis)parity in dual enrollment participation.

Collectively, the existing empirical evidence on these topics bring to light the need to explore how high school location might moderate the relationship between student race and dual enrollment participation, as well as a need to critically examine how dual enrollment policy and practice shape dual enrollment participation within US suburban regions.

Racial Trends in Postsecondary Outcomes within the Two-Year College Sector

With an open access mission, two-year college enrollments in the US have skyrocketed as brick-and-mortar two-year institutions have nearly doubled in count since the early 1960s (Cohen et al., 2014). Government officials and community leaders look to these institutions to provide a wide range of academic opportunities, which has allowed more diverse populations with multifaceted barriers to academic success the ability to enroll (Cohen et al., 2014). While two-year college access has supported a student enrollment increase from 5.7 million to 7.2 million between 2000 and 2010, over 70 percent of public two-year college students do not graduate with a postsecondary degree within 150 percent of normal time (National Center of Education Statistics, 2018).

Before further examining postsecondary outcomes within the two-year college sector, it is important to acknowledge that two-year college student success is a multi-dimensional concept. While the following analysis focuses on first-time college student graduation within 150 percent of normal time, it should be noted that this definition does not embody all two-year college student goals. Given the diverse populations that enroll in two-year colleges and the expansive course and program offerings, interpreting results when using a single measure of success should be interpreted with thoughtfulness and care.

Two-year college graduation rates and other public education student success statistics (e.g., college GPA and college persistence) are strikingly dissimilar when analyzed by student

race (National Center of Education Statistics, 2018). As represented in Table 2, the public two-year college graduation rate within 150 percent of normal time has demonstrated an increasing seven-year trend; from 21.9 percent for the 2008 cohort to 26.6 percent for the 2014 cohort. All individual races had an increase in graduation rates from 2008 to 2014. The Asian student population had the highest graduation rate in 2008 at 28 percent and the highest graduation rate in 2014 at 33.8 percent. The White population had the second highest graduation rate in 2014 at 30.5 percent. The Black or African American population had the lowest graduation rate in all presented years with the most recent graduation rate of 17.3 percent in 2014. While all student populations across the nation had an increase in graduation rates, it is important to evaluate the rate of change over time; specifically, to better understand the narrowing or widening of racialized inequities in educational outcomes.

Table 2. First-time student graduation rates within 150% of expected time at degree-granting public two-year colleges (2008-2014), by race.³

	Cohort Year							Difference 2008 to 2014
	2008	2009	2010	2011	2012	2013	2014	
American Indian or Alaska Native	18.6%	18.4%	17.8%	17.3%	17.6%	19.6%	21.8%	3.2%
Asian	28.0%	28.0%	28.2%	29.0%	31.5%	32.3%	33.8%	5.8%
Native Hawaiian or Other Pacific Islander	16.1%	13.5%	17.7%	16.8%	23.8%	22.0%	24.4%	8.3%
Black or African American	14.5%	13.3%	12.8%	12.2%	14.1%	16.0%	17.3%	2.8%
Hispanic or Latino	17.0%	17.5%	17.7%	19.3%	20.5%	22.2%	23.4%	6.4%
White	24.7%	24.1%	24.1%	25.4%	27.2%	29.2%	30.5%	5.8%
Two or more races	20.6%	20.9%	18.8%	19.1%	19.2%	20.4%	21.5%	0.9%
Public Two-Year Institutions	21.9%	21.3%	21.1%	21.8%	23.6%	25.3%	26.6%	4.7%

The graduation rate for all public two-year colleges had a 4.7 percentage point increase from 2008 to 2014. All populations other than the American Indian or Alaskan Native, Black or African American, and students of two or more races had a graduation rate percentage point change that is higher than the national rate for all public two-year institutions. The Hispanic or Latino population had the second highest percentage point change of 6.4 percent, and the Native Hawaiian or Other Pacific Islander population had the highest percentage point change of 8.3 percent. While these student populations have seen significant increases in graduation rates over the seven presented years, both groups had a 2014 graduation rate that was still below the overall

³ National Center for Education Statistics. (2018). *Graduation Rates*. Washington, DC: Department of Education.

graduation rate for public two-year institutions. The Asian and White population had a percentage point change of 5.8 percent which is above the overall rate of change for public two-year colleges, and both populations had a 2014 graduation rate that was higher than the overall rate for public two-year institutions. This finding suggests that these populations are not only graduating at a rate higher than other presented groups, but also accelerating at a faster rate, demonstrating the potential for a widening of inequities in graduation by race. Students from two or more races had a 0.9 percentage point increase in graduation from 2008 to 2014, and Black or African American students had a 2.8 percentage point increase in graduation from 2008 to 2014. This is significant because not only did these populations have the lowest graduation rates in 2014, they also had the lowest rate of change in graduation over time.

A criticism of widely published statistics like college graduation rates through the US Department of Education is that the presented data does not allow for the intersection of race and other confounding variables related to college graduation, such as socioeconomic status, to explore outcomes for low-income Black or African American students and low-income White students for instance. Hill (2016) notes through her analysis of the Coleman report that there is a continued need to conduct student success and policy research that explores the intersections between student characteristics such as race, socioeconomic status, gender, and family background. This concept is especially relevant within the two-year college sector as literature suggests that two-year college students are more likely to enroll with a host of academic and socioeconomic barriers making it challenging to navigate the academic system (Cohen et al., 2014; McCabe, 2000; O'Connor, 2009; Thayer, 2000; Walpole, 2003). Due to an open access mission and comparatively lower costs, two-year colleges tend to enroll students who are more academically and economically disadvantaged than do four-year colleges (Cohen et al., 2014;

McCabe, 2000; O'Connor, 2009; Thayer, 2000; Walpole, 2003). These institutions serve proportionally more racially minoritized and first-generation students (Cohen et al., 2014; Thayer, 2000), and students are more likely to enroll on a part-time basis compared to their four-year counterparts due to competing demands such as employment and home life requirements (Cohen et al., 2014). Collectively, the two-year college literature suggests that the diversity and multifaceted barriers to success among two-year college students highlight the importance of exploring the intersections of these constructs in relation to student outcomes such as college graduation.

In response to the complexity of students in higher education, research has explored the intersections of student characteristics and their relationship with student outcomes. Using data from the National Educational Longitudinal Study of 1988/2000, Carnevale and Strohl (2013) assessed two-year and four-year college drop-out rates and college graduation rates by race. The researchers analyzed the intersections of race with socioeconomic status and high school test scores, a proxy for pre-college academic achievement, to better understand the pervasiveness of racialized variance in these student outcomes. Results demonstrated that while controlling for income and high school test scores, race was significantly related to both college drop-out rates and graduation rates. Specifically, Carnevale and Strohl (2013) found that 45 percent of low-income White students dropped out of college at some point in their academic career, while 55 percent of low-income Black students and 59 percent of low-income Hispanic students dropped out of college. The researchers also found that low-income White college students were nearly twice as likely to graduate with a college degree compared to low-income Black and Hispanic college students. Carnevale and Strohl (2013) also analyzed racialized variance in college graduation rates for college students in the top half of the nation's high school test-score

distribution. The researchers found race as a significant variable related to graduation rates for high achieving students. Carnevale and Strohl (2013) reported that 77 percent of high achieving White students graduate with a college degree while 57 percent of high achieving Black and 56 percent of high achieving Hispanic students graduate with a college degree. Carnevale and Strohl (2013) suggest the differences in outcomes among similar students from varying races derive from the “increasing relegation” of Black and Hispanic students in higher education.

The implications of the Carnevale and Strohl (2013) study are especially relevant to the two-year college sector given proportionately more two-year college students identify as Black or Hispanic compared to the four-year college sector (National Center of Education Statistics, 2019b). Further, proportionately fewer two-year college students identify as White compared to four-year college students (National Center of Education Statistics, 2019b). As represented in Table 3, 14.1 percent of students enrolled in public two-year colleges identified as Black in the 2016-17 academic year while 11.9 percent of students enrolled in public four-year colleges identified as Black in the 2016-17 academic year. Similarly, 24.2 percent of students enrolled in public two-year colleges identified as Hispanic in the 2016-17 academic year while 17.2 percent of students enrolled in public four-year colleges identified as Hispanic in the 2016-17 academic year. Over the seven years of data presented, the proportion of Black students enrolled in both two-year and four-year colleges stayed relatively consistent but is gradually declining, while the proportion of Hispanic students increased in both college sectors; from 17.6 percent to 24.2 percent for two-year colleges and 11.8 percent to 17.2 percent for four-year colleges. While the proportion of White students declined in both sectors, four-year colleges maintained White majority institutions (58.8 percent in 2016-17) and two-year colleges are comparatively more racially diverse (50.8 percent White in 2016-17).

Table 3. Enrollment at two-year and four-year degree-granting public colleges (2011-2017), by race.⁴

		Academic Year						
		2011	2012	2013	2014	2015	2016	2017
American Indian or Alaska Native	Two-Year College	1.1%	1.1%	1.1%	1.0%	1.0%	1.0%	0.9%
	Four-Year College	1.0%	0.9%	0.9%	0.8%	0.8%	0.7%	0.7%
Asian	Two-Year College	6.0%	5.9%	5.8%	6.0%	6.1%	6.2%	6.4%
	Four-Year College	6.4%	6.4%	6.4%	6.6%	6.8%	7.0%	7.2%
Native Hawaiian or Other Pacific Islander	Two-Year College	0.4%	0.4%	0.4%	0.3%	0.3%	0.3%	0.3%
	Four-Year College	0.3%	0.3%	0.3%	0.3%	0.2%	0.2%	0.2%
Black or African American	Two-Year College	15.7%	15.9%	15.7%	15.4%	15.0%	14.5%	14.1%
	Four-Year College	12.6%	12.6%	12.4%	12.2%	12.2%	12.1%	11.9%
Hispanic or Latino	Two-Year College	17.6%	18.5%	19.6%	20.9%	22.4%	23.1%	24.2%
	Four-Year College	11.8%	12.5%	13.2%	14.0%	14.7%	16.3%	17.2%
White	Two-Year College	57.5%	56.1%	55.0%	53.5%	52.1%	51.7%	50.8%
	Four-Year College	66.3%	65.1%	64.2%	63.1%	62.0%	60.0%	58.8%
Two or more races	Two-Year College	1.7%	2.2%	2.5%	2.9%	3.1%	3.3%	3.3%
	Four-Year College	1.7%	2.2%	2.7%	3.0%	3.4%	3.6%	3.8%

Studies exploring student characteristic intersectionality in relation to student outcomes have also controlled for student engagement variables. Using ten years of data from the

⁴ National Center for Education Statistics. (2019b). *12-month Enrollment component final data (2001-02, 2002-03, 2005-06 - 2015-16) and provisional data (2003-04, 2004-05, 2016-17)*. Washington, DC: Department of Education. Retrieved from website: <https://nces.ed.gov/ipeds/TrendGenerator/app/trend-table/2/2?trending=row&f=2%3D1%3B4%3D1%3B5%3D2%7C1&cid=65>

Community College Survey of Student Engagement (CCSSE), researchers at the Center for Community College Student Engagement found that higher levels of student engagement (e.g., engaging in active and collaborative learning opportunities, demonstrating student effort, and engaging with student supports such as tutoring services) are associated with higher two-year college student outcomes as measured by self-reported college GPA (Center for Community College Student Engagement, 2014). The researchers suggest that this relationship between student engagement and postsecondary outcomes is long standing across historical cohorts of colleges who have administered the CCSSE. Further, ten-year results suggest that Black females are the most engaged group of students while White males are the least engaged group of students. In an analysis of male students, the researchers found that Black males are the most engaged followed by Hispanic males. Further, the researchers found a consistent historical pattern that White males are the least engaged student population but had the strongest college GPAs. Additionally, while Black males had the highest levels of college engagement, the student population had the lowest reported college GPAs. The researchers also found that while controlling for similar levels of engagement, racialized disparities in college GPA persisted with White males having the highest college GPAs followed by Hispanic males and Black males. The Center for Community College Student Engagement suggest the phenomenon of more engagement, but lower outcomes may stem from institutional cultures with problematic or underdeveloped campus racial climates that fail to support cultural sensitivity and inclusivity.

Over the last several decades, research in the higher education landscape has suggested college culture as a significant barrier to student success among racially minoritized students, and particularly so for Black and Hispanic students. In reflection to racialized inequities in college dropout rates, Steele (1992) suggests that Black students are not dropping out of college

because they do not value it, but instead because they do not identify with the culture of the institution they are attending. This sentiment is substantiated through a series of studies near the turn of the century arguing that postsecondary institutions need to be culturally sensitive and proactive to eliminating institutional racism in support of all students reaching their academic goals (e.g., Credle & Dean, 1991; Madkins & Mitchell, 2000; Parker, 1997). These findings are especially relevant to the two-year college sector as these institutions serve proportionately more Black and Hispanic students compared to four-year institutions (National Center of Education Statistics, 2019b). Further, the recent exponential growth in Hispanic student enrollment in two-year colleges spotlights the importance of ensuring these institutions develop a culture of inclusion that values diversity (National Center of Education Statistics, 2019b).

More recently, through analysis of focus group interview data from three universities, Solórzano and colleagues (2001) found that racial microaggressions (i.e. subtle insults that are verbal, nonverbal, and/or visual) existed in academic spaces (e.g. faculty displaying lower expectations of Black students, faculty instilling self-doubt in Black students, racial segregation of students in class work groups) and social spaces (e.g. student racial discrimination in study group formation, students making racist comments) and that these microaggressions have a negative impact on the campus racial climate by supporting both racialized academic and social isolation. The researchers suggest that these isolating practices may be an explanation for racial disparities in student outcomes such as graduation rates. While the study focused on four-year institutions, the findings may be relevant to two-year colleges as these institutions also have racial inequities in student outcomes (National Center of Education Statistics, 2018). Museus (2008) echoes Solórzano and colleague's (2001) finding and suggests that racially minoritized students' inability to form a connection within their college culture may contribute to racialized

variance in college graduation. Through one-on-one interviews with 12 Asian Americans and 12 African American college students enrolled at predominately White institutions, Museus (2008) found that ethnic student organizations provided students with ecosystems of cultural familiarity, avenues for cultural advocacy and expression, and platforms where students could voice the existence of experienced college inequities. The researcher suggests that these organizations serve as institutional agents and provide opportunities for greater social and academic integration that may lead to stronger student outcomes.

Together, these findings highlight important actions education institutions should take to address inequities in educational outcomes, including college graduation rates. This is not only vital to two-year colleges which are more likely to enroll racially diverse populations, but also to high schools offering dual enrollment pathways to two-year college education. Adopting cultural sensitivity and creating cultures of inclusivity where students feel welcome to participate in academic and social opportunities are vital to seeing historically marginalized students reaching their academic goals. Further, building these cultures of inclusivity will aid in the removal of institutional barriers to momentum building opportunities, such as dual enrollment, that fuel educational aspirations and success.

Dual Enrollment and Postsecondary Student Outcomes by Student Race and Other Constructs

A prominent benefit for offering dual enrollment programming is to provide high school students an opportunity to receive both high school credit and postsecondary credit with completion of a single course. Through coordinated efforts between high schools and postsecondary institutions, high school students can choose from a breadth of subject areas that may not have been accessible if a dual enrollment partnership did not exist. Beyond an increase

in educational offerings, the empirical research suggests several benefits for participating in dual enrollment programs, including a higher likelihood to participate in postsecondary education after high school graduation and stronger postsecondary outcomes (e.g., D'Amico et al., 2013; Karp et al., 2008; Kim & Bragg, 2008; Wang et al., 2015). In a theoretical model of momentum for two-year college student success, Wang (2017) explores why dual enrollment contributes to postsecondary success and suggests dual enrollment as carry-over momentum prior to two-year college entry. Wang (2017) positions dual enrollment as a contributing force to later momentum of two-year college enrollment; specifically, dual enrollment participation may be a motivating factor for students in relation to future postsecondary student success.

In general, the existing research on dual enrollment suggests that these offerings transmit positive educational benefits among participating high school students. In a study investigating the associations between dual enrollment participation and postsecondary outcomes, D'Amico and colleagues (2013) conducted logistic regression analysis and concluded that dual enrollment participants performed better than non-participants in relation to first-to-second-year technical college retention. Similarly, Karp and colleagues (2008) found that dual enrollment participants in Florida and New York City had comparatively stronger postsecondary outcomes that included second-year college retention, third-year cumulative GPA, and more credits earned by the third year. Through path analysis of a sample of 15,000 first-time technical college students, Wang and colleagues (2015) found that dual enrollment participation was related to early academic momentum indicators such as more attempted credits, a higher likelihood of college entry without delay, and summer college enrollment after high school graduation. Wang and colleagues (2015) also found that the identified early academic momentum indicators were positively related to the student's completion of a credential and second-year retention. Despite

differing statistical approaches, these collective findings within the two-year college landscape are consistent in suggesting that dual enrollment has a significant and positive association with postsecondary student success.

A limited body of two-year and four-year college research has explored whether dual enrollment programs transmit their positive effects within student subgroups. This equity focused research extends the understanding of the relationship between dual enrollment participation and student outcomes by accounting for the differences between dual enrollment participants and nonparticipants. Further, this body of research explores the systematic differences of dual enrollment participants and the interplay of dual enrollment with student characteristics in predicting student outcomes to understand if dual enrollment might be a lever for advancing student success for all student populations.

The reviewed dual enrollment research exploring the interplay of dual enrollment with student characteristics in predicting student outcomes leverages a single way of classifying dual enrollment as a binary indicator (e.g., An, 2013a; An 2013b; Karp et al., 2008; Plasman & Gottfried, 2018; Speroni, 2011; Taylor, 2015). That is, students either participate or do not participate in dual enrollment programming. An and Taylor (2019) suggest this approach may be out of necessity based on data availability as well as a substantive reason that it is vital to first address whether the intersection of dual enrollment with student characteristics predicts student outcomes. The assumption that the benefits of dual enrollment participation are equal regardless of the number of dual enrollment credits or courses completed is a limitation to this existing body of research given the broader dual enrollment literature suggests that the effects of dual enrollment on student outcomes may vary based on dual enrollment intensity (Delicath, 1999; Giani et al., 2014).

Only a few studies have examined the interaction of dual enrollment participation with student characteristics and the associations with college entry. Plasman and Gottfried (2018) used the Educational Longitudinal Study of 2002 developed by the National Center for Education Statistics to examine Science, Technology, Engineering, and Mathematics (STEM) related Career and Technical Education (CTE) dual enrollment. Using logistic regression and an interaction term, the researchers found that students with a learning disability who enrolled in applied STEM CTE dual enrollment courses had a 2.35 times higher odds of college enrollment immediately after or shortly after high school graduation compared to students with a learning disability who did not enroll in applied STEM CTE dual enrollment courses. Similarly, through fixed-effect modeling of longitudinal data from Florida, Speroni (2011) found that Black and Hispanic students participating in dual enrollment were equally as likely to enroll in postsecondary education as White dual enrollment students. In another state-wide study, Taylor (2015) used propensity score matching across a dataset that included 41,727 students who completed high school in spring of 2003. Results suggest that racially minoritized students who participated in dual enrollment were 26 percent more likely to enroll in postsecondary education than similar students who did not participate in dual enrollment. While limited, these studies suggest dual enrollment as a potential driver for subsequent postsecondary enrollment among students with disabilities and racially minoritized student populations.

Research accounting for differences in student characteristics among dual enrollment participants and nonparticipants has generally suggested comparatively stronger academic performance for dual enrollment participants. In a study conducted by Karp and colleagues (2008), regression analysis revealed that students from low-income backgrounds who participated in dual enrollment had a cumulative third year college GPA that was .27 points

higher than low-income students who did not participate in dual enrollment. High-income students who participated in dual enrollment had a cumulative third-year college GPA that was .17 points higher than high-income non-dual enrollment students. Karp and colleagues (2008) found that the difference (.27 versus .17) was statistically significant and suggested that dual enrollment more positively effects low-income students in relation to college GPA. In contrast, An (2013b) found that dual enrollment participation benefits low-income students as much as non-low-income students in relation to first-year college GPA. It is unclear why these two studies demonstrate competing findings of differential effects across socioeconomic status; future research that addresses these differing findings would help make sense of the results. An (2013b) also found that first-generation students who participated in dual enrollment had a first-year GPA that was 0.09 points higher than first-generation students who did not participate in dual enrollment.

There are significant gaps in the dual enrollment academic achievement research literature that examines student outcomes prior to college graduation. Aside from the limited quantity, dual enrollment differential effects have only been analyzed across student socioeconomic status and first-generation status. Future academic achievement literature should not only expand upon the student populations targeted for dual enrollment differential effects, but also the academic achievement dependent variable. No studies exploring the differential effects of dual enrollment across student characteristics have assessed these relationships with college retention outcomes. This may be a promising line of inquiry given the broader dual enrollment research suggests that dual enrollment participation is positively related to college retention (e.g., D'Amico et al., 2013; Karp et al., 2008; Wang et al., 2015). Extending the understanding of academic achievement beyond success within the classroom will provide

nuance to how dual enrollment interacts with student populations in relation to this understudied student outcome.

Three studies have explored the interaction between dual enrollment and student characteristics and the relationship with college graduation. Using propensity score matching with data from the National Education Longitudinal Study: 2002, An (2013a) found that dual enrollment participation had significant benefits in strengthening college degree completion for low-income students while generating weaker positive effects for students from more affluent backgrounds. Results also suggest the likelihood of first-generation students attaining a four-year degree was eight percentage points higher for dual enrollment participants than first-generation students who did not participate in dual enrollment. Echoing a similar positive effect through propensity score matching, Taylor (2015) found that racially minoritized students who participated in dual enrollment were 14 percent more likely to graduate than similar students who did not participate in dual enrollment. In a state-wide Florida study, Speroni (2011) found that Black and Hispanic students participating in dual enrollment had a slightly smaller increased likelihood of graduation (6 percent) compared to White dual enrollment students (8 percent). These studies generally suggest that dual enrollment participation increases the likelihood of college graduation, and that dual enrollment's positive effects build momentum to completion across diverse student populations.

In a related line of inquiry, research exploring the differential effects of dual enrollment within student characteristics has yet to analyze the interaction with time to college graduation. This is surprising given dual enrollment allows students to accumulate high school credit prior to college entry which may reduce time to college graduation. In a national scan of state-level dual enrollment policy, Hoffman (2005) posited that dual enrollment participation can significantly

lower the cost of a college degree due to a reduced time to graduation. Hoffman argued that reducing the cost and time to college graduation is particularly attractive for historically minoritized populations who are also economically disadvantaged. This is important to consider in the two-year college context because these institutions enroll more racially and economically diverse populations with multifaceted barriers to academic success compared to the four-year sector (Cohen et al., 2014).

Collectively, research on the positive effects of dual enrollment across student populations suggests dual enrollment as a potential lever for helping racially minoritized, low-income, students with disabilities, and first-generation students attain postsecondary success. These positive effects have lasting effects that extend beyond initial enrollment in college and include higher GPAs and an increased likelihood of college graduation. However, this body of work is strikingly limited and even more so when categorized for the student characteristics differential effects are examined. Without evaluating the effects of dual enrollment within student characteristics, the broader body of dual enrollment research assumes that dual enrollment equally benefits all students. Future research that replicates these existing studies or expands the student characteristic variables would solidify and extend the understanding of dual enrollments effect on student outcomes.

Dual Enrollment Participation: Student Race and High School Location

Although many high schools and postsecondary institutions have collaborated to develop dual enrollment offerings, research on dual enrollment participation suggests that participation across student race and within geographic location is far from equitable (e.g., Miller et al., Daugherty, 2017; Henneberger et al., 2015; National Center of Education Statistics, 2019a; Pierson et al., 2017; Pretlow & Wathington, 2013; Pretlow & Wathington, 2014). If students

were equitably represented within dual enrollment, it would be expected that the proportion of dual enrollment participants for a specific subgroup is consistent across all other subgroups e.g., the percent of Black high school students participating in dual enrollment is similar to the percent of White high school students participating in dual enrollment.

A review of the literature found only one longitudinal study that explored changes in state-level policy and whether the policy impacted dual enrollment participation by race. Using data collected by the Virginia Community College System, Pretlow and Wathington (2014) examined dual enrollment participation associated with a 2005 policy change intended to extend dual enrollment access. Findings suggest that dual enrollment participation increased after the implementation of the policy. Of graduating high school seniors from a public Virginia high school in spring 2004, roughly 13.8 percent participated in dual enrollment, while roughly 15.8 percent of a comparable cohort in 2006 participated in dual enrollment after the policy implementation. This change represented an 18 percent increase in participation. While the policy appeared to increase participation, Pretlow and Wathington (2014) found that Black and Hispanic high school student dual enrollment participation was significantly underrepresented. In 2006, Black and Hispanic high school students represented 23 percent and 5.5 percent of the overall graduating population respectively. Of dual enrollment participants, Black and Hispanic 2006 high school graduates represented 14 percent and .41 percent, respectively. This finding was noted as problematic given the policy's intentions to expand dual enrollment participation through two provisions: all high school students were to be informed of the available dual enrollment opportunities and access was to be extended beyond high school juniors and seniors to also include freshman and sophomore students.

A series of state-level studies have explored equity in dual enrollment participation by race for a single year. In Maryland, Henneberger and colleagues (2015) explored 12th grade dual enrollment participation during the 2013-14 academic year. Researchers found sizable, racialized disparities in dual enrollment participation for Black and Hispanic students. Of the 12th grade students, 49 percent identified as White and 69 percent of students participating in dual enrollment identified as White, while 36 percent of the 12th grade class identified as Black and 20 percent of students participating in dual enrollment identified as Black. Similar disproportionality was reported for Hispanic students as 10 percent of the 12th grade population identified as Hispanic while 5 percent of students participating in dual enrollment identified as Hispanic.

Similarly, Pierson and colleagues (2017) conducted regression analysis to understand the likelihood of Oregon high school students enrolling in dual enrollment. Results suggest that Black and Hispanic high school students, with a significant odds ratio of 0.685 and 0.844 respectively, were less likely to participate in dual enrollment compared to White and Asian students. High school students who received school discipline (e.g., ever expelled, ever had an in-school suspension, or ever had an out-of-school suspension) were also less likely to participate in dual enrollment compared to their peers. Another state-wide study by Miller and colleagues (2017) demonstrated similar findings in Texas. Roughly 26 percent of White 2015 high school graduates participated in dual enrollment while 10 percent of Black and 16 percent of Hispanic graduates participated in dual enrollment.

In a national study published by the U.S Department of Education (National Center of Education Statistics, 2019a), researchers used the High School Longitudinal Study of 2009 dataset to analyze dual enrollment participation across a series of student characteristics. Results

suggest that 30 percent of Hispanic students and 27 percent of Black students participated in dual enrollment while 38 percent of Asian and White students participated in dual enrollment.

Collectively, these studies suggest racial disproportionality in dual enrollment participation through relatively simple methods. Apart from the study conducted by Pierson and colleagues (2017), all studies presented their findings through descriptive statistics. Future research should leverage more rigorous statistical methods to assess for the statistical significance in dual enrollment participation disproportionality. Further, future research should control for interactions or covariates that may relate to the relationship between student race and dual enrollment participation. This approach would provide a more nuanced understanding of racialized disparities in dual enrollment participation by accounting for other variables that may interplay with student participation.

An even smaller body of research has explored dual enrollment access and participation within the nation's suburban regions. This is an important line of inquiry given the existence of racial disproportionality in dual enrollment participation and the recent growth in racial diversity within suburban regions (Frankenberg, et al., 2016; Frey, 2011; Lacy, 2016).

In a 2013 study using Virginia Community College System data, Pretlow and Washington (2013) explored the relationship between high school institutional characteristics and dual enrollment access. Findings suggested that high schools located in the suburbs and northern region of Virginia were significantly less likely to offer dual enrollment courses. In a national study using the High School Longitudinal Study of 2009 dataset, researchers found high school location as a significant variable correlated with dual enrollment participation (National Center of Education Statistics, 2019a). Specifically, the findings suggest that high school students in urban areas were more likely to participate in dual enrollment on a college campus (26 percent)

compared to students in suburban areas (11 percent). Pierson and colleagues (2017) also found that students enrolled at a suburban high school were less likely to participate in dual enrollment programs compared to students enrolled in urban high schools, and the odds ratio of an Oregon high school to offer dual enrollment was 0.583 at a $p < .05$ level. The relatively small percent of high school students enrolling in dual enrollment in the suburbs highlights a need to further understand how dual enrollment policy and institutional practices are shaping inclusivity in access.

While limited in total, the existing research on dual enrollment participation suggests disproportionately lower enrollment among Black or African American and Hispanic/Latinx student populations, and among students enrolled in suburban high schools. Research has yet to connect these variables through interaction analysis. Specifically, research exploring how high school location might moderate the relationship between student race and dual enrollment participation is missing from the literature.

Tracking and Institutional Factors as Causes of Disparate Participation by Race in Advanced Coursework in Suburban Regions

Research investigating the causes of racialized variance in dual enrollment participation is relatively non-existent. There is, however, extensive research exploring tracking systems in high school honors and AP courses. Within this comparable body of research, tracking is the practice of placing students in higher-level, middle-level, or lower-level courses in a specific subject area, such as English or math, based on the students' assessed or perceived abilities (Frankenberg, et al., 2016). Before reviewing the literature on tracking, it is important to differentiate and identify commonalities between dual enrollment and AP courses.

Dual enrollment courses allow for concurrent enrollment at a high school and a college through participation in one course. These opportunities allow students to receive college credit for courses that also meet high school graduation requirements. Dual enrollment courses are assessed and assigned a grade internally by the education institution; a point of differentiation to AP courses that are assessed externally via a third-party AP exam. Dual enrollment course offerings include both general education courses and CTE courses such as Automotive Fundamentals, Introduction to Mechanical Engineering Technology, Nursing Assistant, and Accounting Principles. Comparatively, the breadth of AP offerings is limited to coursework predominately in general education or liberal arts. According to the College Board's 2019 course listing, AP offerings are categorized into the following topics: Arts, English, History & Social Science, Math & Computer Science, Science, and World Languages & Cultures. While the differences in technical education dual enrollment and AP coursework are apparent, there are also significant similarities such as the use of eligibility requirements for participation. In a national scan of dual enrollment programs, Thomas and colleagues (2013) found that roughly two-thirds of high schools offering dual enrollment had established eligibility requirements such as strong standardized test scores, good academic standing including student disciplinary considerations, and high school staff endorsement.

Research findings on high school tracking suggest that these systems may be leading to unequal participation in high school advanced coursework; specifically, low-level and middle-level tracks comprised primarily of low-income and Black and Hispanic students (e.g., Mickelson, 2001; Oakes, 1985; Oakes et al., 2000; Welner & Oakes, 2005; Welton, 2013). These lower-level tracks are suggested to have less-engaging curriculum that is instructed by the least qualified teachers within an institution (Frankenberg, et al., 2016). Research has also suggested

that the practice of tracking has the potential to lead to in-school segregation where students enter the school together and are funneled to different classrooms based on their perceived or assessed abilities. Racialized tracking practices are even more impactful in suburban regions that are experiencing heightened racial demographics shifts. Despite the growing diversity within suburban regions, a limited body of research has explored the barriers to high school inclusivity in the suburbs. Nonetheless, the existing tracking research identifying racial barriers to access in high-track courses within the suburban context is generally summarized in three areas: educator beliefs of student belonging in advanced coursework; student discipline; and standardized tests for eligibility.

Educator Beliefs of Student Belonging in Advanced Coursework

Educators' racialized beliefs of student academic expectations and intelligence may be a catalyst to segregating students through tracking and is a concept equally relevant to suburban dual enrollment programs that require high school staff endorsement for student eligibility or in instances where staff are encouraged to recruit students into dual enrollment opportunities. The existing tracking research has suggested that Black and Hispanic students are assigned differential expectations in relation to academic performance compared to their fellow students. Further, research in the suburban context has suggested that education leaders have varied perceptions of student intelligence and capacity across race. These educator unconscious biases may not only shape the composition of who is enrolled in dual enrollment, but also the beliefs of racially minoritized students and their White peers in relation to student belonging (Lewis & Diamond, 2015).

One of the most comprehensive racialized tracking studies within suburban high schools was conducted by Lewis and Diamond (2015). Through analysis of administrative data and five

years of interviews with more than 170 education stakeholders, Lewis and Diamond (2015) examined how race and structural issues influenced in-school inequities within a suburban school district located in a relatively wealthy region of the United States. Through their analysis, Lewis and Diamond found that tracking led to in-school segregation by race where White students were overrepresented in AP or honors courses while Hispanic and Black students were profoundly overrepresented in low-track courses. Specifically, the high schools studied consisted of less than 50 percent White students, and the White composition in honors and AP courses was roughly 80 percent and 90 percent respectively. Interview results illustrated an institution that was “like two high schools.” Collectively, findings demonstrated in-school segregation within the suburban context and suggest a potential cause to inequities in participation that stem from perceptions of intelligence and lower expectations for Black and Hispanic students.

In a similar qualitative study exploring in-school segregation, Frankenberg and colleagues (2016) conducted interviews in six racially changing suburban high schools in Florida. The researchers found that high school staff cited skepticism of honors and AP course open enrollment that would allow low-income and racially minoritized populations the opportunity to participate. High school teachers shared hesitation for AP course open access that would allow students who did not have the perceived “skills” for AP course success the ability to enroll. The researchers also found that these perceptions of belonging were highly racialized with lower expectations for Hispanic and Black students. Further, participating teachers noted an organizational culture where “a lot of teachers” didn’t think open enrollment in AP courses was a “good thing.” By restricting who could enroll, the researchers noted that the high school could exclude students they perceived as not having the abilities to be successful within honors and AP

courses. Collectively, these beliefs of who “belongs” in advanced courses suggest that teachers may be contributing to in-school racialized segregation.

In another qualitative study, Tyler (2016) conducted interviews with 40 teachers, 23 principals and assistant principals, and 16 other school staff in six suburban school districts in the U.S. to better understand how educators from increasingly more diverse schools conceptualize diversity. Tyler conducted critical discourse analysis and found three core discourses that included: educators aspired and committed to preparing students for a diverse society; educators demonstrate color-muteness and insist student individuality; and educators have a deficit perspective of students by race, linguistic, and socioeconomic backgrounds. Tyler suggested that the existence and prevalence of deficit perspectives for diverse student populations threaten to perpetuate educational inequality in diversifying suburban schools and may negatively impact students’ ability to access certain educational opportunities such as honors and AP courses.

Student Discipline

Student discipline, a component of academic standing, may be a driver to excluding student populations from high-level tracks comprised of AP and honors courses. This practice may be equally impactful in high school dual enrollment programs that require good academic standing for student participation. Research has generally suggested that racially minoritized populations are disproportionately disciplined in the secondary system. This racially charged practice has been coined as differential selection and differential processing (Lewis & Diamond, 2015). Specifically, differential selection is the institutional practice that might lead to racially minoritized students being singled out for wrongdoing more often than White students, despite similar levels of misbehaving. Differential processing is the institutional practice that might lead

to racially minoritized students, once singled out for wrongdoing, receiving different punishment for similar transgressions compared to White students.

National conversations on student discipline have suggested the system in secondary education is highly racialized. Using data from the 2013-14 Civil Rights Data Collection System representing 99.5 percent of all public schools, the U.S. Department of Education (2016) found that 2.8 million K-12 students received out-of-school suspension. When analyzed by race, this figure was represented by roughly 40 percent Black students. The U.S. Department of Education findings suggested that Black K-12 students are 3.8 times more likely to be assigned out-of-school suspension compared to White students. Disparities by race also existed in relation to expulsion. Specifically, findings suggested that Black K-12 students are 1.9 times more likely to be expelled from school compared to White students. Together these national findings echo the existence of racial disparities in student discipline suggested in the research literature (e.g., Bradshaw et al., 2010; Losen, 2011; Losen et al., 2015; Skiba et al., 2014), which may lead to barriers to academic opportunities for racially minoritized populations.

Building upon the perception that a specific type of student belongs in AP and advanced coursework, Lewis and Diamond (2015) explored inequities in high school student discipline. Through analysis of administrative data and five years of interviews with more than 170 education stakeholders, the researchers summarized that interviewees aspired to have transparency in student discipline that was fair and unbiased. Nonetheless, interviewees acknowledged that the existence of differential selection and differential processing was highly racialized within their relatively wealthy, suburban school district. This practice was cited to lead to Black and Hispanic students being disciplined more often and receiving different discipline compared to White students. Specifically, Lewis and Diamond (2015) noted that in 2009, Black

high school students represented more than 70 percent of students assigned in-school suspension and more than 60 percent of all students assigned out-of-school suspension. The researchers noted that this was alarming given 35 percent of the high school student population identified as Black. Lewis and Diamond (2015) also found that these disproportionate disciplinary actions communicated messages to students about who was respected and trusted within the high school. This is not only crucial in relation to student sense of belonging and perceptions of being valued within the school context, but also intersects with student expectations and access to academic opportunities like dual enrollment.

In a quantitative study that included 98 pre-service teachers located in a small suburban Midwestern city near a large metropolitan area, Kunesh and Notemeyer (2019) explored teachers' interpretations of student's behavior in relation to race. Participants were instructed to read a randomly assigned vignette about a student with disciplinary issues and respond to a series of questions. These vignettes were either assigned racially stereotyped names, or the vignettes explicitly identified race. Using nonparametric bootstrap methods and logistic regression analysis, Kunesh and Notemeyer (2019) found that teachers who read a vignette about a student assigned a Black stereotyped name believed that the student was more likely to misbehave in the future compared to teachers who read a vignette about a student assigned a White stereotyped name. Specifically, students with a Black stereotypical name had 6.187 times higher odds of reporting that a misbehavior would be likely to reoccur compared to White stereotypical names. Teachers provided with a student vignette with an explicitly stated race reported that Black students had 3.962 times higher odds of reoccurring misbehavior compared to White students. The researchers noted that these beliefs may alter the way teachers interact with students based on race.

Research suggesting racialized causes to student discipline is a direct barrier to dual enrollment access in programs that require good academic standing for participation. These discriminatory discipline practices are even more impactful within the nation's suburbs that are undergoing rapid racial diversification among Black or African American and Hispanic/Latinx populations. Through unconscious or implicit bias, education leaders may be reducing inclusivity and stifling racial diversity within dual enrollment.

Standardized Tests for Eligibility

Standardized tests may also be a driver to excluding racially minoritized populations from dual enrollment if standardized test score thresholds are required for participation. It is estimated that roughly five million students are inappropriately tested each year by standardized assessments due to varying cultural backgrounds (Padilla, 2001). As a result, variance in standardized test results between races in the U.S. are striking with significantly lower scores awarded to Black, Hispanic, and Native American populations compared to White populations (Arbuthnot, 2009; Forum for Education and Democracy, 2008; Salinas & Garr, 2009; U.S. Department of Education, 2005). The use of these instruments as a driver for dual enrollment placement may be creating a narrow and unjust focus on who belongs and does not belong in these courses potentially due to assessment biases.

Research has consistently suggested that standardized tests are race and class biased, and traditionally are normed from the majority White population. Kim & Zabelina (2015) suggested that it may be inappropriate to administer the same standardized test with students of varying races without norming the instruments to reflect student sub-populations. Padilla & Borsato (2008) posited that the validity and reliability of assessments are questionable if the cultural and linguistic backgrounds of the individuals being assessed are not represented in the norming

group. If not adequately represented, Kim & Zabelina (2015) speculated that populations of students may be denied access to educational opportunities that rely on potentially biased assessment results.

As educational leaders continue to recognize and voice concerns that standardized test scores intensify racial disparities in education access, more higher education institutions are lessening strict admissions criteria that consider examination results (FairTest, 2020). Over one half of the nation's 2,330 bachelor's degree awarding colleges and universities do not require students to submit ACT or SAT results for admission consideration (FairTest, 2020). The prevalence of test-optional two-year degree awarding colleges in the U.S. is even greater given their historical open-access missions. Some higher education institutions have been coined test-blind colleges and do not accept standardized test scores in the admissions process, even if prospective students submit them (Jaschik, 2020). Significantly more postsecondary institutions operationalize a test optional policy, which considers standardized test scores in admissions decisions if supplied (Jaschik, 2020). The 2020 COVID-19 pandemic has brought further attention to merit-based admissions practices, such as the use of standardized test scores, resulting in an increase of nearly 200 U.S. colleges and universities no longer requiring standardized test results for admissions consideration (Georgetown University, 2020). The wave of higher education admissions test optional or test-blind policy change does have the potential to trickle to high school dual enrollment eligibility; specifically, by relaxing or eliminating the use of standardized tests in dual enrollment policy.

Theoretical Frameworks for Dual Enrollment Research Literature

In a review of the existing dual enrollment literature, An and Taylor (2019) assessed a total of 783 documents to identify themes within the research findings, methodological

approaches used, theoretical approaches used, and recommendations for future research. An and Taylor (2019) summarize that the dual enrollment empirical research leverages a relatively diverse series of theoretical and conceptual approaches that include: Wang's academic momentum model, college readiness, motivation theory, Astin's Input-Environment-Output model, role and socialization theory, and engagement. An and Taylor (2019) suggested that future research should explore additional theoretical and conceptual frameworks to make sense of dual enrollment research findings. Specifically, An and Taylor (2019) suggested there is not only a need for future dual enrollment equity focused research, but also a need for the use of theory to assess if and how racial inequities are perpetuated through dual enrollment.

Methodological Approaches for Dual Enrollment Research Literature

The methodological approaches to investigating the relationship between dual enrollment participation and postsecondary outcomes for minoritized populations are solely quantitative in nature. Most of these equity focused studies have used regression statistical methods, and only two studies (Speroni, 2011; Taylor 2015) have used more rigorous quasi-experimental approaches such as difference-in-difference and propensity score matching. Through these varying approaches, researchers have focused on understanding if dual enrollment participation among minoritized populations (e.g., first-generation students, racially minoritized students, students with a disability, etc.) transmits benefits to postsecondary outcomes (e.g., postsecondary matriculation, first-year GPA, graduation). No studies have used causal experimental designs to assess the impact of dual enrollment on postsecondary success among minoritized populations. Future quantitative based research should aim to draw more causal inferences. Further, future equity focused dual enrollment and postsecondary outcome research should strive to identify specific activities within dual enrollment that propel students toward postsecondary success.

The existing research on dual enrollment participation has used comparatively simplistic statistical approaches including descriptive statistics to identify the differences in participation across student groups and high school location. This research has examined participation rates a variable at a time. This is valuable to understand unidimensional variance in participation but fails to explore the multidimensional nature of the high school populations participating in dual enrollment. Future research should explore the interactions between variables and dual enrollment participation to better understand equity minded disproportionality in participation. This is especially important when assessing racial inequities in dual enrollment participation given the cited inequities for Black or African American and Hispanic/Latinx students. Further, given the significant variance in dual enrollment participation between suburban and urban high schools, future research should investigate the prevalence of participation disproportionality by race in the suburban and urban high school contexts separately. By assessing racial disproportionality in the suburban and urban contexts via interactions, future researchers would be able to assess if racialized inequities in participation are prevalent across regions or more pronounced to a specific region type.

Dual enrollment research has yet to evaluate written dual enrollment policy in an effort to link causes or potential disruptions to racial disproportionality in dual enrollment participation. Future research should aim to critically examine written state-level or institution-level dual enrollment policy for factors that relate to student segregation and desegregation. This is especially important within the suburban context that has undergone drastic racial diversification in recent years. Similarly, future research should investigate education administrator perceptions of how dual enrollment generates capital that is valuable to navigating educational and career pathways. This is important given the existing research literature suggests

dual enrollment as a lever to postsecondary transitions and success (e.g., An, 2013a; An, 2013b; Karp et al., 2008; Plasman & Gottfried, 2018; Speroni, 2011; Taylor, 2015; Wang et al., 2015) and that there are racial disparities in dual enrollment participation across student groups within the nation's suburbs (e.g., Miller, et al., 2017; National Center of Education Statistics, 2019a; Pierson, et al., 2017; Pretlow & Washington, 2013; Pretlow & Washington, 2014). An assessment within the suburbs would allow for an understanding of how institutions have responded to racial diversification by creating policy and practice that supports racial desegregation in dual enrollment.

Summary

High school dual enrollment is an encouraging line of research that illuminates equitable two-year college student success (e.g., An, 2013a; An, 2013b; Karp et al., 2008; Plasman & Gottfried, 2018; Speroni, 2011; Taylor, 2015). This is important given the existence of racial differences in postsecondary outcomes across the nation crafted by historical systemic racial inequities (National Center of Education Statistics, 2018), and the recent ranking of the state this study was situated in as 49th across the nation for educational equity due to racial disparities in educational outcomes (Institute for Research on Higher Education, 2018). Empirical evidence, while limited in total, has suggested significant disproportionality in dual enrollment participation rates, notably for Hispanic/Latinx and Black or African American high school students and high schools located in suburban regions (e.g., Miller, et al., 2017; National Center of Education Statistics, 2019a; Pierson, et al., 2017; Pretlow & Washington, 2013; Pretlow & Washington, 2014). This finding is noteworthy for suburban regions undergoing substantial demographic changes which have the potential for greater student integration (e.g., Frey, 2011; Lacy, 2016). Nonetheless, research has not explored the intersection between these areas;

specifically, how high school location might moderate the relationship between student race and dual enrollment participation. Instead, the studies on dual enrollment participation have examined participation across race and high school location separately and have not examined high school location as a potential moderator that forms the relationship between student race and dual enrollment participation in potentially opposing ways.

Research investigating the causes of racial (dis)parity in dual enrollment participation are non-existent. There is, however, a small body of research exploring tracking systems in high school AP courses within the suburban context. This body of research has generally suggested that teacher unconscious bias (e.g., Frankenberg, et al., 2016; Garcia & Guerra, 2004; Hollins & Guzman, 2009; Lewis & Diamond, 2015; Nelson & Guerra, 2013; Tyler, 2016; Weisman & Garza, 2002), racialized student discipline (e.g., Bradshaw, et al., 2010; Kunesh & Notemeyer, 2019; Lewis & Diamond, 2015; Losen, 2011; Losen, et al., 2015; Skiba, et al., 2014), and the use of standardized tests (e.g., Arbuthnot, 2009; Forum for Education and Democracy, 2008; Kim & Zabelina, 2015; Padilla & Borsato, 2008; Salinas & Garr, 2009; U.S. Department of Education, 2005) for course eligibility may be leading to disparate course placement among Black or African American and Hispanic/Latinx high school students.

Research has yet to critically examine dual enrollment policy and practice to better understand racial (dis)parity in dual enrollment participation within the two-year college sector. Further, the existing dual enrollment research has yet to engage theory to understand if and how racial (in)equity is perpetuated through dual enrollment policy and practice (An & Taylor, 2019). As such, future dual enrollment research should engage theory to: critique existing dual enrollment policy and practice in an effort to make sense of racial (dis)parity in dual enrollment participation; bring urgency to why racial equity in dual enrollment is important; understand the

perceptions of education administrators able to influence racial desegregation in dual enrollment access; and strive to provide findings that are actionable.

Chapter III: Theoretical Framework

Within this chapter I present the theoretical framework I engaged. First, I discuss the rationale for selecting an appropriate theoretical framework. Next, I describe the history of the selected theoretical framework and why it is appropriate. I also describe how the selected theoretical framework will be applied.

Theoretical Framework Rationale

I considered three factors when selecting an appropriate theoretical framework. First, the selected framework had to create a sense of urgency for why racial equity in dual enrollment matters. This sense of urgency added deeper meaning to the results of my study and aligned with my study's action-oriented approach, which seeks to rectify historical racial oppression within the US education system. In addition, selecting a theoretical framework that elevates the "so what" of my study's findings was well suited for my own pragmatic paradigm which aims to produce knowledge for the use of others and betterment of society (Kaushik et al., 2019; Plano Clark & Ivankova, 2016) Second, the theoretical framework needed to consider how societal forces and structures, like access to high school dual enrollment, relate to racial oppression. Finally, the framework had to also support the interrogation of institutional policy and practice to understand how institutions perpetuate or diminish historical racial oppression. It is important to note that student voices were not centered in my research. Instead, institutional policy and practice were examined to understand how they shape the dual enrollment landscape that high school students navigate.

Engaging Social Reproduction Theory

In light of the above considerations, I engaged Social Reproduction Theory (SRT) within my research. The concept of social reproduction originated from Karl Marx in his 1867

publication *Das Kapital* (Doob, 2013). Generally stated, social reproduction suggests that societal structures and forces propel social inequality from one generation to the next (Doob, 2013). Pierre Bourdieu (1986) extended the concept of social reproduction to illustrate why and how a group of people have advantages within a given social setting based on their acquired or inherited social and cultural capital (Winkle-Wagner, 2010). Bourdieu suggests that the more capital one has that is valued within a social setting, the more powerful a position one occupies in that social setting (Winkle-Wagner, 2010).

Engaging Bourdieu's theory was invaluable to demonstrate urgency for why equity in high school dual enrollment policy and practice matter. The use of SRT allowed me to make sense of how dual enrollment students acquire different types of capital, and how these capital are valuable in navigating the field of educational and career pathways. Further, the use of SRT allowed me to make sense of how acquired capital in dual enrollment spaces can shape student habitus towards college and careers. The notion that dual enrollment provides an opportunity to acquire capital and shape student habitus about navigating the field of educational and career pathways is plausible given the dual enrollment research literature suggests participation is positively related to postsecondary transitions and success (e.g., An, 2013a; An, 2013b; Karp et al., 2008; Plasman & Gottfried, 2018; Speroni, 2011; Taylor, 2015; Wang et al., 2015). In addition, the application of SRT provided theoretical backing for how dual enrollment participation relates to upward social mobility; that is, the capital students acquire through dual enrollment are valuable to navigating educational and career pathways, shape student habitus towards college and careers being a viable option, and subsequently propel students towards upward social mobility.

Bourdieu identifies the “social settings” where capital is assigned value as “field.” Each field has its own unique set of rules, knowledge, and forms of capital. Bourdieu notes that in each field, individuals influence and struggle with what capital is valued. In addition, Bourdieu states that valued capital is unequally distributed within each field. In this research study, field related to the “space” of navigating career and educational pathways while enrolled in high school and beyond.

One form of capital identified in Bourdieu’s social reproduction is cultural capital, which refers to the collection of social assets one has which promote social mobility in a society that is stratified (Bourdieu, 1986). Bourdieu notes that cultural capital can be acquired through education and social origin or one’s background. Some examples of cultural capital include one’s skills, knowledge, competencies, personal tastes, mannerisms, material belongings, and credentials. Bourdieu goes on to state that cultural capital can exist in three forms: in the embodied state, in the objectified state, and in the institutionalized state. Embodied cultural capital is the knowledge that is acquired and passively inherited such as dialect. Objectified cultural capital relates to one’s property, such as work tools or home, which can be turned for economic profit through buying and selling. Institutionalized cultural capital includes one’s academic credentials or professional qualifications that give authority or promote one’s labor market value.

Cultural capital can be viewed as a form of advantage within educational settings, and within my study, related to the skills, knowledge, abilities, competencies or credentials acquired through dual enrollment participation that may be occupationally or life-skill focused. My study identified the various types of cultural capital acquired through dual enrollment participation,

and how dual enrollment partners assigned value to the capital in relation to navigating the field of educational and career pathways.

Bourdieu (1986) also identifies a second category of capital, social capital, that relates to formed relationships with others. Social capital is the collection of assets and/or resources one has from belonging to or membership in a group or network (Bourdieu, 1986). More plainly stated, social capital refers to the advantages one receives based on who they know. Within my study, social capital referred to the social networks and/or relationships that students gain from participating in dual enrollment. These relationships included connections with peers who are interested in a similar career pathway, instructors who have experience in a given occupation, or individuals who have knowledge about higher education opportunities that support a student's career pathway. My research identified the types of social capital students acquire through dual enrollment participation, and how high school administrators assign value to social capital gained through dual enrollment participation.

Bourdieu (1986) also identifies the concept of habitus in social reproduction. Habitus relates to one's state of being and how one evaluates themselves in a particular social setting. This self-evaluation dictates the behaviors and/or actions one believes they can take in a given social setting. Within the context of this study, habitus related to how students evaluate themselves in successfully navigating educational and career pathways from high school and if pursuing college and careers is a viable option. My study identified how dual enrollment partners view dual enrollment as a mechanism that shapes student habitus towards pursuing college and careers.

Collectively, Bourdieu (1986) suggests that the forms of capital, habitus, and field are interrelated and influence social reproduction through the passing of capital from one generation

to the next. This generational passing ultimately reproduces inequities through systems of social class stratification. My study uncovered how dual enrollment participation acts as a force to advancing upward social mobility. Further, my study casts light on how dual enrollment might be a mechanism to breaking a cycle of social reproduction which perpetuates an unequal footing by race forged from historical systemic inequities.

Bourdieu's SRT also theorizes that schools are not institutions of equal opportunity, but mechanisms for perpetuating social inequalities (Jenks, 2003). This idea is related to high school dual enrollment participation not only because of the suggested racial disproportionality in dual enrollment participation (e.g., Miller, et al., 2017; National Center of Education Statistics, 2019a; Pierson, et al., 2017; Pretlow & Wathington, 2013; Pretlow & Wathington, 2014), but also because it is plausible that participation in dual enrollment builds capital that is valuable to navigating educational and career pathways and shapes habitus towards engaging in college and careers (e.g., An, 2013a; An, 2013b; Karp et al., 2008; Plasman & Gottfried, 2018; Speroni, 2011; Taylor, 2015; Wang et al., 2015). High school dual enrollment provides students an opportunity to acquire cultural capital by building skills, knowledge, and competencies through occupational training while also obtaining credit for secondary and postsecondary coursework through the completion of a single course (Cohen et al., 2014). Further, students participating in dual enrollment courses can advance their social capital through engagement with isolated social networks of course peers and instructors and make connections with postsecondary institutions that offer career pathways to higher paying jobs and economic mobility (Cohen et al., 2014). Given the suggested disparities in dual enrollment participation (e.g., Miller, et al., 2017; National Center of Education Statistics, 2019a; Pierson, et al., 2017; Pretlow & Wathington, 2013; Pretlow & Wathington, 2014), SRT was used to make sense of how these inequities

perpetuate social stratification. While SRT had yet to be applied in the dual enrollment research literature, scholars have applied SRT to make sense of racial disparities in high school tracking (e.g., McCardle, 2020; Nelson, 2016; Oakes, 2005; Reichelt et al., 2019). By engaging SRT within my study, I was able to fully explore how dual enrollment participation advances upward social mobility by leveraging the concepts of capital, habitus, and field for theoretical backing.⁵

⁵ Critical Race Theory (CRT) is often used to make sense of and rectify racial inequities (DeCuir & Dixson, 2004; Ladson-Billings, 1998; Ladson-Billings & Tate, 1995; McCoy, 2006). A prominent tenet of CRT is counter-storytelling, which provides a direct voice to individuals who have been oppressed and seeks to understand their lived experiences as they navigate systemic racism (Ladson-Billings, 2005). Additionally, People of Color are central to the research design through their role in identifying racism and defining solutions to address racial inequities. While CRT centers the voices of People of Color at its core to understand systemic racism, my study centers the policy and practices that shape the environment high school Students of Color navigate. As such, SRT was selected as a more appropriate theoretical framework.

Chapter IV: Research Design

Within this chapter, I present the research design and methodological approaches I used. First, I discuss the methodological approach, mixed methods, used within my study and provide details related to the timing, integration, and priority of quantitative and qualitative methods. Next, I describe how each strand of my mixed methods approach was operationalized. Finally, I discuss ethical considerations, my own positionality, and the strategies I used to strengthen the quality of my study's findings.

Mixed Methods Methodological Approach

In alignment with my pragmatism paradigm as a researcher, I used a mixed methods methodological approach. Mixed methods have been conceptualized as a third methodological movement that complements its predecessors by integrating both quantitative and qualitative methods of data collection and analysis (Plano Clark & Ivankova, 2016). The mixed methods methodology supports a “what works” approach to addressing research questions by allowing for the integration and mixing of quantitative and qualitative methods such as statistical analysis, questionnaire, and written document analysis (Plano Clark & Ivankova, 2016). A series of mixed methods design logics, including concurrent and sequential, have been created to appropriately align the timing, integration, and priority of quantitative and qualitative methods to research needs (Plano Clark & Ivankova, 2016).

I used a sequential quan → Qual mixed methods design logic where quantitative administrative data was collected and analyzed first, followed by qualitative dual enrollment partner interviews and document analysis (Plano Clark & Ivankova, 2016). The quantitative strand included the analysis of dual enrollment participation rates by student race, high school location, and their intersection. I used the findings from the quantitative strand to guide how I

operationalized the qualitative strand. More specifically, the quantitative findings informed the selection of high schools that served as research sites within the qualitative strand. In addition, the quantitative findings helped me to identify which suburban high school each area technical colleges partnered with, and if their institution exhibited racial (dis)parity in participation. This information was valuable to my data analysis and interpretations by providing me with intentionality in centering technical college interview participant voices who partnered with suburban high schools. Further, the quantitative findings provided important macro level details about dual enrollment access across the state, within suburban and non-suburban regions, and across cadres of high schools that state technical colleges partner with to offer dual enrollment. A comprehensive assessment of dual enrollment participation rates across the state allowed me to extend the understanding of (in)equity in dual enrollment access beyond individual high schools, and towards a more global state-wide understanding. To illustrate dual enrollment access more deeply, the qualitative strand explored dual enrollment policy and practice across dual enrollment partners. By diving deeper into dual enrollment access through the qualitative strand, I was able to uncover rich findings that triangulated with and complemented the quantitative strand.

Integration of the quantitative and qualitative strands occurred in two places. First, findings from administrative data analysis were used to identify dual enrollment practitioners and entities to target for interviews and gathering dual enrollment documents. Integration across the two strands occurred when the quantitative strand was completed, and the qualitative strand commenced. In addition, integration occurred when the findings across both strands were interpreted together. The quantitative strand uncovered patterns in dual enrollment participation rates and the qualitative strand added context to what might be shaping the uncovered dual

enrollment participation rates. Together, the quantitative and qualitative strands merged to form integrated findings and meta-inferences that illuminate a comprehensive picture of racial (in)equity in dual enrollment access.

I situated qualitative methods with a higher priority compared to quantitative methods. While the quantitative methods were invaluable to explore dual enrollment participation rates by race across the state, it is the qualitative methods that are key to addressing this study's research question and connecting this research to SRT. Dual enrollment policy and practice were explored through qualitative methods to understand the landscape students must navigate to enroll in programming; both the institutional barriers and supports. To elevate why these institutional factors matter to student participation, SRT was used for theoretical backing to demonstrate how programming might shape student beliefs about future college and careers, and how programming provides students opportunities to acquire capital that is valuable to successfully navigating current and future college and career decisions. Within these instances, quantitative data were demoted with little or no consideration. Instead, they played more of a supporting role to demonstrate an outcome of who is and is not accessing dual enrollment and its copious benefits.

The mixed methods approach is “messy.” It is neither linear nor straightforward. Rather, it is iterative, interactive, and ongoing. As detailed later, multiple phases of data collection and analysis were practiced. Each of these phases used a mixed methods approach to illustrate a big picture view of the findings in its totality. Qualitative and quantitative methods complemented and triangulated to define this big picture while leveraging the strengths of each method and addressing each method’s weaknesses. The use of quantitative and qualitative data in the form of administrative student data, interviews, documents, and participant questionnaires, as well as

theory and various analytical approaches, allowed for a complex and holistic understanding of racial (in)equity in dual enrollment access.

Study Context

My study was situated within a midwestern state. The state has various public and private education partners across the K-12 system and beyond. The public technical college system is comprised of 16 community and technical colleges which collaborate with the state's 500+ high schools to deliver dual enrollment programming. Each college has district boundaries and a series of high schools within their district they can partner with to deliver dual enrollment to high school students.

The state technical college system maintains an education for employment philosophy that centers educational value through demonstrated employment outcomes. Each credential approved through the state technical college system must align with a job, and the curriculum design process must incorporate input from area employers. The state's dual enrollment curriculum is the same curriculum that comprises the technical college systems 500+ industry recognized credentials. Simply stated, dual enrollment courses are part of the two-year college's curriculum.

Dual enrollment is delivered to high school students in a variety of instructional methods including face-to-face and online. Face-to-face instruction can be delivered at a high school or on a technical college campus. Regardless of delivery method, students earn both high school credit and technical college credit simultaneously through dual enrollment (State Technical College System, 2019). Dual enrollment courses can be taught by a technical college system instructor or a high school instructor who meets technical college system requirements and qualifications,

which consider level of education and hours of occupational experience in the subject of instruction (State Technical College System, 2019).

Each of the 16 technical colleges coordinate dual enrollment with area high schools each year (State Technical College System, 2020). This collaboration resulted in 57,219 high school students earning dual enrollment credit in the 2022 academic year (State Technical College System, 2022). Dual enrollment offerings are cost neutral to students and accessible through open access eligibility requirements. The system estimates that a collective \$36.8 million in college credit savings was realized from the 256,985 technical college system credits awarded through dual enrollment during the 2022 academic year (State Technical College System, 2022).

Dual Enrollment Partner Research Sites

Data collection extended across three dual enrollment partners. These dual enrollment partners are categorized as the technical college System Office, the state technical colleges, and the state high schools whom technical colleges partner with to offer dual enrollment. The three dual enrollment partners directly and indirectly shape dual enrollment access through institutional, college district, and system-wide policy and practice.

The state technical college System Office is the administrative agency that helps to ensure quality, accountability, alignment, and efficiency across the technical college system. The System Office leads various efforts to support, guide, and advocate for the state's 16 technical colleges. Some of the System Office's primary responsibilities include implementing statewide educational policies and standards, managing state and federal grant funding, reviewing and approving college course and credential curriculum, approving college facilities projects, managing the System's data infrastructure and reporting framework, coordinating legislative affairs, and preparing the System's biennial budget. The System Office also serves as a

connector across the state technical colleges by bringing college staff together to share challenges and strategies in advancing technical college access and success.

The state technical colleges have existed for more than 100 years. These 16 institutions offer a variety of programming such as industry recognized credentials, GED and HSED programming, adult education (K-12) and English language learning courses, continuing education programming, contract training with business and industry, correctional education, and high school dual enrollment. The 16 technical colleges operate through a responsive framework that centers district employer and community needs, and the needs of their current and prospective students. Each of the state technical colleges are equipped with state-of-the-art technology, equipment, large physical spaces, and employ specialty trained faculty. This infrastructure, coupled with hundreds of technical college credentials and thousands of technical college courses offered across the state, provides a breadth and depth of programming for the 250,000+ people who enroll at a technical college each year, of which roughly 100,000 are credential-seeking students. The technical college student body seeking a credential has experienced an increase in racial diversity from 2011 to 2021 with growth in the proportion of students who identify as Asian, Black or African American, Hispanic or Latinx, or more than one race (Table 4). In addition, roughly four in ten credential-seeking students identified as economically disadvantaged and 57.8% identified as female during the 2021 academic year while 41.7% identified as male.

Table 4: Technical college credential-seeking student characteristic trends (2011 & 2021).

	2011		2021	
	Count	%	Count	%
American Indian/Alaskan Native	1,411	1.2%	950	1.0%
Asian	3,296	2.7%	3,824	3.9%
Black or African American	8,923	7.4%	8,995	9.1%
Hispanic or Latinx	5,645	4.7%	10,205	10.3%
More than one race	1,136	0.9%	2,963	3.0%
Native Hawaiian or Pacific Islander	117	0.1%	92	0.1%
Unknown	4,332	3.6%	3,786	3.8%
White	95,586	79.4%	68,293	68.9%
Economically Disadvantaged	55,469	46.1%	41,159	41.5%
Not Economically Disadvantaged	64,977	53.9%	57,949	58.5%
Female	66,865	55.5%	57,243	57.8%
Male	53,315	44.3%	41,319	41.7%
Unknown	266	0.2%	546	0.6%

The state has over 500 high schools that enrolled over 260,000 students during the 2022 school year. On average, each technical college has 27 high schools within their college district. The state's public high school system prioritizes college and career readiness as a key component of the K-12 system's vision for every student to graduate high school academically, socially, emotionally, and life ready. Beginning the 2018 school year, every state school board was required to ensure that academic and career planning services were provided to learners enrolled in grades 6 to 12 in the school district. These services are intended to equip students and their families with the tools necessary to make more informed choices about college and careers for life after high school. The state technical college system is a vital partner to academic and career planning by providing high school dual enrollment programming options that support high schools in adhering to school district board requirements while simultaneously providing students an opportunity to explore college and careers and receive college and high school credit.

Strand I (quan) Methods

I used quantitative methods in Strand I to identify the existence of racial (dis)parity in dual enrollment participation. Within this section, I detail my approach to classifying high schools as suburban. Next, I discuss the quantitative methods I used to determine dual enrollment participation by race. Finally, I present my approach to identifying two suburban high schools, one with and one without significant racial disproportionality in dual enrollment participation, to serve as the high school dual enrollment partners explored in Stand II (qual).

Classifying Public High Schools as Suburban

Some terms commonly associated with suburban living include low-density communities, maintained lawns, commutes to work, detached homes, and a monthly mortgage (Nicolaides & Wiese, 2016). Nicolaides and Wiese (2016) note that growth in these suburban regions has drastically changed in the US over the last century. The percentage of the US population living in suburban regions grew from 6.9% in 1910 to 51% in 2010 (Nicolaides & Wiese, 2016). While the term “suburban” has long been part of the nation’s geography, and increasingly prevalent today, there is no clear definition through the US government or within the research literature (Frankenberg & Orfield, 2012). Solidifying a definition of “suburban” was important because my research design requires the identification of racial (in)equity in dual enrollment participation within suburban high schools.

I explored three possible approaches to identifying suburban high schools. First, American Housing Survey data available through the US Census was analyzed. Within the survey, respondents are asked to classify the neighborhood they are living in as of urban, suburban, or rural (US Census, 2020). The collection of these data began during the survey’s 2017 administration. Many limitations were found in reviewing the data. First, it was not

possible to disaggregate the data by high school or even at the state or county level. In addition, the American Housing Survey does not provide a definition of the various neighborhood types, suburban for example, which may create response error among survey respondents. These reasons contributed to ruling out the use of American Housing Survey data to identify suburban high schools.

I explored two additional approaches. These approaches, (1) connecting with staff at the state K-12 system and (2) using the National Center of Education Statistics (NCES) Education Demographic and Geographic Estimates (EDGE⁶), proved to be interconnected. Before exploring the NCES EDGE data, I connected with staff at the state K-12 system to understand if they classify high schools as suburban. Discussions with state K-12 system staff revealed they provide the NCES a state high school file with geographic boundary coordinates which are then appended with a Locale Classification Code available through the EDGE data set. The locale code is derived from population attributes such as population density and high school geographic location. The state K-12 system makes a listing of the state's high schools with NCES assigned Locale Classification Codes available to the public through their outward facing website. Table 5 includes a description of each of the locale codes in the NCES EDGE data set.

Table 5: NCES EDGE locale coding system.

⁶ EDGE creates and assigns geocodes and other geographic indicators to public schools, private schools, and postsecondary institutions across the nation (National Center of Education Statistics, 2020).

Locale Code	Locale Code Description	Definition
11	City, Large	Territory inside an urbanized area and inside a principal city with population of 250,000 or more.
12	City, Midsize	Territory inside an urbanized area and inside a principal city with population less than 250,000 and greater than or equal to 100,000.
13	City, Small	Territory inside an urbanized area and inside a principal city with population less than 100,000.
21	Suburb, Large	Territory outside a principal city and inside an urbanized area with population of 250,000 or more.
22	Suburb, Midsize	Territory outside a principal city and inside an urbanized area with population less than 250,000 and greater than or equal to 100,000.
23	Suburb, Small	Territory outside a principal city and inside an urbanized area with population less than 100,000.
31	Town, Fringe	Territory inside an urban cluster that is less than or equal to 10 miles from an urbanized area.
32	Town, Distant	Territory inside an urban cluster that is more than 10 miles and less than or equal to 35 miles from an urbanized area.
33	Town, Remote	Territory inside an urban cluster that is more than 35 miles from an urbanized area.
41	Rural, Fringe	Census-defined rural territory that is less than or equal to 5 miles from an urbanized area, as well as rural territory that is less than or equal to 2.5 miles from an urban cluster.
42	Rural, Distant	Census-defined rural territory that is more than 5 miles but less than or equal to 25 miles from an urbanized area, as well as rural territory that is more than 2.5 miles but less than or equal to 10 miles from an urban cluster.
43	Rural, Remote	Census-defined rural territory that is more than 25 miles from an urbanized area and is also more than 10 miles from an urban cluster.

I used the files available through the state K-12 system to identify which of the state's high schools are located in a suburban region of the state. Reasoning for this decision included (1) data are available at the high school level and (2) high schools are classified as suburban based on a definition that considers population density and geographic location. To identify a list of suburban high schools across the state, I isolated the state high school listing to locale codes that included 21-Suburb Large, 22-Suburb Midsize, and 23-Suburb Small. In total, 70 high

schools across the state were classified as suburban high schools. The majority, 37, were classified as large (53 percent) while 20 (29 percent) and 13 (19 percent) were classified as midsize and small, respectively.

Administrative Data

Quantitative data collection included securing longitudinal administrative data available through state education agencies. Administrative data spanned the academic year 2016 through the academic year 2020. Secured data included high school enrollment student counts collected by the state K-12 system. These data were retrieved from the K-12 system's public website. Administrative data also included technical college system dual enrollment student counts. Dual enrollment student counts are collected by the technical college System Office on an annual basis. Technical college dual enrollment student counts were not publicly available. The ability to secure and use dual enrollment data in this study was approved by the technical college System Office. Administrative data retrieved from both educational entities were disaggregated by high school and intersected across race, gender, and socioeconomic status.

Data Limitations

Review of the secured administrative data revealed three important data limitations. First, the available data did not allow for calculating intersections between student characteristics by high school. The result is a data set that allows a unidimensional approach to calculating dual enrollment participation rates across each high school. This approach places a limit on understanding dual enrollment participation across important student intersections, such as gender and race, to illustrate a more detailed picture of (in)equity in participation. Second, the classification of race is confined to federal categorization. As such, nuance across race is nonexistent and does not acknowledge differences within races e.g., students who identify as

Asian include students who identify as Chinese, Japanese, or Hmong. Third, the secured administrative data is self-reported by students across each educational entity separately. Self-reported data acknowledges student self-identity but collecting the information two times may result in inconsistent reporting. Thus, data quality may be jeopardized and negatively impact the reliability of calculated dual enrollment participation rates.

Dual Enrollment Participation Rate Calculation Procedures

I secured administrative data from the K-12 system and the technical college system and matched the two data sets by high school and year. These data included student counts enrolled in high school and student counts enrolled in dual enrollment to generate a dual enrollment participation rate; i.e., dual enrollment participation rate = dual enrollment student count / high school student count.

I retrieved five academic years of high school enrollment data from the publicly facing state K-12 system website and appended the data to the suburban high school listing. The appended data included high school enrollment counts and student characteristic data for race, gender, and socioeconomic status. Then, I retrieved state technical college system administrative dual enrollment data across the 70 high schools included in the suburban high school listing. These data were appended to the data file and matched by high school across each of the five years. Dual enrollment included all types of dual enrollment recognized by the state technical college system, such as dual enrollment offered at the high school and dual enrollment offered at a local technical college.

A total of 60 high schools on the suburban high school listing (86 percent) offered dual enrollment during any of the five academic years between 2016 and 2020. The high schools

offering dual enrollment included 31 high schools in large suburbs (84 percent), 16 high schools in midsize suburbs (80 percent), and 13 high schools in small suburbs (100 percent).

Analytic Procedures for Estimating Racial Disproportionality in Dual Enrollment Participation

Quantitative methods included exploratory correlational analysis to understand the relationship between dual enrollment participation and race at suburban high schools. I used a series of chi-square tests to explore simple relationships between dual enrollment participation rates and student race. Chi-square⁷ tests were conducted because they are useful in identifying if the proportions of one variable are significantly different among values in another variable (Agresti, 2018). Applied to my research, chi-square tests were used to identify the existence of significant differences in the dual enrollment participation rate across race. Through chi-square testing, I was able to identify if associations exist between my two variables, dual enrollment participation rate and race, by comparing patterns in observed values to what would be expected if the variables were independent from each other (Agresti, 2018).

Because the quantitative methods in my study required multiple chi-square tests that evaluate each suburban high school separately, a more conservative critical value, Bonferroni, was used to assess if the observed values are significantly different from the expected values. The Bonferroni critical p-value is useful in instances of multiple testing and controlling for type I error in false positives (Agresti, 2018). To calculate the Bonferroni critical p-value, I divided an original critical p-value of .05 by the number of tests that were performed; a total of 60 per

⁷ Chi-square tests were conducted using 2019 academic year data to limit impacts from the COVID-19 pandemic, which were experienced in the spring of the 2020 academic year.

academic year. The quotient became the new critical p-value to assess significance of the chi-square results, i.e., a p-value < .00.

Forming Suburban High School Pairs to Serve as Research Sites

Suburban high schools with and without racial disproportionality in dual enrollment participation were grouped by suburb classification i.e., large, midsize, and small. Results demonstrated some variation by suburb classification. In total, 16 of the 60 suburban high schools (27 percent) offering dual enrollment exhibited significant racial disproportionality in dual enrollment participation. Of the 16 high schools with racial disproportionality, 7 were in large suburbs (44 percent), 6 were in midsize suburbs (37 percent), and 3 were in small suburbs (19 percent).

The high school listing was then limited to only include institutions that had an overall dual enrollment participation rate that was equal to or greater than the state rate within the suburban context during the 2019 academic year: 13 percent. This step was operationalized to support pairing similar high schools together by limiting the sample to institutions that had demonstrated sizable scaling of dual enrollment. Collectively, 36 suburban high schools exhibited a 13 percent or greater dual enrollment participation rate during the 2019 academic year. Of the 36 high schools, one-third demonstrated significant racial disproportionality in dual enrollment participation. As demonstrated in Table 6, the proportion of high schools experiencing racial disparities in participation increased across each of the suburb types as the sample was limited to those with greater rates of participation. This suggests that as dual enrollment participation grows across suburban high schools, so do disparities by race.

Table 6: Racial disproportionality by suburb classification (2019).

Suburb	High Schools Offering Dual Enrollment	% With Racial Disproportionality	% With Racial Disproportionality and >= 13% Participation
Large	31	23%	31%
Midsize	16	38%	42%
Small	13	23%	27%

Suburban high schools with significant racial disproportionality in participation were then isolated and compared to other suburban high schools to identify potential pairs for my qualitative strand. Variables considered in the pairing processes included the suburb locale code, the overall suburban high school dual enrollment participation rate (13 percent), the high school student headcount, the percent of high school students who identify as economically disadvantaged, the gender distribution of high school students, and the racial distribution of high school students. As a result, nine suburban high school pairings were identified that included four large suburb pairs, three midsize suburb pairs, and two small suburb pairs.

Across the nine high school pairs, the high school enrollment count for Black or African American and Hispanic/Latino students were identified. This step was completed to prioritize which of the 9 pairs would move to the next step in the selection process to determine one final pair. The top three pairs with the highest number of Black or African American and Hispanic/Latino high school students, whom the existing research literature suggests is underrepresented in dual enrollment and honors courses, advanced to the next step in the selection process. The final three pairs included high schools located in suburbs classified as large suburbs.

Across the remaining 3 high school pairs, 15 years of student characteristic high school enrollment data available through the state K-12 system were analyzed at five-year increments from the 2006 academic year to the 2021 academic year. This analysis was conducted to

determine the degree to which the high schools had experienced racial and socio-economic diversification; a finding suggested in the suburban demographic research (Frankenberg, et al., 2016; Frey, 2011; Lacy, 2016). In addition, the distance between the high school and local technical college was used in the decision-making process to account for potential travel to technical college dual enrollment courses, as was the percent of all dual enrollment participation taken at the high school. These additional considerations were used to account for potential barriers to access, such as transportation to the technical college, that may disproportionately impact students.

The two selected high schools are located in a suburb classified as large, have experienced racial and socio-economic diversification consistent with the suburban demographic research, maintain a dual enrollment participation rate higher than the state rate of 13%, are located in similar proximity to an area technical college, and nearly all dual enrollment participation occurs at the high school rather than at a technical college campus. Using pseudonyms, the two high schools are referred to as Anytown High School and Falls High School.

Strand II (qual) Methods

In Stand II (qual), I used semi-structured interviews and dual enrollment document analysis to discover how dual enrollment policy and practice might shape dual enrollment access. I collected qualitative data among dual enrollment partners across the state, including the System Office, all 16 technical colleges, and Anytown and Falls High Schools. The policies and practices among the dual enrollment partners converge and diverge to form a complex statewide perspective of racial (in)equity in dual enrollment as well as nuanced views amongst partners.

Assigning a methods label to Strand II was unnecessary and misaligned with my paradigm and methodological approach. My pragmatism paradigm drove my research. A deep understanding of dual enrollment policy and practice was necessary to generate action-oriented implications that advance racial equity in dual enrollment access, for which the labeled type of qualitative methods proved to be needless.

Semi-Structured Interview Recruitment and Participants

I used my social networks as someone with experience working in a two-year college system to recruit interview participants from the System Office, the 16 technical colleges, and Anytown and Falls High Schools. More specifically, I used a gatekeeper employed at the technical college System Office whose core work responsibilities include cultivating dual enrollment pathways between the state's technical colleges and area high schools. This individual also served as an interview participant. I requested the gatekeeper to introduce me to the staff at Anytown and Falls High Schools who partner with area technical colleges to coordinate dual enrollment. Similarly, I requested the gatekeeper to introduce me to the technical college staff at each of the 16 technical colleges who are responsible for coordinating dual enrollment with high school partners. It is important to note that I had existing relationships with the technical college staff who served as interview participants. These relationships were formed through professional engagements related to technical college dual enrollment. After an initial introductory email was delivered by the gatekeeper, I responded through email to the prospective interviewees with the recruitment message in Appendix F. These gatekeeper introductions were a success. Each staff member I contacted agreed to engage in at least one semi-structured interview.

Semi-structured interviews were conducted with at least one participant from each dual enrollment partner. In total, 22 interviews were conducted across 20 interview participants. Table

7 presents a summary of the study participants. Technical college staff responsible for coordinating dual enrollment programming across area high schools participated in one interview each. The System Office staff member supporting dual enrollment also engaged in one interview. A staff member at Anytown High School and Falls High School participated in two interviews each.

Nineteen of the participants (95 percent) in this study identified their race as White, and one identified as Hispanic (five percent). In total, over 215 years of dual enrollment work experience is represented among the study participants, and the average age of participants is 44 years. Seventeen of the participants (85 percent) identified as women and three identified as men (15 percent). Six of the interviewees (30 percent) participated in a dual enrollment course while in high school and 12 participants (60 percent) have a family member who participated in a dual enrollment course. The composition of participants in this study demonstrates some homogeneity. Generally speaking, the majority of dual enrollment partners who engaged in interviews are middle-aged, White women who have either participated in dual enrollment or have a family member who participated in dual enrollment.

Table 7: Descriptive summary of study participants.

Phase I						
Name	Institution	Gender	Race and Ethnicity	Age	Dual Enrollment Work Experience	Participation in Dual Enrollment
Marie	Technical College System Office	Woman	White	54	31 years	Self & Family
Larry	Anytown High School	Man	White	33	8 years	Self
Lynn	Fenwood College	Woman	White	44	7 years	Family
Renee	Falls High School	Woman	White	55	10 years	Neither
May	Sandy College	Woman	White	57	17.5 years	Family
Phase II						
Name	Institution	Gender	Race and Ethnicity	Age	Dual Enrollment Work Experience	Participation in Dual Enrollment
Sophie	Hometown College	Woman	White	34	6 years	Neither
Marcel	Plains Technical College	Woman	White	43	8 years	Self & Family
Molly	Valley Technical College	Woman	White	55	10 years	Family
Felicity	Shouse Community College	Woman	White	35	8 years	Self & Family
Midge	Springfield College	Woman	White	41	5 years	Self
Monroe	Pond Technical College	Man	White	42	11 years	Family
Curly	Gilead College	Woman	Hispanic	40	12 years	Neither
Mary	Bright Community College	Woman	White	34	7 years	Family
Jean	Midwest College	Woman	White	35	6 years	Neither
Ann	Lakeview Technical College	Woman	White	34	8 years	Family
Chloe	Evergreen Technical College	Woman	White	55	9 years	Neither
Sabrina	TCN College	Woman	White	47	14 years	Neither
Maureen	East Technical College	Woman	White	56	8 years	Family
Nancy	ABC Technical College	Female	White	56	25 years	Self & Family
Art	Vandelay College	Male	White	35	5 years	Family

Semi-Structured Interview Procedures

I coordinated virtual, semi-structured interviews in two phases. Phase one was bounded to the high school dual enrollment practitioners and their technical college dual enrollment partners. Phase two expanded the participant pool to include staff from the remaining technical colleges, with a focus on deepening and assessing the trustworthiness of themes uncovered from phase one. High school participants from phase one engaged in two separate interviews that averaged 90 minutes each. The first interview focused on understanding the purpose, goals, and perceived value of high school dual enrollment. The second interview focused on understanding the institutional policy and practices that shape dual enrollment participation. High school interviews followed a semi-structured protocol comprised of open-ended questions found in Appendix A. In addition, each high school participant was asked to complete a short questionnaire. The questionnaire can be found in Appendix B.

I requested high school participants to engage in two interviews for a series of reasons. First, a two-interview structure was valuable in establishing a sense of familiarity between myself and the participant and supported comfortability in discussion. While I had existing relationships with the technical college partners in this study, I had never met the high school participants prior to the interviews. Also, the topics of discussion naturally fell into two separate categories that could be situated into two interviews. At the conclusion of the first interview, high school participants were asked to share any written dual enrollment documents related to dual enrollment access. I analyzed the written documents between the first and second interview to establish a foundational understanding of the high school's dual enrollment practices and policies prior to engaging in the second interview. This allowed me to facilitate in the second interview more tactfully. For example, discussions from the first interview, coupled with a

review of the provided dual enrollment documents revealed that both high schools do not use eligibility requirements to determine student participation. Both high schools maintain an open access approach to their dual enrollment offerings. As such, the themes uncovered from the high school tracking literature suggesting that eligibility requirements foster racial disparities in AP and honors courses did not apply. This insight allowed me to pivot and engage participants more fully in understanding the policy and practice that influence participation in dual enrollment programming.

During phase one, I also conducted interviews with the technical college dual enrollment partners that each high school practitioner collaborates with. Technical college participants included each technical college's Career Preparation Coordinators who establish dual enrollment opportunities across area high schools and an Education Director supporting statewide dual enrollment efforts at the technical college System Office. Each participant was invited to engage in one interview which lasted roughly 90 minutes. These interviews followed a semi-structured protocol with open-ended questions which can be found in Appendix C. In addition, each participant was asked to complete a short questionnaire, which can be found in Appendix B.

Phase two of semi-structured interviews had two goals: (1) to build a greater understanding of qualitative concepts and themes uncovered from phase one and (2) to assess the trustworthiness of phase one findings across technical college partners. Thus, phase two encompassed more contextualized, specific, non-leading, open-ended questions reflective of policy or practice uncovered from phase one, which might shape racial (in)equity in dual enrollment participation. The remaining technical colleges not represented in phase one were interviewed in phase two. Each technical college Career Preparation Coordinator engaged in one interview that lasted 60 minutes. One technical college had two Career Preparation Coordinators

participate in separate interviews. Phase two interviews followed a semi-structured protocol which can be found in Appendix D. In addition, each participant was asked to complete a short questionnaire, which can be found in Appendix B.

Dual Enrollment Materials

To strengthen my study's qualitative strand, I collected and analyzed various dual enrollment materials from Anytown and Falls High Schools and various technical college dual enrollment partners. Collecting additional data sources supported trustworthiness of my qualitative findings through triangulation to identify points of congruence. Acquiring dual enrollment materials occurred in two ways. First, I requested access to materials referenced during participant interviews. In addition, at the end of each interview, I asked participants to email any relevant dual enrollment materials that were not discussed. I also explored each dual enrollment partner's public website for information related to dual enrollment access. Discovered dual enrollment materials were communicated to interviewees to verify relevancy.

The collection process yielded a total of 23 dual enrollment materials, which are presented in Table 8. Dual enrollment materials included policy documents like applications or course enrollment forms and dual enrollment informational materials intended for consumption among students and their families. The modes of dual enrollment materials were in many forms that included written documents, PowerPoints, websites, and videos.

Table 8: Dual enrollment materials list and description.

Institution	Document Name	Document Description
State Legislature	38.001 Mission and Purpose	State legislature defining the mission and purpose of the state technical college system.
State Legislature	TCS 3.04 Instructor Requirements	State legislature defining the requirements and qualifications of technical college system instructors.
State Legislature	TCS 3.05 Faculty Quality Assurance System	State legislature defining the System Office requirements to maintain a Faculty Quality Assurance System and to monitor qualifications among faculty.
System Office	Dual Credit and K-12 Partnerships Report	An annual report that provides state-wide statistics on dual enrollment prevalence and participation.
System Office	Grant Guidelines	An operational guide for prospective grant applicants detailing grant names, purposes, measurable objectives, funds, and allowable activities.
System Office	System Dual Enrollment Webpage	The technical college System's website that hosts dual enrollment informational materials for technical colleges.
System Office	Commitment to Progress Webpage	The technical college System's website that details a System priority to addressing systemic racism.
System Office	Educational Services Manual, Concept Approval Criteria, Program Approval Criteria	The technical college System's documented practices for investigating and approving technical college credentials and curriculum.
System Office	Annual Graduate Outcomes Report	An annual report detailing the employment outcomes of graduates surveyed within 6 months of graduation.
Fenwood College	College Dual Enrollment Website	The college's website that hosts dual enrollment informational materials for students.
Fenwood College	Early College Academies Flyer	An informational flyer detailing a series Early College Academies that high school students can take at the college.
Sandy College	College Dual Enrollment Website	The college's website that hosts dual enrollment informational materials for students.
Sandy College	Dual Enrollment Academy Website	The college's website that hosts information about the varies Dual Enrollment Academies that high school students can take at the college.
Sandy College	Dual Enrollment Academy Flyer	Individual flyers for each of Sandy College's Dual Enrollment Academies that detail course requirements and Academy connections to college credentials and jobs.
Anytown HS	Course Handbook	An annual informational handbook for students and their families that provides descriptions of all courses, including dual enrollment, offered at the high school.
Anytown HS	High School Website	The high school's informational website.
Anytown HS	Advisory Period PowerPoint	A PowerPoint delivered by instructors once per year to high school students that includes information about the high school's dual enrollment programming.

Table 8: Dual enrollment materials list and description continued.

Institution	Document Name	Document Description
Anytown HS	Course Enrollment Form	A form required to enroll in dual enrollment.
Falls HS	Career Planning and Course Guide	An annual informational handbook for students and their families that provides descriptions of all courses, including dual enrollment, offered at the high school. The handbook also includes four-year, Career Academy academic plans.
Falls HS	Career Academy Website	An informational website for students and their families that summarizes each of the five high school Career Academies.
Falls HS	Career Academy PowerPoint	An informational PowerPoint delivered by staff and high school Academy seniors to high school freshman that includes the benefits of Academy participation, Academy activities, data on Academy student participation and outcomes, Academy student photos, and Academy student testimonials.
Falls HS	Career Academy Video	An informational video for students and their families hosted on the high school website that provides details about each of the five Career Academies including benefits to participation, activities, and student written testimonials.
Falls SH	Career Academy Application	A web-based application that students must complete to enroll in one of the high school's Career Academies.

Ethical Considerations

Prior to each interview, I requested that each participant sign a consent form informing them of the purpose of the study. The consent form also includes my contact information, any risks associated with participation, and strategies used to ensure the protection of their identity and information. A sample interview consent form can be found in Appendix E. I began each interview by reviewing the signed consent form, with a focus on the purpose of the interviews and how participant information would remain anonymous.

Given my own pragmatism paradigm, the results of this study are intended to be disseminated widely. Knowing this, the names of participants and places of employment were assigned a pseudonym that the participants provided. This measure supports anonymity and

ensures that the collected data can be organized accurately. Further, if participants identified names or places during semi-structured interviews, they were masked within the data. All data were stored on a secure server that is password protected using storage guidelines implemented by the IRB.

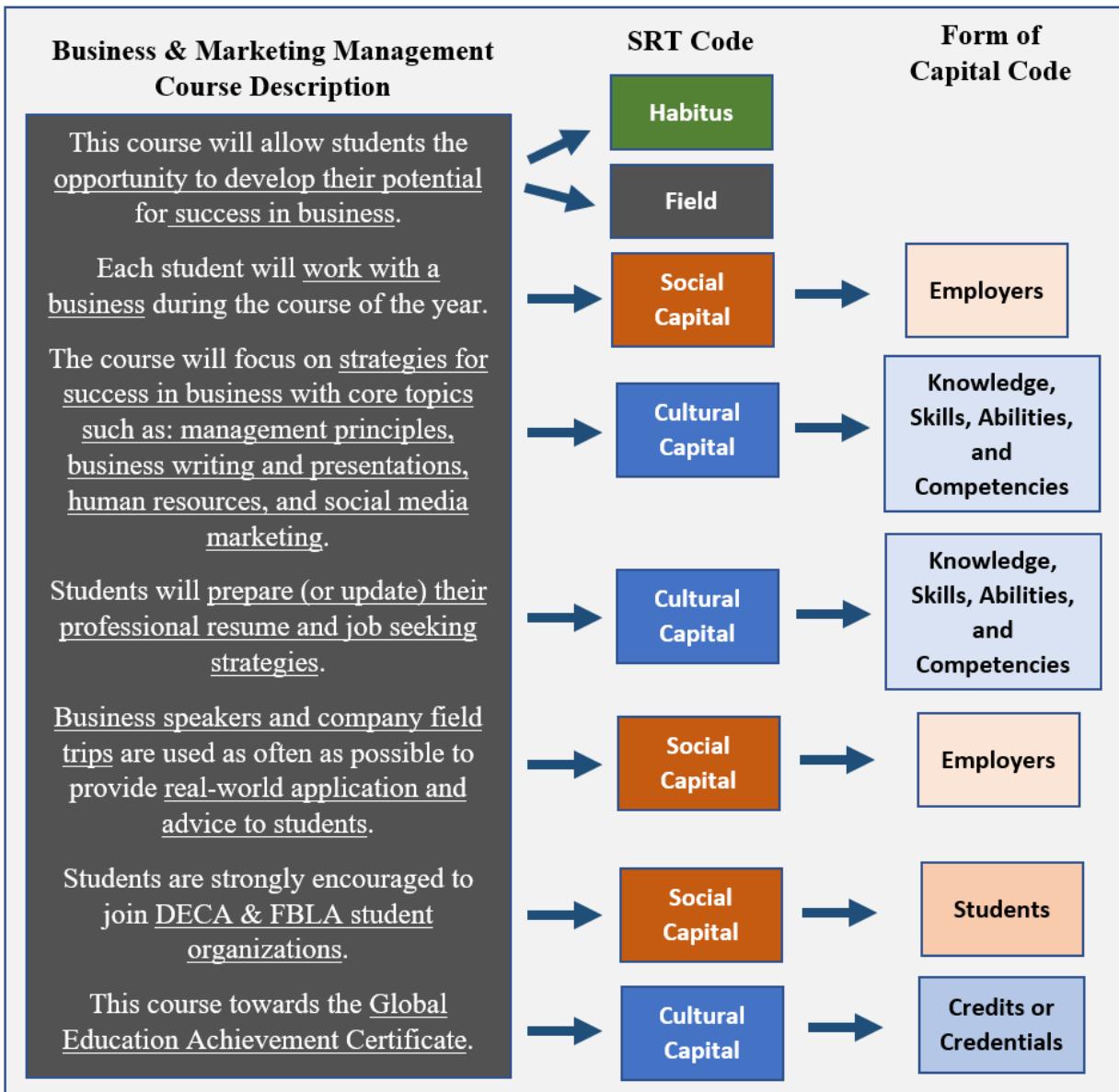
I entered each interview knowing practitioners have varied comfortability in discussing the topic of race in education. I also entered each discussion knowing that practitioners have varied journeys in self-reflection and building connections between dual enrollment policy and practice and race. I strove to approach each interview with thoughtfulness, care, and openness, while reassuring my participants that discussion would remain anonymous. I used terms like, “this is a safe place to share your perspectives” and “what you share will not be identifiable to you.” Throughout the process, I did not lose sight of race as a central construct in my research. I was intentional in probing for intersections with race when this topic did not naturally enter the conversation and took each participants lead when it was clear that discussions of race were creating significant discomfort. Uncomfortable conversations about race in education are vital to meaningful change, but individual self-reflection is necessary before these conversations can truly be fruitful. I did not approach participant interviews with an intent to change attitudes or beliefs. Rather, I approached participant interviews with the intent to engage my research question based on where each participant is within their own personal and reflective journey related to race in education.

Qualitative Analysis

I engaged the high school tracking literature and my guiding theory, SRT, to analyze interview transcripts and dual enrollment materials. First, I deductively coded the data by applying the three emergent themes in the tracking literature that are suggested to foster racial

disparities in AP and honors course participation. These themes relate to the use of eligibility requirements in AP and honors courses, and include educator beliefs of student belonging, student discipline, and standardized test scores. I then deductively coded the four aspects of SRT, including cultural capital, social capital, habitus, and field. During this process, tenets and components of SRT emerged to be most appropriate in lending theoretical support, while prior literature related to high school tracking did not. An example of the SRT deductive coding process is demonstrated in Figure 1. The underlined portions of the text represent where the SRT codes emerged. The subsequent codes group the deductive code into finer grain categories to encompass various forms of social and cultural capital.

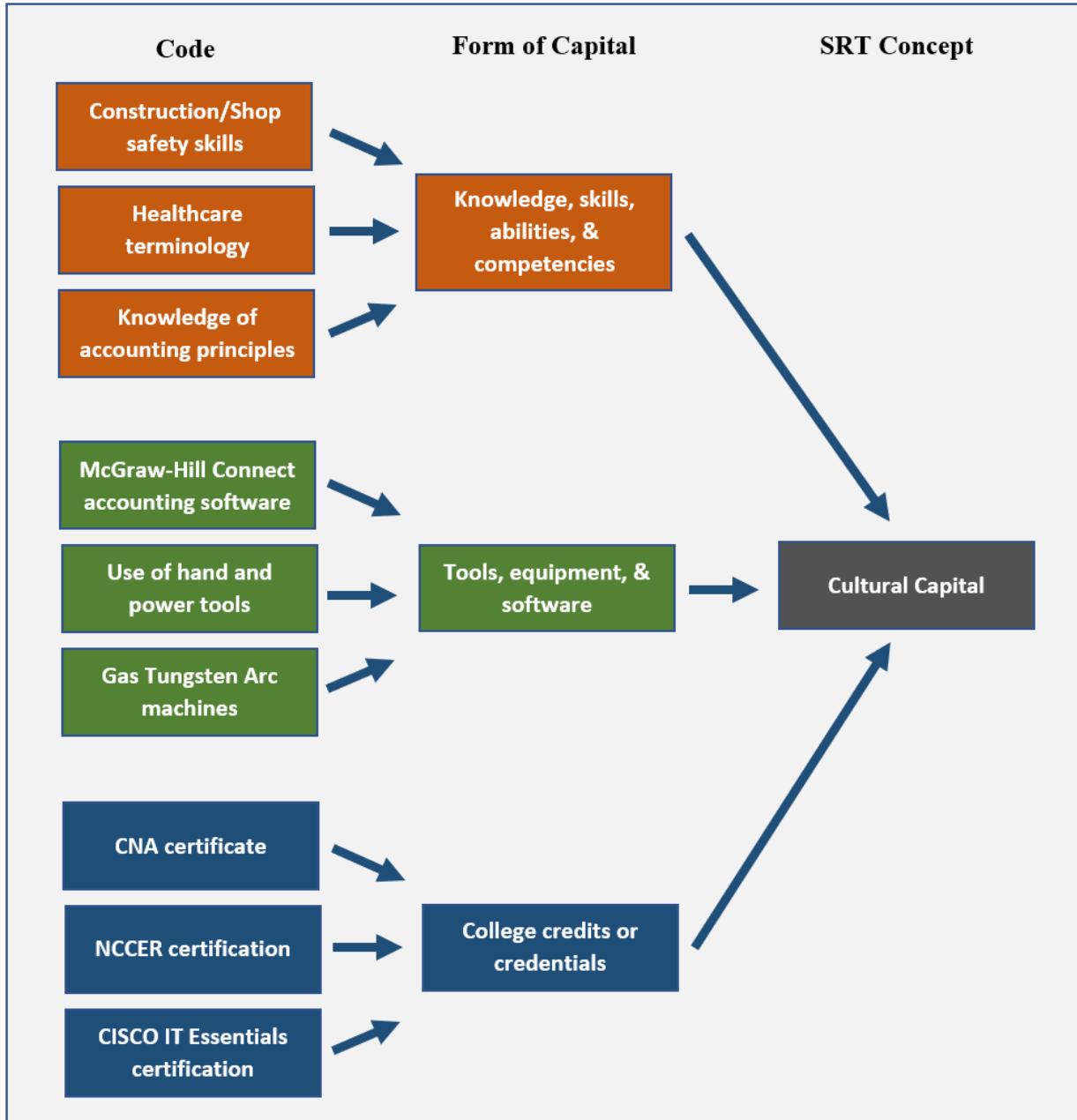
Figure 1: Example of Social Reproduction Theory coding process.



Throughout the coding process, I also captured the various forms of cultural and social capital that emerged in interview transcripts and dual enrollment materials, and how they related to SRT. An example of this process is demonstrated in Figure 2. This process allowed me to fully realize the complexity of cultural and social capital, and better understand the various forms of capital that contribute to each SRT concept. Further, this process brought deeper meaning to

how dual enrollment participation provides advantages in navigating educational and career pathways, and what is missed out on when students do not participate.

Figure 2: Example of SRT capital coding process from qualitative data analysis.



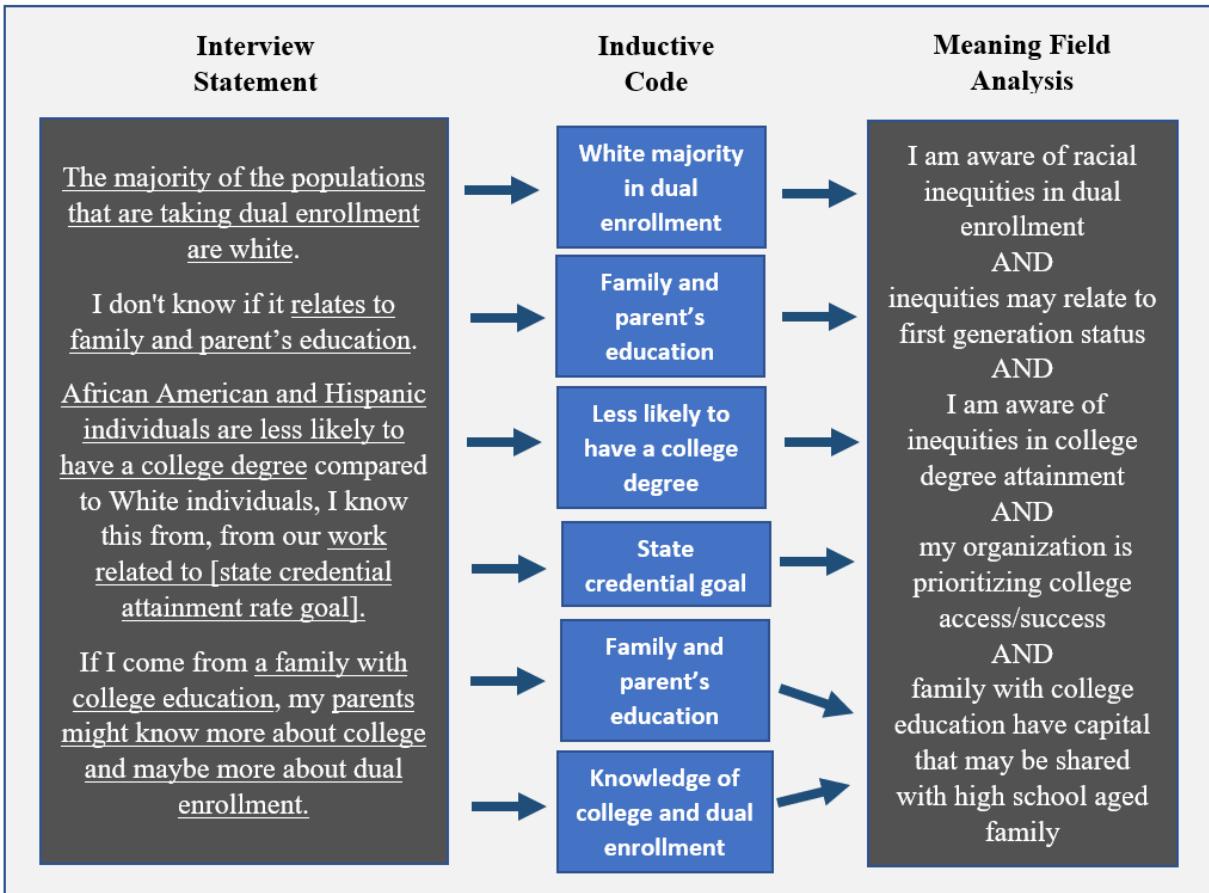
I also engaged inductive coding as a way to systematically document emerging findings that may not immediately fit within prior literature and theory. This process involved dissecting lines of text or sentences and coding or restating discourse. The use of inductive coding allowed

for an open approach to identifying possible emergent concepts or themes. Inductive coding was thorough to ensure potential concepts or themes were not overlooked in the data that may be of significance to this study's research question.

Interview transcripts and dual enrollment materials were also reviewed for instances when there appeared to be a deeper meaning within statements beyond what was explicitly captured through inductive coding. The use of Carspecken's (1996) meaning field analysis was valuable in this effort because it helped to form relationships within discourse that may not have been as easily identifiable through inductive coding methods. Further, the use of meaning field analysis helped to develop more illustrative narratives of education administrator disposition, knowledge, and beliefs, which were useful to building connections between themes.

An example of the application of meaning field analysis is presented in Figure 3. The underlined portion of the participant quote represents where the inductive code emerged. The meaning field analysis then connects to the participant quote and the inductive codes to provide deeper meaning to the participate statement that did not naturally arise through inductive coding procedures.

Figure 3: Example of meaning field analysis process.



After the interview transcripts and dual enrollment materials were coded, I transcribed the codes and grouped them. I used additional analytical techniques to interrogate each grouping to better understand its relationship with racial (in)equity in dual enrollment participation and its relationship with navigating educational and career pathways towards upward social mobility.

Questions that were asked of the data include:

- How might this relate to or provide advantages in navigating educational and career pathways towards upward social mobility?
- How might this relate to racial (dis)parities in dual enrollment participation?
- What differences exist and how do they emerge between the two high schools or across the technical college System?

This interrogation assisted in finding connections between themes and towards meta-inferences in which the relationships between themes and Strand I (quan) are accounted. Further, this process helped me to identify areas of integration and explanation between this study's quantitative and qualitative findings.

Integration of Strand I (quan) and Strand II (qual) to form Meta-Inferences

Integration of data across Strand I (quan) and Strand II (qual) was reflective of the data and additional analytic procedures. I constructed my meta-inferences based on the grouping of themes that emerged from qualitative analysis while assessing points of integration with the quantitative findings. As themes emerged from Stand II (qual), they were compared with Strand I (quan) findings across high school and technical college partners to identify explicit and subtle connections. For example, Anytown and Falls High Schools take varied approaches in structuring their dual enrollment offerings. One high school creates articulated dual enrollment pathways that have a clear beginning, middle, and end, and explicitly connect to credentials and jobs; the other high school does not. The notion of articulated dual enrollment pathways as a structural concept supportive of racial equity emerged when comparing the concept to dual enrollment participation rates by race and engaging additional analytic methods.

I also analyzed findings from both strands to identify points of congruence and divergence of Strand II (qual) findings across dual enrollment partners. This process helped me to explore how qualitative themes, built from dual enrollment policies and practices, might relate to racial (dis)parity in dual enrollment participation uncovered in Strand I (quan). For example, dual enrollment partners across the state had varied levels of institutional commitment towards racial equity in dual enrollment access. Shouse Community College demonstrated a clear institutional commitment to racial equity in dual enrollment access, and this commitment shaped

the way the college does business. The institution also serves the highest number of Hispanic and Latino, Black or African American, and students who identify as more than one race in dual enrollment across all dual enrollment partners and has experienced a narrowing of racial disparities in dual enrollment participation overtime. This same investigative process between strands was used across other dual enrollment partners to reveal that a clear institutional commitment to racial equity isn't necessary to implement discreet, equity-minded policies and practices, but it may be necessary to generate true institutional transformation where equity guides all decisions.

To ensure consistency and accuracy of my meta-inferences, I revisited participant interviews, dual enrollment materials, and quantitative findings to see how the inferences played out in the data across dual enrollment partners. This careful review, including my own self-reflection, was taken to ensure the data truly supported the meta-inferences rather than my own biases or beliefs forcing their creation.

Positionality

I identify as a White man. In researching the topic of race, I centered thoughtfulness and care as a guiding principle to my work. I strived to mitigate a series of historical inequitable practices in education research (e.g., misrepresentation or exploitation of People of Color, centering white voices over People of Color, unchecked researcher identities being embedded throughout the research process, etc.). I thought deeply about my identity in three domains to alleviate some of these pitfalls. The areas of reflection included: myself as a researcher; myself in relation to my participants; and myself in relation to the systems that have formed my “way of knowing.” I also considered how my race intersected with my gender and my career working in a technical college system.

As a researcher, I engaged in ongoing self-reflection of my racial and gender identity. I considered how my identity as a White male researcher could cause biases in the research process. Namely, the privileges I had in navigating the education system; privileges which allowed me an option to neglect consideration of my own race and gender. As such, I centered the construct of race throughout my research to avoid habits of color-blindness and established mechanisms, such as deductive coding of racialized causes in the tracking literature, to lessen the impact of my bias as a researcher. Throughout my life I have engaged in my own personal journey of unlearning and learning on the topic of race and gender in education, society, and history. This deeply reflective process has been imperfect and iterative, but a necessary one for me to acknowledge and rectify my biases.

As a researcher, I also practiced ongoing self-reflection of my experience in a technical college system, including my participation in a dual enrollment course, and how this experience provided unique insights into my research topic as well as bias. I have worked in a technical college system for 15 years. The open access mission of two-year colleges and technical college philosophy to create industry-driven pathways to economic prosperity is ingrained in my soul. I believe deeply in the value of technical colleges and champion their collective work every day. Acknowledging these beliefs and the potential bias they could cause was necessary in managing their influence within my research. My resulting actions as a researcher required me to think critically about my own beliefs. For example, on the surface, open access education suggests notions of democratization where anyone and everyone can and will participate. When critically interrogated, and as suggested in my study's findings, it is clear that an open access approach to education isn't enough to fully address inequities in access. Rather, education institutions must reform and place onus on themselves to reach and enroll students.

Throughout the participant interview process, I practiced ongoing reflection about my identity in relation to my study's interview participants. I was aware that my race, gender, and experiences in a technical college system had implications to how research participants engaged in the process. As a White male, participants may have not felt comfortable discussing the topic of race with me. Due to my identity and a history of inequities in education research practice, interview participants may have also lacked trust in me as a researcher. Conversely, given my participants overwhelmingly identified as White, they may have felt a level of comfortability in discussing the topic of race with me. My role in a technical college system may have also influenced interview participants to not convey their true thoughts, feelings, and experiences due to career dynamics. On the other hand, perhaps my experiences in a technical college system provided a point of commonality which strengthened comfortability in conversations. Being aware of these concepts was a necessary first step for me to establish a series of trustworthiness and credibility measures throughout my research. Further, as a researcher, I was intentional in creating an environment of empowerment for interviewees to share their stories. To support this, I established research procedures that would provide interviewees with multiple modes and means to share their stories.

My "way of knowing" was initially formed by societal structures that encourage the idea of meritocracy. The belief that "if you work hard, things will come to you" has been further reinforced by my identity and prevailing in White male culture. In addition, my career in a technical college system has largely revealed the prevalence of this same belief in higher education; if you enroll in college, work hard, and complete a degree then you will find gainful employment. These notions have undoubtedly shaped who I am. Knowing this, I am aware that these beliefs neglect history and the uneven footing across race and gender forged through

political, economic, education, and other systems. Identifying the foundational formation of my “way of knowing” was vital to mitigating my bias in the research process. For example, not recognizing these systemic factors may prompt me to look at variance in dual enrollment participation rates by race and ask, “why is this group of students enrolling at a lower rate compared with others?” and “why aren’t they putting in the effort to enroll?” With a reframed mindset that acknowledges systemic factors, these questions change to, “why is this group enrolling at a rate higher than their peers” and “what advantages, overt and covert, are they being provided to support higher rates of enrollment?”

Throughout the data analysis and interpretation processes, I often found myself sympathizing with my interview participants and their stories. My beginning, foundational way of knowing grounded in meritocracy was prevalent among the dual enrollment practitioners I interviewed. In analyzing and interpreting discourse about race, or lack thereof, I found myself inclined to give my participants the benefit of the doubt. This sentiment was compounded by my own experiences working in a technical college system and recognition that staff are incredibly under resourced and spread thin; how could practitioners ever have the time to engage in deep reflection, challenge their ways of knowing, and then contextualize this to their work? I had to continuously challenge my feelings and critique my analysis and interpretations to lessen the effects of my positionality and biases in the research process. There were clear differences across dual enrollment partners in how racial equity guided and informed policy and practice. I had to find what shaped these differences in an objective fashion while continuously acknowledging and managing my own way of knowing. This was especially relevant when interpreting colorblind practices. For example, on the surface, it is commendable to establish an institutional goal to grow dual enrollment participation from one year to the next. Without consideration to

race, these colorblind goals that center “dual enrollment for all” do not acknowledge historical constructs and the potential for racial segregation in dual enrollment spaces. Rather, “dual enrollment for all” perpetuates what has been. As a pragmatist, I strive to create research for action. As such, I had to mitigate my biases throughout the research process in an effort to produce relevant results. In the next section, I identify and discuss a series of strategies to strengthen the quality of my research in light of my positionality.

Quality of Data and Interpretations

I used a series of strategies to strengthen the quality of my data collection, analysis, and interpretations. Within this section, I discuss the strategies I used in Strand I (quan), Strand II (qual), and forming meta-inferences.

Strand I (quan) Reliability and Validity

The administrative data I used are collected by two of the state’s educational administrative agencies; the state K-12 system and the state technical college System Office. Both entities have been collecting the administrative data for several decades. Each entity has enacted a series of data quality standards and data monitoring activities to mitigate data quality challenges. In addition, each of these educational administrative agencies complies with US Department of Education regulations on data collection and data quality. These data-related regulations have been implemented to comply with accountability requirements connected to various federal fiscal funding streams such as Perkins.

Because the quantitative methods in my study required multiple chi-square tests that evaluate each suburban high school separately, a more conservative critical value was used to assess if the observed values are significantly different from the expected values. A Bonferroni critical p-value was used. A Bonferroni critical p-value is useful in instances of multiple testing

and controlling for type I error in false positives (Agresti, 2018). To calculate the Bonferroni critical p-value, I divided an original critical p-value of .05 by the number of tests that were performed. The quotient became the new critical p-value to assess significance of the chi-square results.

All quantitative analysis procedures were performed and checked multiple times. This process was conducted to identify any errors in quantitative analysis procedures. In addition, quantitative data, analysis output, and findings were shared with my advisor prior to using the results to guide Strand II (qual) in my sequential mixed methods study. After advisor approval, I transitioned to Strand II (qual) data collection.

Strand II (qual) Trustworthiness and Credibility

I resorted to several approaches to ensure trustworthiness and credibility of my qualitative findings. The strategies I used included member checks, peer examination, and triangulation. In addition, negative case analysis was used (Carspecken, 1996) as well as practicing reflexivity throughout the research process. Finally, the robustness of analytic techniques further strengthened the trustworthiness of my qualitative findings.

I used member checking within semi-structured interviews to verify the accuracy of findings. Member checking included asking participants in the study to check for completeness of findings or fairness of interpretations (Creswell, 2012). Participants were provided summaries of interview analysis and interpretations to identify areas of agreement, disagreement, and enhancements. Member checking was also used when interpreting written dual enrollment documents. Summaries of my interpretations of the documents, and how they related to participant interviews were shared with participants to provide feedback.

Related to member checking, during each interview I tried to confirm what participants shared while probing for additional insights to deepen my understanding. Without jeopardizing the general flow of the interviews, I would interject with summaries of participant statements to seek confirmation or disagreement with my interpretations. This strategy both corrected instances of misinterpretations and provided participants with a prompted opportunity to further expand upon my summary and interpretation. For instance, if a participant conveyed the institution had a commitment to racial equity, I would push back by asking if this commitment extended to dual enrollment and what it meant to the functions of dual enrollment operations. In addition, if a participant indicated their organization was committed to equity, I would probe by asking what equity meant to the institution and whom equity was for. These approaches allowed me to understand participant experiences more concisely by uncovering important nuance connected to my research question.

I used peer examinations to reassure my qualitative findings. Peer examinations included the external assessment of the research process (Merriam, 1998) and the reporting back of strengths or weaknesses of data analysis and interpretations. Throughout the process, my advisor acted as a peer reviewer to ensure quality of my inquiry, analysis, and interpretation. In addition, professional colleagues who did not participate in my study acted as peer reviewers. My colleagues analyzed portions of the collected data independently, provided feedback on the analysis, and then convened with me to discuss the analysis and what it meant. Consensus of analysis in areas where data were not interpreted similarly was made. For example, peers reviewed deductive codes connected to SRT that I applied to the data. This process identified areas of alignment and divergence in the deductive coding process. Discussion occurred to solidify interpretations of SRT's constructs and how they emerged or did not emerge in the data.

Further discussions unpacked coding interpretations in relation to addressing my research question across data sources. For instance, peer review confirmed that SRT's concept of habitus was more prevalent among interview participant data detailing student experiences rather than written dual enrollment course descriptions. Conversely, SRT's concept of social and cultural capital were more prevalent within written dual enrollment course descriptions rather than participant interview data. Sensemaking of these differences were discussed to support alignment in the peer review process.

I also used triangulation by collecting data from multiple sources to identify areas of convergence. For instance, semi-structured interviews and document analysis were conducted across each high school, allowing for cross-checks of concepts and themes between the two data sources. Areas of alignment between interviews and document analysis were clear, demonstrating triangulation across sources to support trustworthiness of findings. For example, interviews with high school participants revealed that eligibility requirements are not used. Rather, dual enrollment participation is open access. High school dual enrollment materials were analyzed for references to eligibility requirements, and revealed they did not exist. Triangulation across these two data sources demonstrated clarity and congruence that dual enrollment eligibility requirements are not used.

Carspecken's (1996) negative case analysis was used to identify any themes that emerged from qualitative data that did not fit within the context of my research question. This close attention shed light on outlier data that did not fit with the overall findings of the study. These data were reanalyzed to verify their status as outlier data in relation to the larger findings of the study. This process required deep reflection and providing myself grace with the challenging decision to part with data. Interviewees shared many barriers to dual enrollment access, some

universal among all participants. Examples included navigating accreditation requirements, dual enrollment instructor qualifications, a limited supply of skilled labor to fill dual enrollment instructor positions, and navigating perceptions of a two-year college education. While these concepts related broadly to dual enrollment access, they do not provide meaning to racial (in)equity in dual enrollment participation. Similarly, they do not relate to policy or practice that directly shapes racial equity in dual enrollment.

Reflexivity occurs when a researcher engages in self-understanding about the biases, values, and experiences that they bring to a research study (Creswell & Poth, 2018). In light of my positionality, I practiced reflexivity by journaling my biases in the research process. In addition, I openly disclosed my own positionality with interview participants at the conclusion of each participant's final interview. Following the disclosure of my positionality, I shared that member checks would be conducted to ensure that my own positionality or biases did not jeopardize my data interpretations.

The robustness of data analysis techniques across multiple data sources further supports the quality of my qualitative findings. The techniques used to analyze the qualitative data within this study provided a system of validation by "checking" the data in multiple ways: low-level coding, high-level coding, and the categorization of codes into larger themes. In addition, data analysis included meaning field analysis, and the use of deductive coding with SRT. These various data analysis techniques were used throughout Strand II (qual) by operationalizing them across the strand's multiple data sources.

The multiple phase approach of data collection and analysis across Strand II (qual) provided me the ability to identify concepts or themes from phase one and see how they played out in phase two. This process confirmed what I uncovered from phase one, which strengthened

the trustworthiness of my findings, and provided a greater breadth of data and various voices to center in my findings.

Meta-Inference Quality

The use of sequential mixed methods design logic within my study demonstrates an intentional and iterative approach to inquiry. Both quantitative and qualitative methods were used to address the research question. Together, the quantitative and qualitative methods of data collection and data analysis are integrated. This integration generated my meta-inferences i.e., integrated study conclusions that are developed based on the interpretation of the quantitative and qualitative results in response to the research question (Plano Clark & Ivankova, 2016).

The process of developing meta-inferences was dynamic in nature and first required critical examination of the quantitative and qualitative results separately as previously described. Close attention to the quality of data collected across both strands was made because these data impact inferences developed through the integration of quantitative and qualitative methods (Plano Clark & Ivankova, 2016). Ensuring reliability and validity of data and findings in Strand I (quan) and trustworthiness and credibility of data and findings in Strand II (qual) was a key strategy to strengthen the quality of my meta-inferences. This process ensured I had a strong, quality foundation across both strands, which were then brought together to form meta-inferences.

The forming of meta-inferences also required critical examination of how both strands jointly addressed my research question. To guide this process, I used Ivankova's (2014) approach to assessing a sequential mixed methods (Quan → Qual) design logic. The approach provided me three points of reflection and strategy to strengthen the quality of my meta-inferences: (1) operationalizing a systematic process for selecting research sites and participants

for qualitative inquiry; (2) interrogating perplexing quantitative results; (3) centering interactions between quantitative and qualitative strands.

I systematically selected dual enrollment partner entities and participants for my qualitative inquiry. Strand I (quan) included the analysis of administrative data to identify racial (dis)parity in dual enrollment participation. Then, several strategies to control confounding variables, such as suburb classification and high school student composition, were used to guide the formation of a series of pairs that could potentially serve as high school research sites. With various pairs identified, additional quantitative strategies deducted from the suburban research literature were used to identify the pair of high schools to serve as research sites. With my high school research sites selected, a gatekeeper was used to introduce me to the high school staff member who coordinates dual enrollment at the high school. These individuals, as well as the dual enrollment partners across the technical college system, served as interview participants.

Throughout Strand I (quan), I continuously investigated unexpected quantitative results. These unexpected quantitative results are illustrated across my research findings and were also used to guide the sequential nature of my study. For example, analysis of dual enrollment participation rates across suburb classification revealed complex nuance. High schools situated in large suburban regions of the state experienced significantly lower rates of dual enrollment participation compared with high schools located in mid-sized or small suburbs. In addition, this unexpected result from Strand I (quan) informed additional quantitative procedures. More specifically, I controlled for suburb classification when forming research site pairs to ensure each pair's high schools were in a similarly sized suburban region of the state and to reflect quantitative findings suggesting dual enrollment participation varies by suburb size.

Strand I (quan) and Strand II (qual) came together to assess interactions between the two strands. Interactions created shared meanings that combined quantitative and qualitative methods and minimized any limitations of either method while uplifting each respective strength. To fully realize these benefits, my approach to examining the interactions between strands was iterative and responsive. For example, semi-structured interviews with high school staff and examination of dual enrollment materials revealed that the institutions do not use eligibility requirements in determining dual enrollment participation. This policy finding guided me to re-engage with the quantitative data and reflect on other policies or practices that might shape dual enrollment participation. In response, high school dual enrollment partners were shown their high school's dual enrollment participation rate data generated from Strand I (quan) and asked to reflect upon what might be contributing to the results. Further, the uncovering of dual enrollment's open access approach prompted the two-phase nature of my semi-structured interviews. In phase one of semi-structured interviews, a series of policies and practices were unearthed to help explain racial (dis)parity in dual enrollment participation. Phase two engaged all technical college dual enrollment partners to confirm dual enrollment as an open access opportunity and to find congruence or divergence of phase one concepts and themes. Throughout phase two, I revisited each technical college's overall dual enrollment participation rate by race to better understand how the practices or policies they shared might relate and interplay.

Chapter IV: Findings

Within this chapter, I present the findings of my mixed methods study. I begin with findings from Strand I (quan), which illustrate patterns in dual enrollment participation by high school geographic location, suburb size, student race, and their intersections. Results demonstrate a complexity to dual enrollment participation across the state. High schools located in non-suburban regions have experienced more accelerated growth in the proportion of high school students participating in dual enrollment compared with high schools located in suburban regions. Analysis by suburb classification also revealed differences in participation; high schools located in large suburbs have significantly lower dual enrollment participation rates compared to high schools located in midsize and small suburban regions. This finding has statewide racial implications because large suburbs account for comparably more high school students and these high schools enroll more Students of Color. Racial disproportionality in dual enrollment participation is salient across the state technical college system; this finding exists at the state level and in non-suburban and suburban regions separately. Racial disparities in participation also exist in the different suburb sizes, but nuance exists, suggesting a need for further investigation. Disparities are more pronounced in large and midsize suburbs among Black or African American, Hispanic/Latinx, and students who identify as more than once race. Further, in large suburbs, only three percent of Black or African American students participated in dual enrollment during the 2016 and 2020 academic years separately, while year-to-year growth was experienced among Black or African American students enrolled at high schools located in small and midsize suburbs.

In Strand II (qual), I present major themes based on my analysis of the dual enrollment documents and semi-structured interviews with dual enrollment partners. Results demonstrate a

clear connection and theoretical backing of SRT. The application of SRT demonstrates how dual enrollment participation might propel upward social mobility and potentially disrupt the negative effects of social reproduction forged from historical and systemic forces that have created an unequal footing by race. Notably, dual enrollment, and its creation driven by the technical college system's education for employment philosophy, provides copious opportunities for high school students to acquire social and cultural capital that shape student habitus about college and career options and provide advantages as students navigate the field of education and career pathways. Connections to SRT bring great meaning to my quantitative findings and build a sense of urgency in policy and practice that advance participation by race. Many policies and practices supportive of racial equity in dual enrollment emerged in Strand II (qual) including establishing an institutional commitment to racial equity, developing articulated dual enrollment pathways that provide a guide to college and careers, and building awareness of dual enrollment through various strategic and responsive approaches. These practices are interconnected, intersecting in different ways with potential for varied results in leveling the playing field to accelerate participation by race.

Finally, Strand I (quan) and Strand II (qual) are integrated to form meta-inferences which illuminate the existence of racial (dis)parity in dual enrollment participation and the policy and practices that may be contributing to the racial (in)equity in dual enrollment access. When brought together, these meta-inferences detail how dual enrollment partner policy and practice, such as an institutional commitment to racial equity that guides how the organization does business, might shape who participates in dual enrollment programming. In addition, the meta-inferences bridge the transformative effect of dual enrollment participation that propels upward

social mobility with racial (dis)parity in participation to shed light on necessary policy and practice reframing which acknowledges and responds to systemic racial inequity.

Strand I (quan) Findings

The proportion of high school students enrolled in a dual enrollment course is surging across the technical college system. Yet, participation is far from equal across the state. High schools located in suburban regions maintain a lower rate of student participation compared with high schools located in non-suburban regions. Within suburban regions, high schools located in large suburbs have a lower rate of participation compared with small and medium size suburbs. The impact of lower rates of participation across suburban region size has racial implications. A higher proportion and larger number of Students of Color attend high schools located in large suburbs. Racial disproportionality in dual enrollment participation permeates the state technical college system. At the state-level and by geographic location, significant differences in dual enrollment participation exist by race.

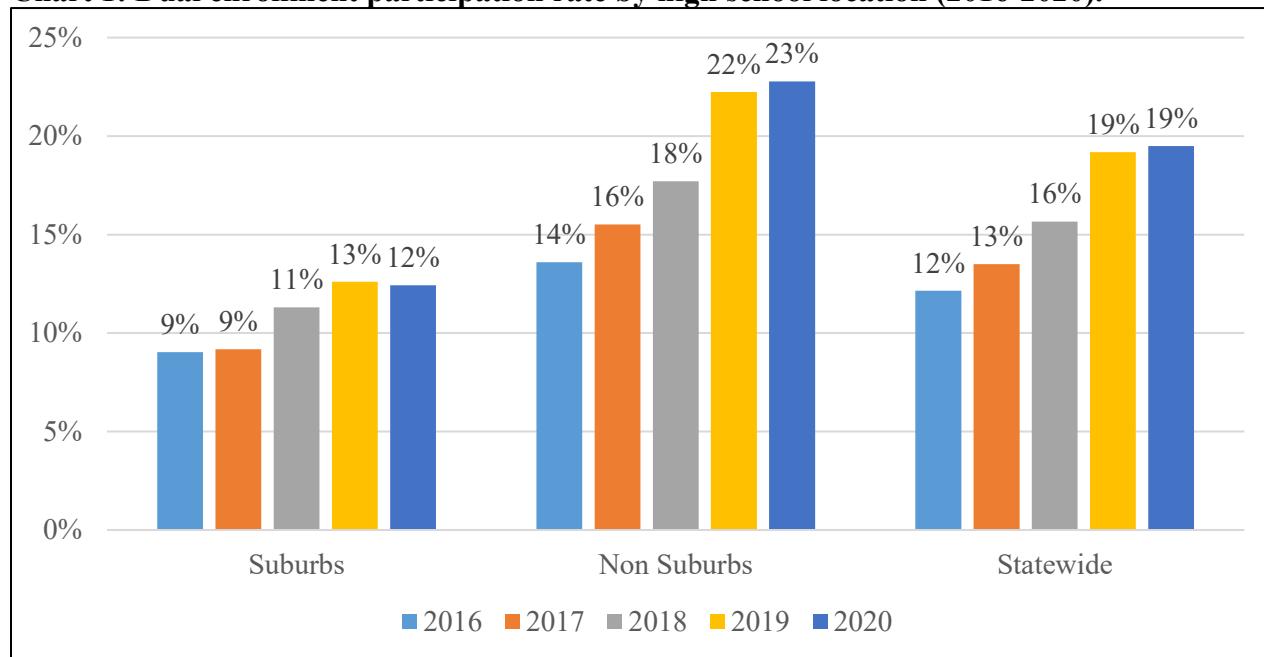
The quantitative strand of my study included exploratory correlational analysis to understand the relationship between dual enrollment participation and race and ethnicity. To fully investigate racial (dis)parity in dual enrollment participation, analysis was conducted at the state-wide level and descended in a downward fashion to high school location, three different classifications of suburban regions, and Anytown and Falls High Schools. The following sections present the quantitative findings and conclude with a summary to demonstrate the need of my qualitative strand.

Dual Enrollment Participation by High School Location and Race and Ethnicity

Across the state, dual enrollment participation has demonstrated growth over a five-year period (Chart 1). During the 2020 academic year, 19 percent of high school students participated

in dual enrollment programming. Significant variation in participation exists by high school location. High schools located in non-suburban regions have also experienced growth, but at a much faster rate. In 2016, 14 percent of high school students participated in a dual enrollment course and in 2020, 23 percent participated in a dual enrollment course. Dual enrollment participation at high schools located in the state's suburbs experienced growth over the five-year period. This growth was both slower over time and less significant. During the 2016 academic year, 9 percent of students at a suburban high school participated in dual enrollment and 12 percent participated in dual enrollment during the 2020 academic year.

Chart 1: Dual enrollment participation rate by high school location (2016-2020).



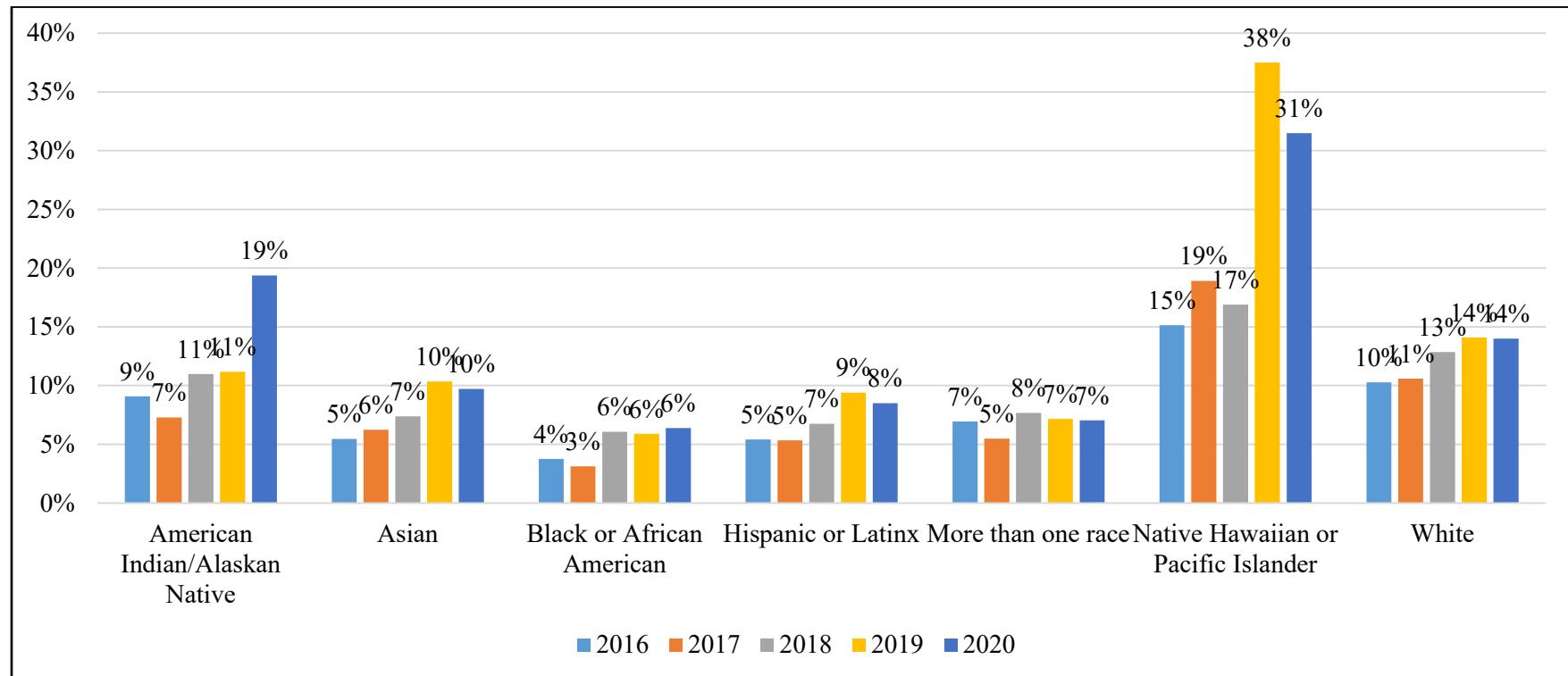
Data was also analyzed by race across the three high school locations: suburbs (Chart 2), non-suburbs (Chart 3), and statewide (Chart 4). Results echoed the existing dual enrollment research literature and revealed racial disproportionality in dual enrollment participation. The racialized disparities in participation permeated each of the three levels of analysis.

High school students identifying as Native Hawaiian or Pacific Islander are the smallest proportion of all high school students and have the highest rate of participation in both suburban and non-suburban regions. White high school students represent the largest proportion of high school students and typically have the second highest rate of dual enrollment participation across suburban and non-suburban regions. Over the five years of data presented, the White high school population has experienced a sizable decrease in the number of students within both suburban and non-suburban high schools.

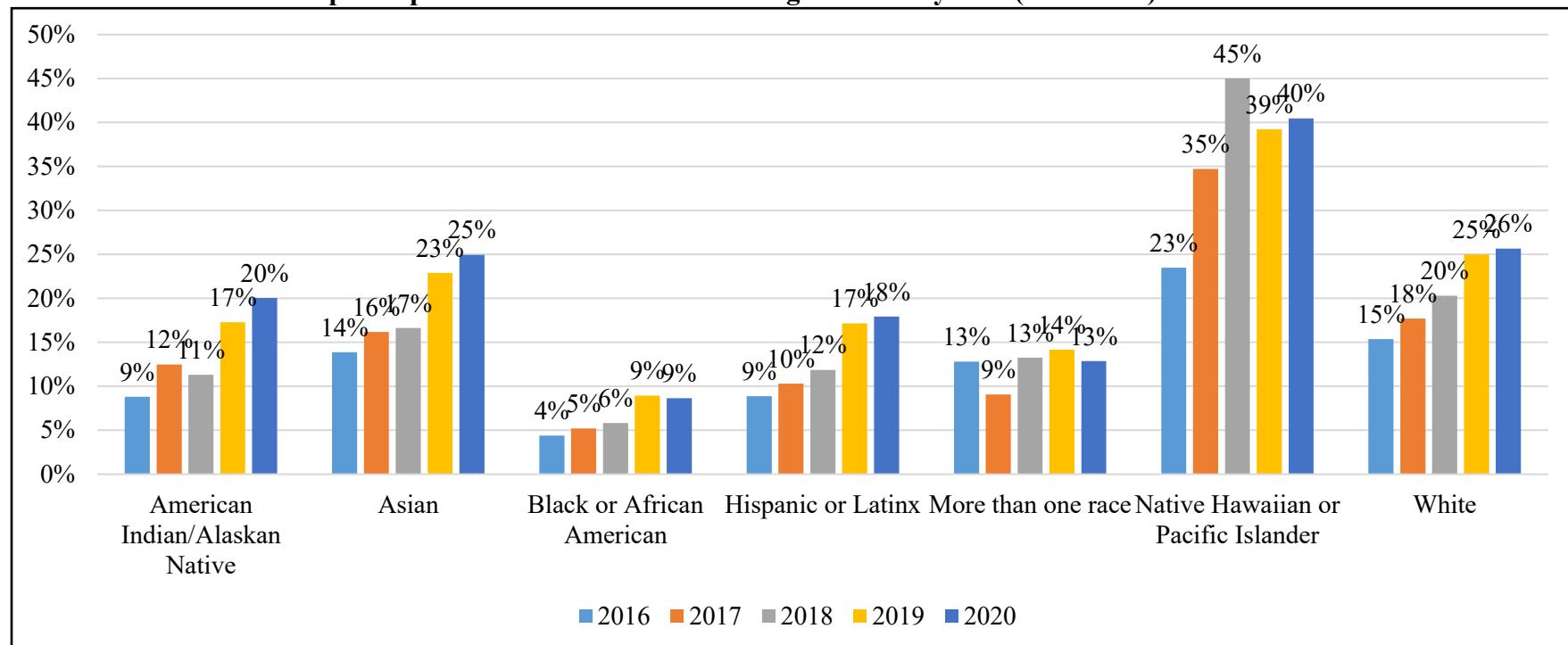
Black or African American, Hispanic/Latinx, and high school students who identify as more than one race have the lowest rates of dual enrollment participation in suburban and non-suburban high schools. Within suburban high schools, there is a much smaller difference in participation between Asian students and the precedingly mentioned student groups compared to non-suburban high schools. The number of Asian high school students has also experienced year-to-year growth in suburban high schools while remaining relatively stagnant in non-suburban high schools.

Longitudinal dual enrollment participation growth within suburban high schools is relatively stagnant or demonstrates year-to-year fluctuation among Black or African American students and students who identify as more than one race. This finding is in contrast with the White, Asian, American Indian/Alaskan Native populations which have experienced steady growth from year-to-year.

Chart 2: Dual enrollment participation rate at suburban high schools by race (2016-2020).

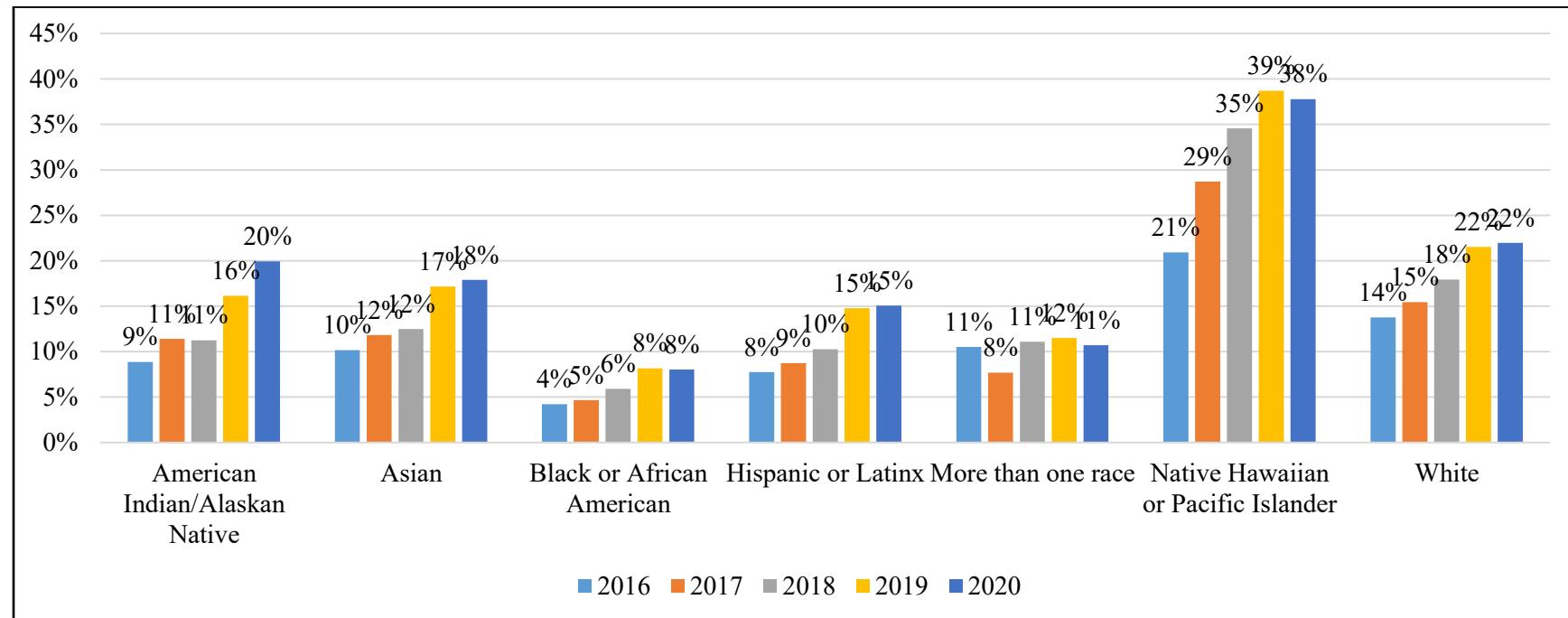


Student Race and Ethnicity	High School Student Headcount					Dual Enrollment Student Headcount				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
American Indian/Alaskan Native	660	631	601	572	516	60	46	66	64	100
Asian	3,843	3,942	4,083	4,231	4,360	210	246	301	438	424
Black or African American	5,916	5,811	5,537	5,379	5,515	222	182	336	317	352
Hispanic or Latinx	8,111	8,542	8,756	8,975	9,197	439	457	592	844	781
More than one race	2,274	2,510	2,829	3,085	3,239	158	138	217	221	228
Native Hawaiian or Pacific Islander	66	74	71	56	54	10	14	12	21	17
White	62,917	61,898	61,223	60,390	59,434	6,472	6,564	7,872	8,512	8,325

Chart 3: Dual enrollment participation rate at non-suburban high schools by race (2016-2020).

Student Race and Ethnicity	High School Student Headcount					Dual Enrollment Student Headcount				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
American Indian/Alaskan Native	2,466	2,452	2,449	2,451	2,476	217	306	277	424	496
Asian	4,882	5,058	5,029	5,053	5,045	678	819	836	1,157	1,259
Black or African American	15,875	16,045	15,846	15,480	15,441	697	835	924	1,385	1,334
Hispanic or Latinx	17,208	18,147	19,312	20,258	21,234	1,526	1,872	2,291	3,477	3,808
More than one race	3,539	4,036	4,513	5,032	5,571	453	366	598	713	716
Native Hawaiian or Pacific Islander		149	121	120	130	126	35	42	54	51
White	134,423	132,205	130,060	129,362	127,833	20,675	23,389	26,417	32,334	32,813

Chart 4: Dual enrollment participation rate state-wide by race (2016-2020).



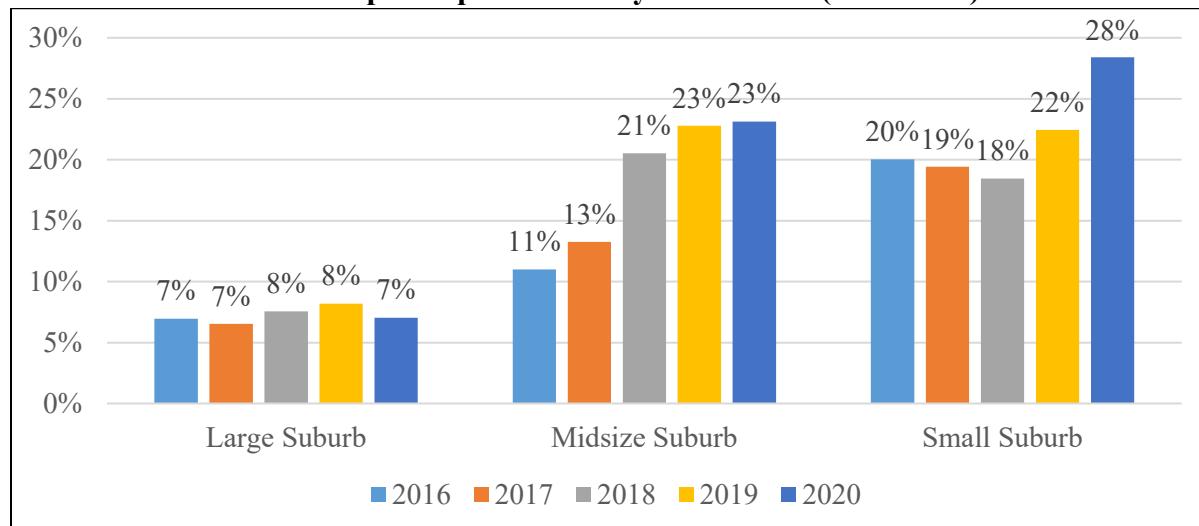
Student Race and Ethnicity	High School Student Headcount					Dual Enrollment Student Headcount				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
American Indian/Alaskan Native	3,126	3,083	3,050	3,023	2,992	277	352	343	488	596
Asian	8,725	9,000	9,112	9,284	9,405	888	1,065	1,137	1,595	1,683
Black or African American	21,791	21,856	21,383	20,859	20,956	919	1,017	1,260	1,702	1,686
Hispanic or Latinx	25,319	26,689	28,068	29,233	30,431	1,965	2,329	2,883	4,321	4,589
More than one race	5,813	6,546	7,342	8,117	8,810	611	504	815	934	944
Native Hawaiian or Pacific Islander	215	195	191	186	180	45	56	66	72	68
White	197,340	194,103	191,283	189,752	187,267	27,147	29,953	34,289	40,846	41,138

Dual Enrollment Participation by Suburb Size and Race and Ethnicity

Sixty of the 70 high schools located in a suburban region (86 percent) offered dual enrollment during any of the academic years between 2016 to 2020. The proportion of high schools offering dual enrollment varies by suburb size. All high schools located in a small suburb offered dual enrollment anytime between academic years 2016 and 2020. Roughly 80 percent of high schools located in midsize suburban regions offered dual enrollment while 84 percent of high schools located in large suburbs offered dual enrollment.

Significant variance exists in dual enrollment participation by high school location (Chart 5). Participation at high schools in midsize suburbs has grown from 11 percent in academic year 2016 to 23 percent in academic year 2020. The participation rate in small suburbs has experienced some fluctuation during the five-year period, but also demonstrates growth over the five-year period. In contrast, the dual enrollment participation rate among high schools located in large suburbs has experienced stagnant growth over the five-year period. It is important to note that the high school population in large suburbs is larger than the population connected to the other suburb classifications and represents a more racially diverse high school student body.

Chart 5: Dual enrollment participation rate by suburb size (2016-2020).

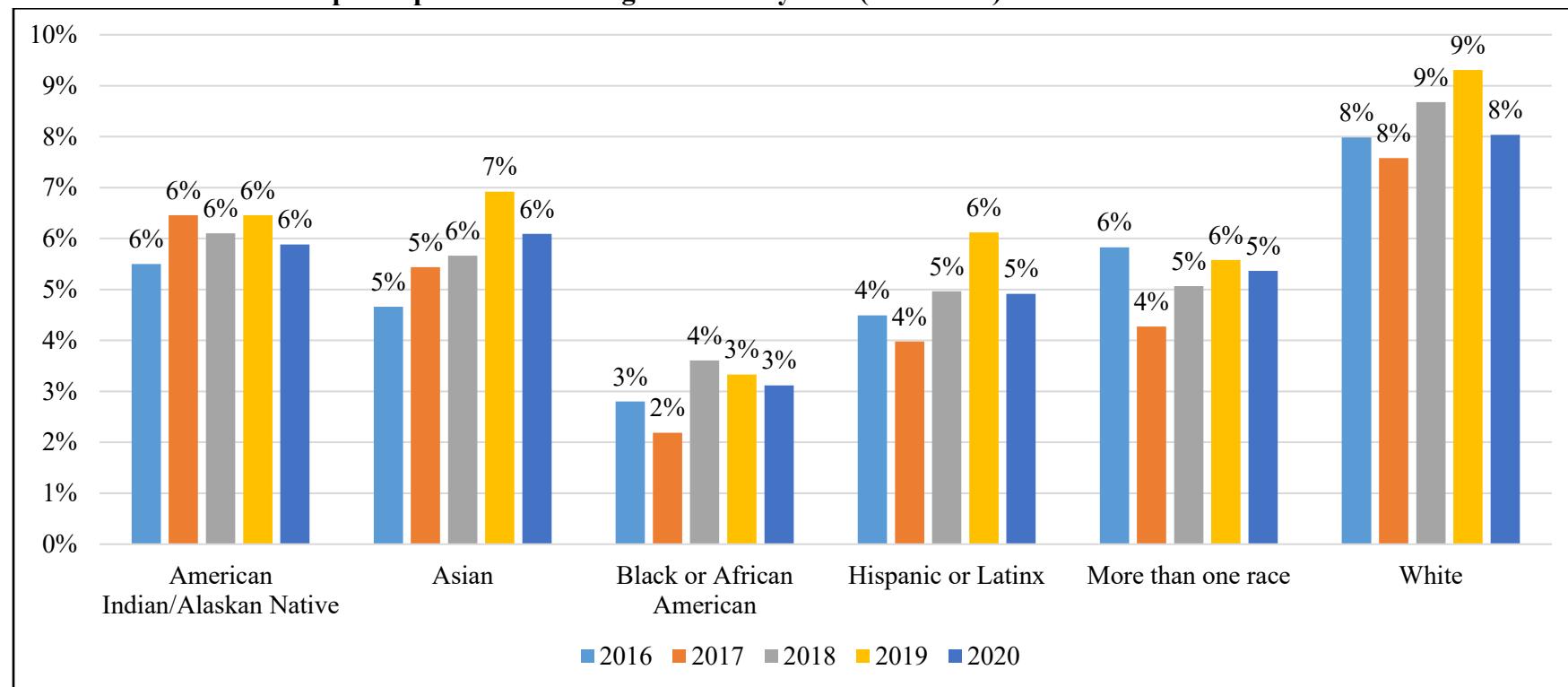


Analysis of dual enrollment participation rates within each suburb type reveals that racial disproportionality permeates the suburbs. While the number of students participating in dual enrollment is the largest in large suburbs (Chart 6), the overall participation rate across student groups is significantly smaller than the rates at high schools located in midsize (Chart 7) and small suburbs (Chart 8).

Results demonstrate that racial disparities in participation across the three suburban classifications persist, but particularly in large and midsize suburbs among Black or African American, Hispanic/Latinx, and students who identify as more than once race. In large suburbs, only three percent of Black or African American students participated in dual enrollment during the 2020 academic year. The 2020 rate for Black or African American students is the same as it was during the 2016 academic year. This finding diverges from trends in midsize and small regions which demonstrate upward momentum in dual enrollment participation among Black or African American students. While midsize regions have experienced growth in the proportion of Black or African American students participating in dual enrollment, the growth has not comprehensively narrowed gaps in participation with other populations.

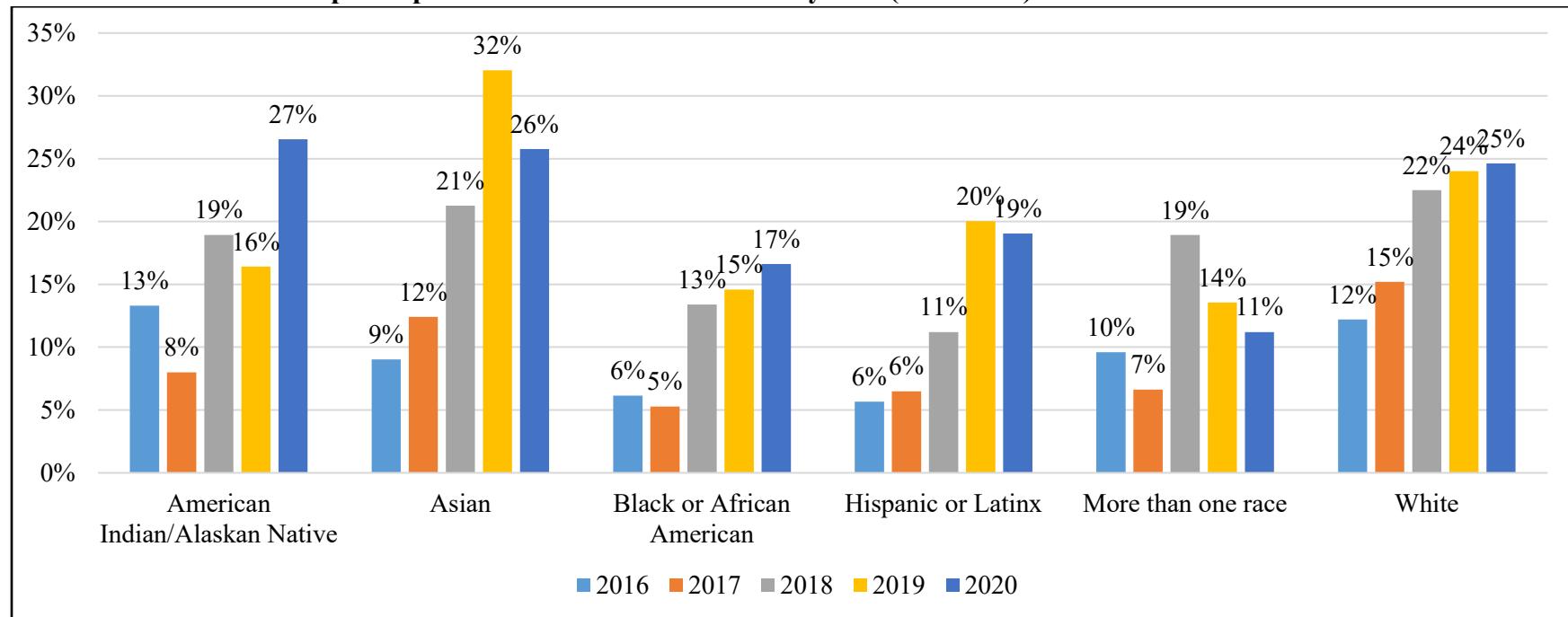
Hispanic/Latinx students in large suburban regions have maintained consistent rates of participation over the five-year period and lag White students. This finding for Hispanic/Latinx students is consistent within small suburban regions and diverges in midsize suburban regions where the rate of participation grew from 6 percent in 2016 to 19 percent in 2020. While Hispanic/Latinx participation in dual enrollment has grown overtime in midsize suburbs, differences in participation in comparison to other groups persist.

Collectively, these findings suggest a complexity to the nation's suburbs. There is variation in participation by suburb size. Similarly, there is variation by race and ethnicity.

Chart 6: Dual enrollment participation rate in large suburbs by race (2016-2020).

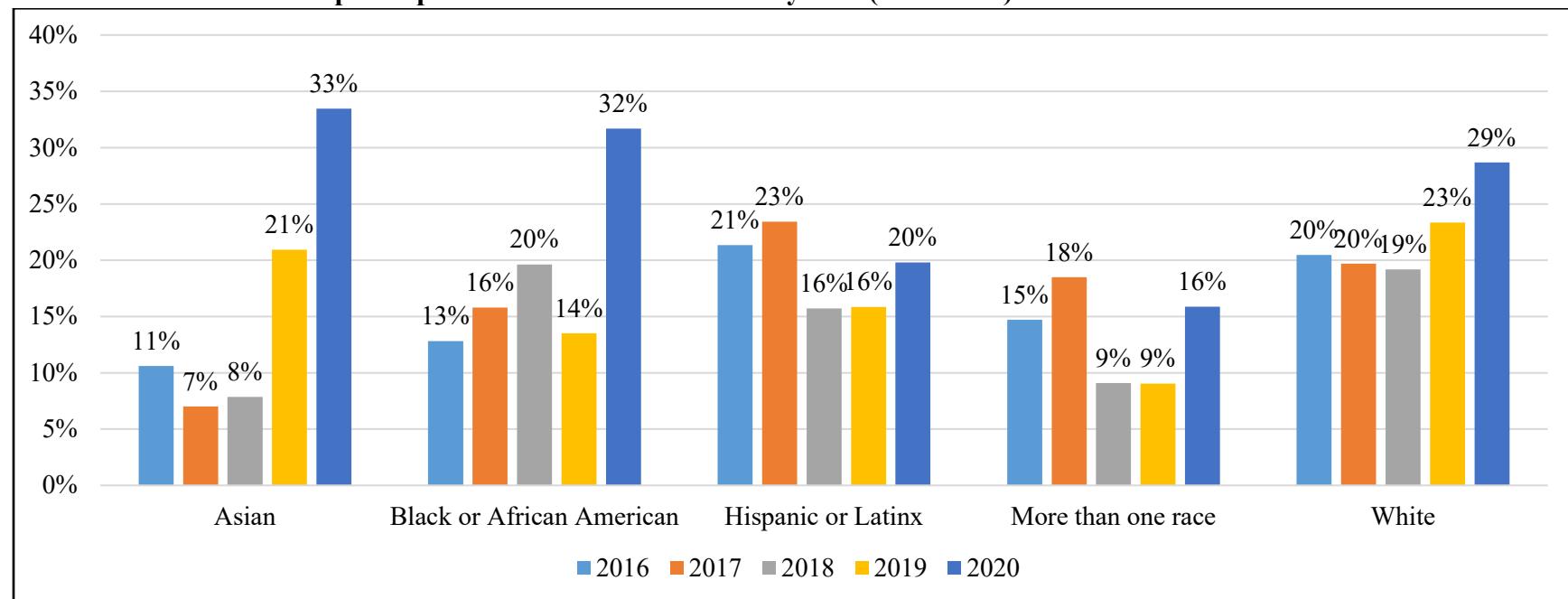
Student Race and Ethnicity	High School Student Headcount					Dual Enrollment Student Headcount				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
American Indian/Alaskan Native	400	387	377	356	323	22	25	23	23	19
Asian	3,218	3,311	3,427	3,539	3,662	150	180	194	245	223
Black or African American	4,466	4,429	4,214	4,144	4,295	125	97	152	138	134
Hispanic or Latinx	6,122	6,438	6,545	6,715	6,896	275	256	325	411	339
More than one race	1,784	1,942	2,172	2,366	2,461	104	83	110	132	132
Native Hawaiian or Pacific Islander*										
White	42,375	41,464	41,034	40,424	39,677	3,384	3,143	3,560	3,764	3,188

*Data suppressed due to small sample size

Chart 7: Dual enrollment participation rate in midsize suburbs by race (2016-2020).

Student Race and Ethnicity	Public High School Student Headcount					Dual Enrollment Student Headcount				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
American Indian/Alaskan Native	233	225	206	195	177	31	18	39	32	47
Asian	399	403	414	434	423	36	50	88	139	109
Black or African American	1,333	1,268	1,216	1,124	1,119	82	67	163	164	186
Hispanic or Latinx	1,661	1,724	1,785	1,787	1,801	94	112	200	358	343
More than one race	354	422	481	531	589	34	28	91	72	66
Native Hawaiian or Pacific Islander*										
White	13,496	13,436	13,270	13,075	13,030	1,646	2,042	2,985	3,139	3,208

*Data suppressed due to small sample size

Chart 8: Dual enrollment participation rate in small suburbs by race (2016-2020).

Student Race and Ethnicity	Public High School Student Headcount					Dual Enrollment Student Headcount				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
American Indian/Alaskan Native*										
Asian	226	228	242	258	275	24	16	19	54	92
Black or African American	117	114	107	111	101	15	18	21	15	32
Hispanic or Latinx	328	380	426	473	500	70	89	67	75	99
More than one race	136	146	176	188	189	20	27	16	17	30
Native Hawaiian or Pacific Islander*										
White	7,046	6,998	6,919	6,891	6,727	1,442	1,379	1,327	1,609	1,929

*Data suppressed due to small sample size

Dual Enrollment Participation at Anytown and Falls High Schools

Anytown and Falls High Schools serve over 1,000 students annually and offer dual enrollment in partnership with a local technical college. Anytown High School offers dual enrollment in partnership with Fenwood College, and Falls High School offers dual enrollment in partnership with Sandy College. Geographically, both high schools are in a large suburban region of the state outside of two principle urban cities. In addition, both high schools are roughly 12 miles from the local technical college they partner with to offer dual enrollment.

Both high schools in this study are predominately White serving institutions. Also, the majority of students are not economically disadvantaged. Longitudinal trends in student composition at Anytown and Falls High Schools echo findings in the suburban research literature suggesting growth in the proportion of Students of Color and low-income families residing in the nation's suburbs (Frankenberg, et al., 2016; Frey, 2011; Lacy, 2016).

Anytown and Falls High Schools have experienced significant shifts in the racial and socioeconomic composition of their student body. At Anytown High School, the proportion of Students of Color more than doubled from 2006 to 2021 (Table 9). During the 2021 academic year, nearly one-in-five high school students identified as a Student of Color. The Hispanic or Latinx population, students who identify as more than one race, and Black or African American populations experienced the most growth over the 15-year period: collectively representing 5 percent of the high school population in 2006 and 14 percent in 2021.

The proportion of high school students at Anytown High School who identify as economically disadvantaged also significantly grew over the 15-year period. In 2006, nearly one-in-ten students identified as economically disadvantaged. This rate more than doubled to over 20 percent in 2021.

Table 9: Anytown High School student characteristic trends (2006-2021).

	2006		2011		2016		2021	
	N	%	N	%	N	%	N	%
American Indian/Alaskan Native	5	0.5%	5	0.5%	3	0.3%	2	0.2%
Asian	26	2.6%	35	3.6%	34	3.2%	43	4.2%
Black or African American	24	2.4%	45	4.6%	41	3.9%	42	4.1%
Hispanic or Latinx	26	2.6%	42	4.3%	60	5.7%	60	5.9%
White	908	91.8%	837	85.2%	891	84.1%	827	81.5%
More than one race	N/A	N/A	18	1.8%	31	2.9%	41	4.0%
Native Hawaiian or Pacific Islander	-	0.0%	-	0.0%	-	0.0%	-	0.0%
Students of Color	81	8.2%	145	14.8%	169	15.9%	188	18.5%
Black/Hispanic/More than one race	50	5.1%	105	10.7%	132	12.5%	143	14.1%
Economically Disadvantaged	95	9.6%	214	21.8%	218	20.6%	207	20.4%
Not Economically Disadvantaged	894	90.4%	768	78.2%	842	79.4%	808	79.6%
Female	483	48.8%	495	50.4%	525	49.5%	496	48.9%
Male	506	51.2%	487	49.6%	535	50.5%	519	51.1%

Falls High School also experienced significant shifts in the racial and socioeconomic composition of students (Table 10). Similar to Anytown High School, the proportion of Students of Color nearly doubled in size over the 15-year period. Also, like Anytown High School, students who identify as Black or African American, Hispanic or Latinx, or more than one race collectively make up three-quarters of all Students of Color in the 2021 academic year and have each experienced growth over the 15-year period.

Falls High School has also experienced large growth in the proportion of economically disadvantaged students. Like Anytown High School, the proportion of economically disadvantaged students has more than doubled over the 15-year period. In the 2021 academic year 20.1 percent of high school students identified as economically disadvantaged.

Table 10: Falls High School student characteristic trends (2006-2021).

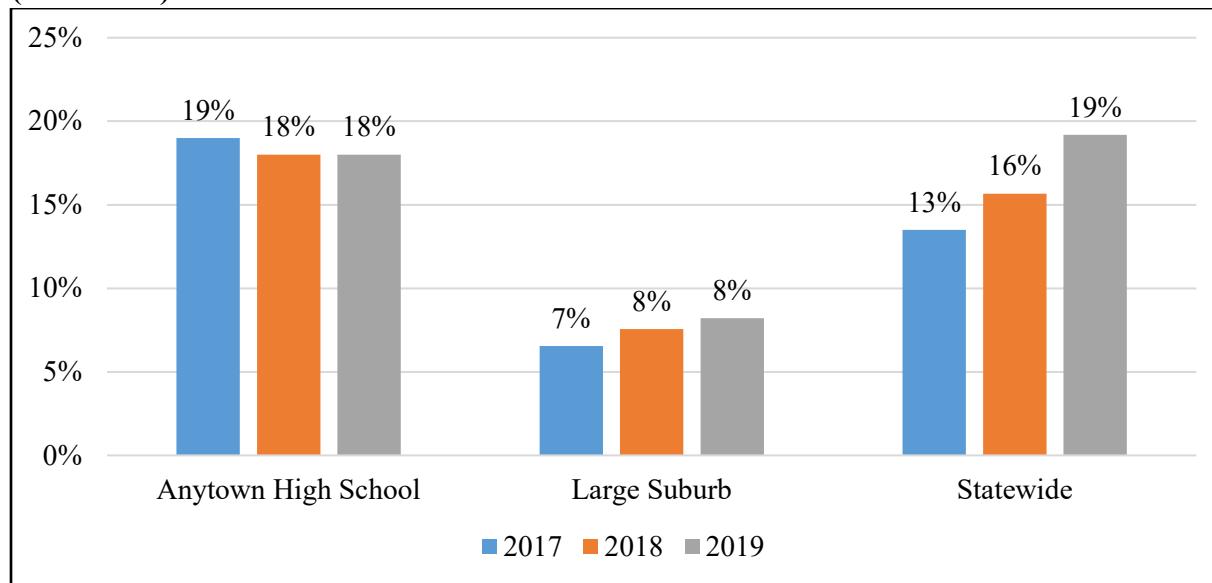
	2006		2011		2016		2021	
	N	%	N	%	N	%	N	%
American Indian/Alaskan Native	5	0.4%	10	0.7%	1	0.1%	9	0.7%
Asian	39	3.3%	88	5.7%	79	5.9%	84	6.4%
Black or African American	105	8.9%	170	11.1%	97	7.3%	146	11.2%
Hispanic or Latinx	35	3.0%	47	3.1%	53	4.0%	65	5.0%
White	1,002	84.5%	1,202	78.1%	1,055	79.0%	921	70.5%
More than one race	N/A	N/A	22	1.4%	51	3.8%	81	6.2%
Native Hawaiian or Pacific Islander	-	0.0%	-	0.0%	-	0.0%	-	0.0%
Students of Color	184	15.5%	337	21.9%	281	21.0%	385	29.5%
Black/Hispanic/More than one race	140	11.8%	239	15.5%	201	15.0%	292	22.4%
Economically Disadvantaged	82	6.9%	225	14.6%	188	14.1%	263	20.1%
Not Economically Disadvantaged	1,104	93.1%	1,314	85.4%	1,148	85.9%	1,043	79.9%
Female	583	49.2%	726	47.2%	679	50.8%	608	46.6%
Male	603	50.8%	813	52.8%	657	49.2%	698	53.5%

Both high schools offer dual enrollment programming at their institutions. Anytown and Falls High School offer the same number of dual enrollment courses at 12 each. Nearly all dual enrollment participation occurs at the high school, with less than five percent occurring at the local technical college.

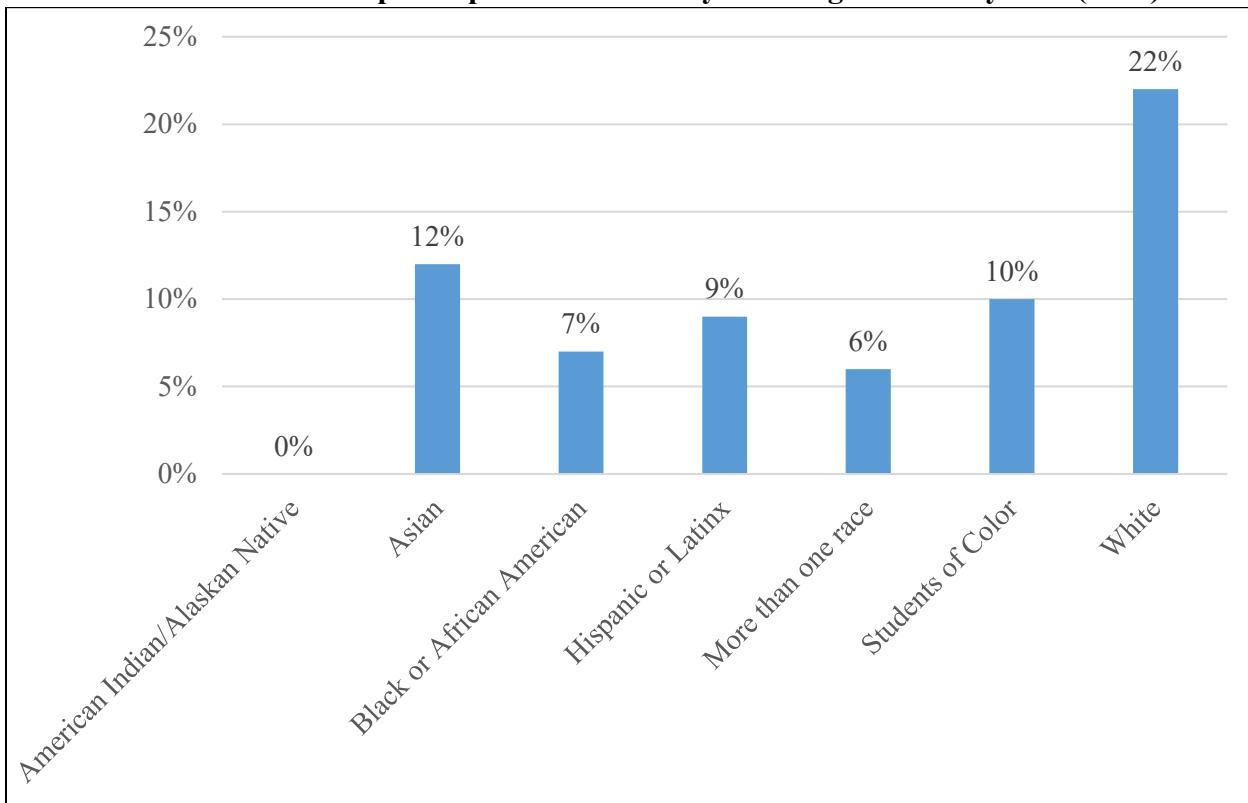
Between the 2017 and 2019 academic years, Anytown High School had a dual enrollment participation rate that exceeded the rate for high schools located in large suburbs (Chart 9). During the 2019 academic year, prior to the impacts of the COVID-19 pandemic, 18 percent of Anytown High School's students participated in dual enrollment compared with 8 percent at high schools located in large suburbs. Anytown High School's participation rate has remained

relatively stagnant in growth while the state rate has experienced year-to-year growth between the 2017 and 2019 academic years.

Chart 9: Dual enrollment participation rate at Anytown High School with benchmarks (2017-2019).

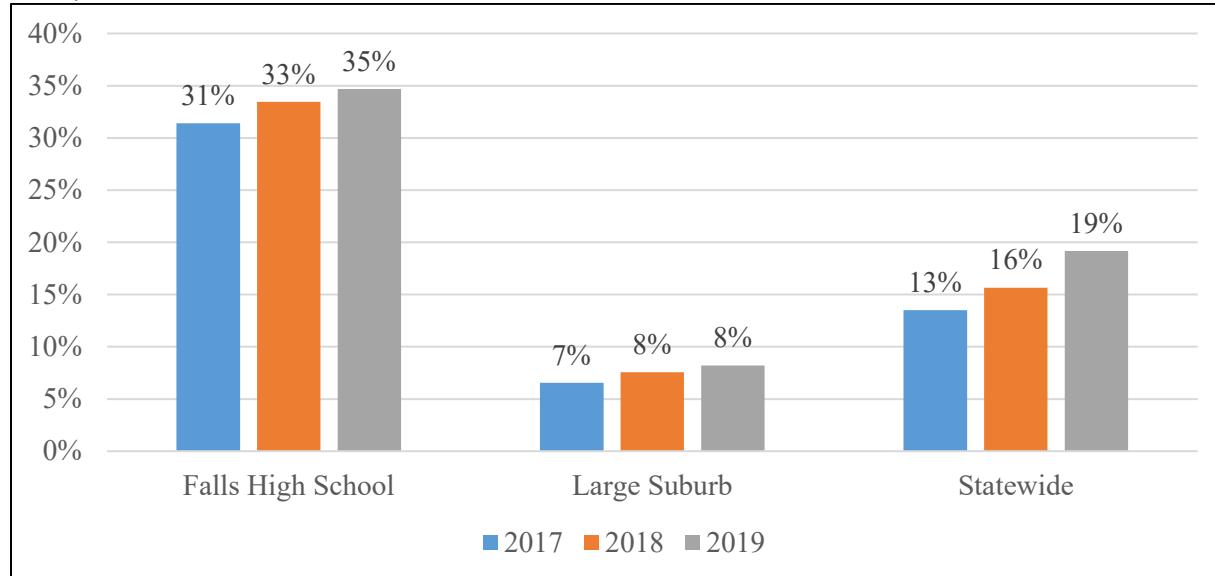


Anytown High School has experienced significant racial disproportionality in dual enrollment participation (Chart 10). During the 2019 academic year, 10 percent of Students of Color participated in a dual enrollment course while 22 percent of White students participated in a dual enrollment course. American Indian/Alaskan Native students represent the lowest participation rate at zero percent. Students who identify as more than one race had a participation rate of six percent. Asian students had the second highest participation rate at 12 percent, yet the difference in participation compared with White students is sizable. Mirroring the dual enrollment participation research literature, Black and African American and Hispanic or Latinx populations have significantly lower rates of participation at 7 percent and 9 percent respectively (e.g., Miller et al., 2017; Henneberger et al., 2015; National Center of Education Statistics, 2019a; Pierson et al., 2017; Pretlow & Wathington, 2013; Pretlow & Wathington, 2014).

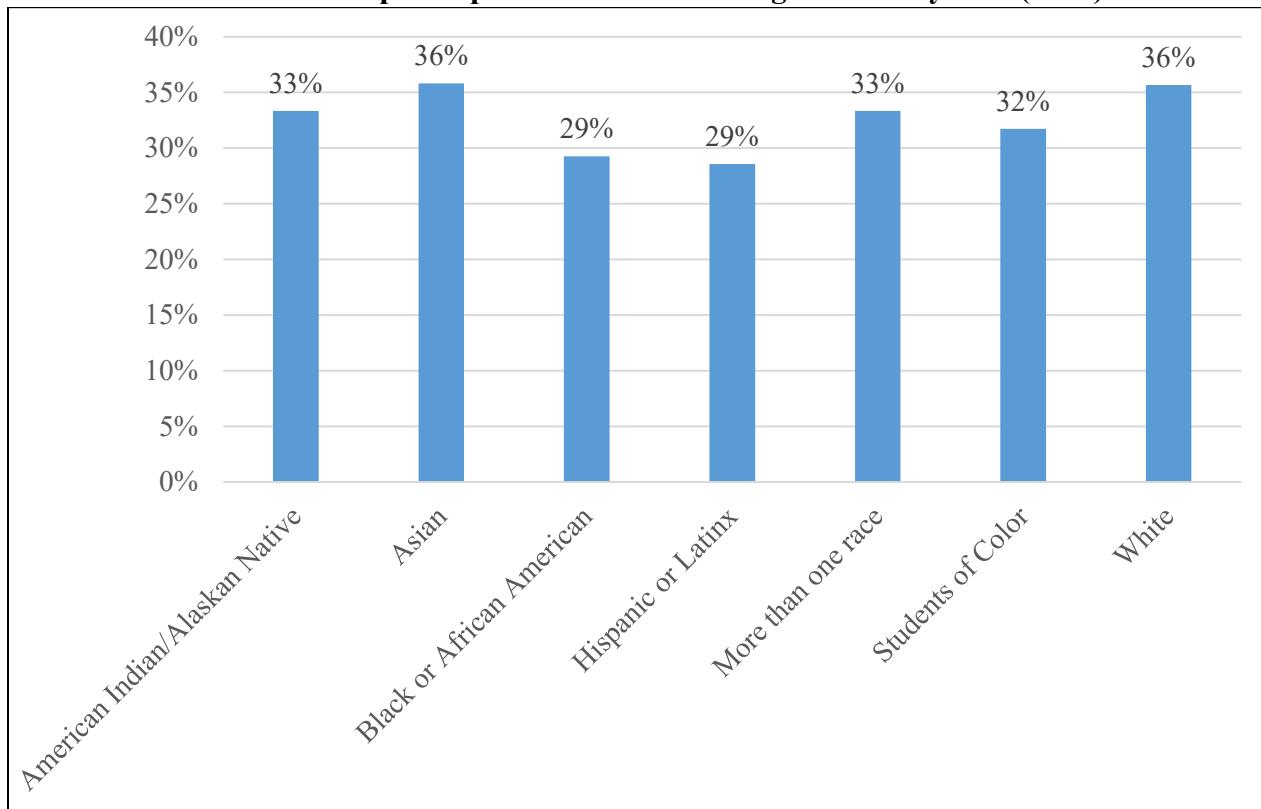
Chart 10: Dual enrollment participation rate at Anytown High School by race (2019).

While Anytown High School experienced stagnant growth in dual enrollment participation, Falls High School experienced steady growth between academic years 2017 and 2019 (Chart 11). During the 2019 academic year, prior to the COVID-19 pandemic, 35 percent of high school students participated in dual enrollment; nearly double the rate of Anytown High School. Falls High School's yearly participation rates drastically exceed the state rate and the rate for all high schools located in large suburbs.

Chart 11: Dual enrollment participation rate at Falls High School with benchmarks (2017-2019).



Analysis of Falls High School's dual enrollment participation rates by race demonstrate comparably less significant differences to Anytown High School (Chart 12). During the 2019 academic year, 32 percent of Students of Color at Falls High School participated in a dual enrollment course while 36 percent of White students participated in a dual enrollment course. Falls High School's participation rate among Students of Color is three times the rate of Anytown High School, which was 10 percent during the 2019 academic year. Asian students and White students had the highest rate of participation at 36 percent. Black or African American and Hispanic or Latinx high school students had the lowest participation rates at 29 percent. While the rates of participation for these two groups of students are the lowest at Falls High School, the rates far exceed the rates across the state, in large suburbs, and at Anytown High School. These findings suggest an opportunity to better understand the policy and practice that might be contributing to similar rates of participation by race at Falls High School, as well as an opportunity to understand the factors that might be contributing to the significant racial differences in participation at Anytown High School.

Chart 12: Dual enrollment participation rate at Falls High School by race (2019).

Strand I (quan) Findings Summary

The analysis of dual enrollment participation rates revealed many notable findings. At the state level, high school dual enrollment forged in partnership with a local two-year college has experienced growth. This finding is echoed in the dual enrollment research literature suggesting that participation across the nation has been on the rise (Fink et al., 2017, Marken et al., 2013). Further, research has found that dual enrollment growth is largely accounted for in two-year college dual enrollment offerings (Fink et al., 2017).

Analysis also unearthed that there is variation in where dual enrollment participation growth has occurred. High schools in non-suburban regions account for the vast majority of dual enrollment's growth. Participation in non-suburban regions grew by nearly 10 percentage points in five years, resulting in a rate of 23 percent during the 2020 academic year. In contrast, high

schools located in suburban regions experienced relatively sluggish growth from 9 percent in the 2016 academic year to 12 percent in the 2020 academic year. This finding mirrors the dual enrollment research literature suggesting that high schools located in suburban regions have comparably lower rates of dual enrollment participation to other regions (e.g., National Center of Education Statistics, 2019a; Pierson et al., 2017).

Additional analysis by suburban region size suggests increased complexity in understanding factors contributing to differences in dual enrollment participation. When segmented by suburb size, it was revealed that large suburbs have significantly lower dual enrollment participation rates compared to midsize and small suburban regions. This finding is notable given large suburbs account for comparably more high school students and these high schools have a more racially diverse student body. This suggests that potential barriers to accessing dual enrollment may exist in large suburbs that may not exist or be buffered in midsize and small suburban regions. These findings provide fuel to the existing dual enrollment research literature suggesting a need to further explore differences in participation within the nation's suburbs.

One of the more salient findings across each level of analysis is the existence of racial disproportionality in dual enrollment participation. This finding exists at the state level and in non-suburban and suburban regions separately. Racial inequities in participation also exist in the different suburb types, but nuance exists, suggesting a need for further investigation within the different suburb sizes. Across each level of analysis, Black or African American and Hispanic/Latinx high school students were significantly underrepresented in dual enrollment.

The existence of racial disproportionality uncovered through this study's quantitative analysis is similar to a series of state and national studies which found that Hispanic/Latinx and

Black or African American high school students are significantly less likely to participate in high school dual enrollment compared to their peers (e.g., Miller et al., 2017; Henneberger et al., 2015; National Center of Education Statistics, 2019a; Pierson et al., 2017; Pretlow & Wathington, 2013; Pretlow & Wathington, 2014). Further investigation of why these disparities exists, like at Anytown High School, and how they have been narrowed, like at Falls High School, is important given the suggested benefits of dual enrollment participation, which fuel success in navigating educational and career pathways towards social mobility. Through dual enrollment, high school students are exposed to college and careers, and this exposure is suggested to contribute to a higher likelihood of college entry without delay after high school graduation (Wang et al., 2015), and stronger postsecondary outcomes including college GPA, college persistence, credit accumulation, and degree completion (e.g., D'Amico et al., 2013; Karp et al., 2008; Kim & Bragg, 2008; Wang et al., 2015).

Exploring the factors associated with racial (dis)parity in dual enrollment participation within this study is also important given the landscape of Anytown and Falls High Schools. Both high schools have many similarities. They both offer the same number of dual enrollment courses and partner with a local technical college that is roughly 12 miles from the high school. In addition, both institutions have higher rates of dual enrollment participation compared with all high schools located in large suburbs, of which they are a part of. These institutions have also experienced significant shifts in the high school student body towards increased racial diversity and socioeconomic diversity, which are similar to findings in suburban demographic research (Frankenberg, et al., 2016; Frey, 2011; Lacy, 2016). Identifying the factors among the two high schools that have led to sizable rates of participation, which contrast the sluggish overall

participation in large suburban regions, and that have contributed to racial (dis)parity in participation are valuable to similar suburban high schools implementing dual enrollment.

Strand II (qual) Findings

In Strand I (quan), my findings demonstrated racial disproportionality in dual enrollment participation at the state-level, across various geographic locations, and within high schools. In addition, my analysis uncovered that some high schools have insignificant racial disproportionality in participation. Within Strand II (qual), I aimed to build a deeper understanding of these findings by uncovering dual enrollment policy and practice that may contribute to racial (in)equity in participation. I conducted interviews with dual enrollment partners across three levels: the technical college System Office, each of the 16 technical colleges, and the two high schools, Anytown and Falls High Schools, located in large suburbs. I also conducted document analysis of dual enrollment policy and practice materials across dual enrollment partners.

I developed four main themes based on my qualitative analysis. The first theme related to how dual enrollment practitioners and partner entities assigned value to dual enrollment. More specifically, dual enrollment is highly prized and lauded by practitioners and through policy documents as a key mechanism for advancing upward social mobility. This theme contains two subthemes. The first subtheme details the transformative effect dual enrollment participation has on student habitus. As students engage in dual enrollment, the options that seem viable in relation to navigating the field of college and career pathways change. The second subtheme illustrated a connection between cultural and social capital acquired through dual enrollment participation and upward social mobility. Namely, capital acquired through dual enrollment may serve as fuel to propel students as they navigate the field of educational and career pathways.

The second theme related to establishing a commitment to racial equity in dual enrollment. In particular, dual enrollment partners and policy documents revealed an inconsistent prioritization of racial equity, which shaped each dual enrollment partners operations. This theme includes three subthemes. The first subtheme detailed inconsistencies in how leadership communicates a commitment to racial equity. The second subtheme illustrated complexity in the use of data to monitor racial (in)equity in participation and to inform dialogue and collaboration among dual enrollment partners. Finally, the last subtheme described nuanced differences in dual enrollment partner collaborations to advance racial equity in policy and practice.

The third theme illuminated the connections between structural dual enrollment pathways and upward social mobility. More specifically, articulated dual enrollment pathways responsive to labor market needs provide students with a detailed roadmap towards upward mobility. Two subthemes emerged within this theme. First, dual enrollment partners and policy documents illustrated the value of dual enrollment stems from the curriculum which is forged through close partnership with employers and a technical college system philosophy that centers education for employment. The second subtheme built on the first subtheme by illustrating how dual enrollment partners navigate offering a breadth and depth of dual enrollment programming to meet student needs. Further, the second subtheme illustrated the benefits of offering structured dual enrollment pathways with a beginning, middle, and end which provide students an option to deepen their understanding of a particular career across a series of related courses.

The fourth theme detailed approaches to building awareness of dual enrollment and who is prioritized in awareness building activities. Dual enrollment partners are not consistent in how they build awareness of dual enrollment among underrepresented Students of Color. This theme contained two subthemes. The first subtheme related to creating an active and responsive

approach to dual enrollment outreach which prioritized reaching underrepresented Students of Color. Dual enrollment partners and policy documents detailed various approaches to how institutions reach students and how they prioritize, or fail to prioritize, who they target outreach for. The second subtheme related to the concept of opportunity hoarding and establishing systems to ensure students know important details about dual enrollment. More specifically, structures where learning about dual enrollment is mandatory may combat opportunity hoarding and its racialized effects.

Table 11: Strand II (qual) themes.

Theme	Definition
A united belief that dual enrollment propels upward social mobility	Dual enrollment partners consistently articulated the value of dual enrollment as a mechanism to propel upward social mobility due to (i) a transformative effect that shapes student habitus towards college and careers, and (ii) acquiring social and cultural capital that provide advantages in navigating the field of educational and career pathways.
A haphazard commitment to racial equity that shapes how we do business	A nonsystematic commitment to racial equity exists across dual enrollment partners, characterized by an inconsistency in (i) leadership communicating an organizational vision towards racial equity, (ii) data use to monitor racial equity, and (iii) collaboration among dual enrollment partners to advance racial equity.
Articulated dual enrollment pathways as a roadmap to upward social mobility	Structured dual enrollment pathways provide students with a prescribed plan towards upward social mobility due to (1) each pathway consisting of industry recognized technical college curriculum within a technical college credential and (2) a breadth and depth of dual enrollment programming to taste-test different careers and deepen knowledge in a particular career.
A nonsystematic approach to building awareness among underrepresented Students of Color	A priority of advancing dual enrollment awareness among underrepresented Students of Color is not consistent across dual enrollment partners and is shaped by differences in (i) institutional outreach targeting underrepresented Students of Color and (ii) erecting institutional structures and employing expert staff to combat racialized opportunity hoarding of dual enrollment spaces.

A United Belief that Dual Enrollment Propels Upward Social Mobility

Opportunity is synonymous with dual enrollment. Dual enrollment partners at the System Office, the 16 technical colleges, and Anytown and Falls High Schools classified dual enrollment as an “opportunity” to gain exposure to college and careers through rigorous college-level coursework. Early exposure to the postsecondary system familiarizes students with academic processes, systems, language, and expectations. Students develop valuable relationships with college staff and the physical landscape of a college. The state’s technical college dual enrollment programming also provides career exposure. Students acquire industry knowledge, skills, and abilities through industry validated college curriculum that incorporates the use of industry tools, equipment, software, and technology. Dual enrollment also provides integrated experiences with employers that foster student and employer relationships, potentially leading to future employment opportunities and other career benefits. Dual enrollment supports students in becoming a more informed consumer and guide of their future education and career path and saves them time and money as they earn college credit and credentials while in high school. The benefits that students realize through dual enrollment participation come together to provide students significant advantages as they navigate current and future college and career decisions.

The culminating gains of dual enrollment participation propels students towards upward social mobility and opportunity to acquire credentials with employment value. While all dual enrollment partners recognized the value of dual enrollment participation, few fully addressed for whom. When prompted to describe the type of student who belongs in dual enrollment courses, high school participants often noted that all students belong. When asked to reflect on what they saw in statewide dual enrollment participation data disaggregated by race, participants used terms like equity gaps or achievement gaps to describe what they saw. Terms like “equity

gaps” draw attention to racial disparities in access but understate a problem with much larger forces at play which shape college access and outcomes. A consummation of history rooted in unequal treatment by race, economic circumstances that have disadvantaged People of Color, political decisions which have disenfranchised racially minoritized communities, and overt racism have compounded to form an educational playing field that is uneven. In this uneven educational playing field, students and families are largely on their own to leverage the resources at their disposal to successfully navigate the already complex education system. When societal forces have created a system where opportunity to acquire capital valuable in navigating educational pathways is unequally distributed by race, the existence of racial inequities flourishes and perpetuates. In the case of dual enrollment, the stakes are high. Dual enrollment changes lives. Participation in programming can propel student trajectories towards upward social mobility and has the potential to shake-up generational social reproduction. Within this section, I draw connections between my qualitative data and SRT to demonstrate how dual enrollment participation might fuel upward social mobility, which underscores the importance of racial equity in participation.

The Transformative Effect of Dual Enrollment Participation (Habitus)

There is a transformative quality to dual enrollment that morphs student aspirations about their future and what might be possible. Dual enrollment participation cultivates confidence in a student’s ability to traverse the field of college and careers, ignites a student’s desire to pursue college and careers, and ultimately molds a student’s perception of college boundedness and career options. The transformative nature of dual enrollment is nuanced, intersecting with student habitus about college and careers. Bourdieu’s (1986) concept of habitus suggests that there are a set of actions that seem viable for a person to take within a given field. Dual enrollment

participation may expand the set of actions students perceive as viable in relation to college and career decisions.

Dual enrollment participation is transformative. High school students who may have not seen themselves as “college ready” experience changes in their beliefs about college and careers, and ultimately their trajectory in life. **Felicity** is a White, 35-year-old, woman who participated in dual enrollment and has family who participated in dual enrollment. She is a Career Preparation Coordinator at Shouse College and believes that participation in dual enrollment provides a “big confidence boost” in a student’s ability to navigate educational and career pathways. This effect is especially impactful among high school students who do not believe they are “college bound.”

Some students in our high schools don't think that they are college bound. I don't think they have thought that they could do college because no one's said that they could. Dual enrollment helps students to see that college is an option or a certain career is an option. A light bulb goes off like oh, I'm in dual enrollment taking early childhood education college classes. I can keep doing this. I can get a degree and then a job I like.

Felicity’s statements suggest dual enrollment may serve as a guiding light for students who are unfamiliar with college or careers and has the potential to shift students’ college and career aspirations. This transformative effect may be especially impactful among high school students who do not see themselves as “college material.”

Larry of Anytown High School is a White, 33-year-old, man who also believes that participation in dual enrollment builds confidence and competence among learners. He has witnessed dual enrollments positive effects as a student and also as the coordinator of Anytown

High School's dual enrollment offerings. Larry noted that students who participate in dual enrollment have a "mindset shift" to feeling like college and careers may be a viable option. Larry stated, "Dual enrollment students kind of have this mindset shift of.... you know what? If I go to college, I can do well. I took this course, and it helps me feel more prepared for the next step, 'cause it gave me experience in a college course." Larry also noted that participation in dual enrollment builds student competence in selecting a career path that best aligns with their interests. This competence to explore careers stems from acquiring capital through dual enrollment. "I think dual enrollment helps kids get a better understanding of career pathways. What it entails in terms of what they might do for a career, what skills that they need, what they're good at, what they're not good at, and what they're interested in." Students in dual enrollment can explore industries and careers to identify a good "fit" for them and their future. As students find success in dual enrollment, they realize that college enrollment or pursuing a particular career is possible.

To **Midge**, the transformative nature of dual enrollment participation is personal. Midge enrolled in dual enrollment while in high school and has coordinated dual enrollment offerings for Springfield College as a Career Preparation Coordinator for five years. She believes that dual enrollment positively impacted her trajectory and has championed to expand dual enrollment access among students who do not see themselves as college worthy.

I have a close connection to dual enrollment through my own experiences. When I was in high school, which was a really long time ago, dual enrollment wasn't necessarily a thing that was talked about or widely used. But I had a really hard time in high school. I was struggling to go to class. I was struggling to pass my classes. You know, I was a kid who suffered with a lot of anxiety and depression and just really struggled to find my place in

high school. There was a staff member at the high school I attended, and he had this idea that maybe it would be great for me to try something different. He encouraged me to enroll in dual enrollment and he said if I passed the class with a C or better that I would get high school credit for it as well, which would help me then graduate. I was way behind in high school. But I think in his mind, he thought, you know, it's going to give me the opportunity to see what postsecondary education is like, maybe to challenge myself. So, I took a class, and I loved it. I found it interesting and exciting, and it wasn't just, you know, the traditional standard courses that you have to take day in and day out through your high school education. So, it really opened my eyes to what college and postsecondary education was. It also opened my eyes to what I was capable of doing. At that point, I didn't really think that college was an option for me. I didn't even know if I was going to graduate from high school, to be honest. So, I tell everybody every chance that I get.... that one opportunity, that one chance to try something different really changed the trajectory of my life. It gave me a drive that I didn't necessarily have related to college. After that, I was like, hey, I really want to do this, and I think I can. I went to college after high school and then a few years later, started working in education because I wanted to have an impact on people like me who didn't think they were college worthy. I wanted to help others take dual enrollment so they could see what they were capable of. When I look at it from that perspective, I think of dual enrollment as a game changer for those students who maybe don't necessarily think that college is an option for them.

Midge's personal experience regarding the transformative nature of dual enrollment echoed conversations amongst dual enrollment partners. Statements like "a light bulb goes off" or "a change occurs" were used when describing how dual enrollment participation impacted students

who did not see themselves as “college material.” This belief underscores the importance of dual enrollment access among populations historically underrepresented in dual enrollment programing.

First-generation status was often connected to a student’s “college-boundness.” A general belief emerged that dual enrollment participation is particularly impactful among first-generation students, but for two similar and diverging reasons. The first is attributed to a belief that first-generation students are less likely to have college plans due to a lack of family support. In this scenario, conversations about college are nonexistent in the family unit, and dual enrollment is perceived to provide an opportunity where students can acquire the necessary information to chart their course forward. A second reason is connected to the belief that first-generation students have support from their family to enroll in college, but their family is not able to provide the guidance required to help the family’s high school aged children successfully navigate the college system. In this scenario, the family unit encourages their high school aged children to enroll in college, but the family doesn’t have the knowledge or social connections to assist in navigating the postsecondary system.

In much rarer instances, a direct connection to race was formed in relation to a student’s “college boundness.” During these discussions, interviewees identified Hmong, Black, Hispanic, and Latino students as segments of the student body who had the most to gain from exposure to dual enrollment, due to its transformative effects which may disrupt a cycle of generational social reproduction.

Sophie is a 34-year-old, White, woman who did not take dual enrollment in high school and serves as a Career Preparation Coordinator at Hometown College. Sophie made connections

between the transformative effects of dual enrollment participation and historical equity gaps in college access and success.

We have a large and growing population of Latinx students in our district who have historically been underrepresented in college compared with other student populations, like our White students. If we expose them [students historically underrepresented in college] to college opportunities while they're in high school, hopefully we can start closing equity gaps that we see in other college success metrics of, you know, the percentage of students who matriculate into college, who are retained in college, who gain college degrees. Dual enrollment can serve as a catalyst to really support our states educational equity or inequity because it shifts how people think about their future. If we get more Latinx students or any underrepresented group in dual enrollment, I think we will see more go to college and get a credential. This matters because the types of jobs that exist in our communities are requiring the types of credentials students can earn through a dual enrollment program. They can acquire gainful employment at an earlier age and then, if they choose, continue their education and complete an associate, bachelors, and beyond.

Sophie's comments demonstrate a belief that dual enrollment participation positively relates to an increased likelihood of college transitions, stronger college outcomes, and the attainment of employment. These beliefs permeated conversations related to the benefits of dual enrollment, further spotlighting the importance of dual enrollment access and how the transformative effect of dual enrollment on college and career decisions may lead to future success.

Renee, a 55-year-old, White, woman employed at Falls High School shared a similar belief that dual enrollment participation facilitates an attitude that college and careers is a viable option. Renee coordinates dual enrollment offerings at Falls High School, and also made a connection to the importance of ensuring diverse student representation in dual enrollment programming.

I think it helps the students see themselves in college or, like, working in a certain job. And in dual enrollment they work with different ages of people, different genders, and different ethnicities. They might not ever have thought they were college material, you know, or that they could even do a certain career. Seeing others that look like them matters, I think. Students are getting experience on a job site or working with employers. This might be the first time they ever get to do that. And they take trips to colleges in our Academies. It just all becomes more real, I think.

Like her colleagues, Renee believes that dual enrollment helps students to see themselves in college and/or working in a particular job or industry. These activities mold a student's perception of college boundedness and career options, and what might be possible after high school.

Dual enrollment partners shared countless student stories illustrating how participation in dual enrollment shifted student attitudes about college and subsequently positively impacted their longer-term social mobility. In some instances, these positive effects rippled out to impact high school students' social networks. One of these examples was shared by Curly.

Curly is a 40-year-old, Hispanic, woman who works as a Career Preparation Coordinator at Gilead College. Gilead's district includes the largest proportion of Black families within the state and 75 percent of high school students are on free and reduced lunch. Curly shared a

student story detailing the transformative effect of dual enrollment to disrupt generational social reproduction.

A young lady, participated in our IT Dual Enrollment Academy. Very shy...soft spoken...sat in the corner type of student, just kept to herself. So, she participated in the IT Dual Enrollment Academy, and passed with flying colors. A banking company came and visited the IT classroom in the last three weeks of the semester and said if any of you are interested in continuing your education, we would be happy to offer you a job and pay for the rest of your education. So, she took them up on it. She didn't do great in her interview, which is feedback that we were able to give back to her, but they said they still wanted her so bad. So, she went on to work for them, and since then got her own apartment and took her parents out of their one-bedroom apartment. So, she didn't just change her life, she changed her parents as well. She was able to get them out of where they were living and got them closer to better jobs. Her parents were able to get better jobs, and then she finished her education while working and is making like 70 grand right now at the company. Hired before even graduating high school! She's doing fantastic. She's blossomed, you know, she's truly blossomed. She could go so many places.

Categorizing dual enrollment participation as a life changing experience resonated across interviews. High school students are able to acquire social relationships and valuable skills that benefit their upward social mobility. Further, participation is detailed as a transformative experience resulting in students viewing themselves as college and career bound and able to "go so many places."

The transformative nature of dual enrollment is a salient belief among dual enrollment partners. This belief is supported through stories describing dual enrollment participation as a life changing experience that advances upward social mobility. The fuel that propels upward social mobility is connected to the various forms of cultural and social capital that students can acquire during participation in dual enrollment programming. Acquiring capital through dual enrollment not only benefits students as they navigate the space of educational and career pathways towards upward social mobility, but also shifts perceptions of being “college material” and influences future college and career aspirations. Through dual enrollment participation, student habitus related to viable college and career options shifts. Dual enrollment students build their confidence in navigating college and careers, develop aspirations to pursue college and careers, and ultimately morph their perceptions of college and career worthiness.

The Fuel for Upward Social Mobility (Cultural and Social Capital)

Dual enrollment provides high school students with multiple opportunities to acquire cultural and social capital. Acquired capital cultivates advantages as students navigate educational and career pathways, and shapes student perceptions about the viability of future college and career options. The value of capital acquired through dual enrollment is drawn from the technical college’s curriculum, which is employment driven and prepares individuals for full workforce participation.

Within this section, I present an analysis of written dual enrollment course descriptions from Anytown and Falls High Schools to illustrate connections between SRT’s concept of capital and dual enrollment. Written course descriptions were provided in Anytown High School’s **Course Handbook** and Falls High School’s **Career Planning and Course Guide**. Additional written artifacts and interview data are triangulated to further demonstrate the

connections between dual enrollment and SRT, and to demonstrate how access to the technical college systems industry recognized dual enrollment curriculum cultivates an environment rich of cultural and social capital.

Falls and Anytown High Schools offer the same number of dual enrollment offerings; a total of 12 courses offered at each high school. There are similarities and differences in the dual enrollment offerings (Table 12). Both high schools offer courses in business, IT, and healthcare. In contrast, Anytown High School offers courses in construction, woods, and welding while Falls High School offers courses in food service and early childhood education. Both high schools offer general education courses: Anytown High School offers Spanish and Math Reasoning while Falls High School offers a Survey of Physics course. Anytown High School also offers a College Success course to support the transition of learners from high school to college.

Table 12: Anytown and Falls High Schools dual enrollment course listing.

Anytown High School		Falls High School	
Advanced Accounting	Math Reasoning	Business Academy Capstone (12)	Foundations of Early Childhood Education (11-12)
Business & Marketing Management	Principles of Sales & Promotion	Culture of Healthcare (10-12)	Information Technology (9-12)
Certified Nursing Assistant (CNA)	Principles of Marketing	Culture of Healthcare: Healthcare Academy (10)	Information Technology Management (10-12)
College Success	Spanish 5	Entrepreneurship (10-12)	Medical Terminology (11-12)
Exploratory Construction	Woods 1A	Financial Accounting (11-12)	Medical Terminology: Healthcare Academy (11)
IT Essentials	Welding 2	Food Service (12)	Survey of Physics (10-12)

Each institution presents a rich description of their dual enrollment programming. There were several similarities in the course descriptions. First, each description included the logo of the local technical college partnering with the high school to offer the dual enrollment course. The descriptions also included language connected to SRT. Specific connections to SRT include discourse emphasizing opportunities to acquire various forms of cultural capital and opportunities to acquire social capital through relationships.

Cultural Capital

Cultural capital emerged in three different forms within the course descriptions: (1) industry knowledge, skills, abilities, and competencies (KSAC); (2) industry recognized credentials and college credits; and (3) industry tools, equipment, and software. These forms of cultural capital were also prevalent during discussions with dual enrollment partners and throughout each entity's dual enrollment websites.

Cultural Capital: Industry Knowledge, Skills, Abilities, and Competencies

Across the three forms of cultural capital, KSAC was the most prevalent and included in each of the 12 dual enrollment courses offered at Anytown High School and Falls High School. The presented KSACs are often connected to a specific occupation within the text such as “learning ‘out of position’ welding in SMAW, GMAW, FCAW, and OAW” for welders or “[learning] the physical, emotional, social, and intellectual development of the child at various stages” for early childhood education.

Occupation specific KSACs referenced within the dual enrollment course descriptions demonstrates the reach of the technical college system mission. Dual enrollment curriculum is the same curriculum used in technical college credentials. This curriculum is created collaboratively between the technical college and local employers. Employers provide insights

into what KSACs are necessary to successfully perform occupational tasks. For example, in a welding dual enrollment course, students learn how to perform industry recognized welding techniques. These techniques are imbedded within the curriculum and prepare students for employment. Further, the welding techniques within the curriculum are informed by employers who identify the technique as a needed skill to acquire employment.

Marie has 31 years of dual enrollment work experience and leads dual enrollment efforts at the System Office. Marie shared insight into how the state technical college system centers employment-driven curriculum within the technical college system mission.

Our [System] mission is all about providing education that prepares students to find employment. And we make sure our education [curriculum and credentials] is created with employers at the table. Dual enrollment really is no different. We value dual enrollment in our System because it follows that same approach. It [dual enrollment] prepares high school students to find a job or to continue at a college.

Marie's comments demonstrate how acquiring employment driven KSACs is supportive of the technical college mission. The mission of the state technical college system is defined in the legislature and makes direct connections to acquiring industry relevant KSACs. **State Legislature 38.001(1)** reads "The legislature finds it in the public interest to provide a system of technical colleges which enables eligible persons to acquire the occupational skills training necessary for full participation in the workforce." The legislation requires the system to provide occupational skills training through courses and credentials that are supportive of employment. This requirement ensures that all technical college curriculum, including dual enrollment, provides opportunities to acquire KSACs necessary for full participation in the workforce.

General KSACs to support navigating career pathways and finding employment also emerged within Falls and Anytown High Schools course descriptions. One of the more prominent examples is found in Falls High School's Business Academy Capstone course.

Students will also work on their business professionalism, learning the tools to build their personal brand through wardrobe engineering; dining, phone, and email etiquette; networking, workplace professionalism, relationship building and conversational skills.

Life skills also appeared within the dual enrollment course descriptions. For example, in Anytown High School's College Success course participants acquire or refine KSACs that will support their success in careers, education, and "life"; "Practice goal setting and time management, self-motivation, interdependence and accept responsibility for your learning, your life."

Each of the high school dual enrollment partners referred to KSACs that students acquire through dual enrollment participation. During interviews, participants were asked to think about a dual enrollment course offered through their high school, college, or across the state and reflect on the benefits of participation to students. During these conversations, participants made connections to the value of dual enrollment curriculum and suggested this value stems from partnership with business and industry. Participants further expressed that the industry relevancy of dual enrollment curriculum ensures that it provides students with an opportunity to acquire the necessary KSACs that would support their qualifications for a particular job.

Larry of Anytown High School spoke broadly about dual enrollment and noted the importance and value of it being job-aligned. Through this job alignment, students gain KSACs that are valued in the workforce. Larry also believes that non-dual enrollment courses at Anytown High School should be reimagined through alignment with careers.

I think relating dual enrollment to a job is one of the most important things that we do because it gives students skills used in a job. I think sometimes we do a disservice to our students by having all of our courses that are not dual enrollment to not look at the outlook piece in terms of, how does this correlate with students' future goals and aspirations. I think that dual enrollment provides us an opportunity to really dive into what students want to do for a career and college after high school.

Larry's counterpart, Renee at Falls High School, also concluded that the KSACs that students acquire through dual enrollment are industry aligned. She also believes that acquiring skills through dual enrollment opens doors to further education along a career pathway.

We offer a Med Term [Medical Terminology] course. This gets students all the skills, the foundation like skills for the healthcare route to college and employment. So, if they [dual enrollment students] have that here [Falls High School] they could start to do the CNA class at Sandy College and then build on that. So, they started getting the credit here, and now, with them knowing that it's such a high demand area and they have some foundational skills from Med Term, they could do our Healthcare Academy or take courses at Sandy College.

Dual enrollment provides students an opportunity to acquire KSACs that are valuable to navigating career pathways. This value is drawn from dual enrollment curriculum that is occupation and industry relevant. The relevancy of dual enrollment curriculum connects to the state technical college mission of providing the state's workforce with skilled labor. Thus, all dual enrollment curriculum generates its value through close collaboration with employers to co-create curriculum that is responsive to employer needs.

Cultural Capital: Industry Recognized Credentials and College Credits

Cultural capital in the form of industry recognized credentials and college credits also appeared in Anytown and Falls High Schools dual enrollment course descriptions, but at different frequencies. College credits were identified in each of the 12 courses at both schools, with the majority making a direct connection to the partnering technical college. In addition, the local technical college logo was inserted within the text of each dual enrollment description. The presence of the logo could signify a variety of things to students such as the existence of partnership between the high school and college to offer the course or the course serving as an educational pathway to the college from the high school.

Cultural capital in the form of credentials was also present within the text, but less explicitly stated in each of the course descriptions. While the course descriptions include generalized statements like, “you will earn credit toward a [local technical college] associate degree or diploma at no cost,” a direct connection between an individual dual enrollment course and a specific credential was less prevalent. Nonetheless, four of the dual enrollment courses available through Anytown High School and three of the dual enrollment courses available through Falls High School included language connecting the course to a particular credential.

At Anytown High School, the certified Nursing Assistant course is described to include “approximately 70 hours of classroom and lab work time and 50 hours of actual clinical experience,” and at the completion of the course, students “earn a CNA certificate.” The course description assigns value to the CNA certificate through additional language including, “Upon successful certification, the student is able to obtain a job as a CNA anywhere in the state.” In this example, the value of course participation is suggested through positive employment prospects.

The value associated with dual enrollment credentials is also presented in Anytown High School's IT Essentials course. Students who successfully complete the course "will also earn and receive a CISCO IT Essentials certification." The employer reference within the course description suggests a direct connection to industry and recognition from the company. The course description further depicts the value of the course in navigating career pathways through language like, "It is a must have course for anyone going into computer related fields of study that require a computer A+ certification."

Dual enrollment students enrolled in Falls High School's Foundations of Early Childhood Education course are eligible to receive an industry certification at the completion of the course. "This course allows a high school student to become a certified Assistant Childcare Teacher in a licensed childcare center." In this example, the text makes connections between the certification and employment within a "licensed childcare center" and suggests that participation provides advantages to securing employment.

Cultural capital in the form of industry recognized credentials and college credit is also presented across technical college dual enrollment partner websites. For example, on the **College Dual Enrollment Website** of Fenwood College, text reads, "Ahead of the Game: Start a program – or even finish one – while in high school. You're at work or on to college much quicker." In this excerpt, the text suggests that dual enrollment students can earn a credential while in high school and assigns value to the possibility through the text "Ahead of the Game."

A similar text is presented on Sandy College's **College Dual Enrollment Website** detailing the college's various dual enrollment Academies. These Academies package a series of dual enrollment courses within a college credential and scaffold them over a student's high school career. This approach provides high school students an opportunity to earn a college

credential prior to high school graduation while immersing themselves in the technical college community. Each Academy has a two-page **Dual Enrollment Academy Flyer** that includes a section titled “Students Earn” with a listing of the associated credentials a student receives after completing the Academy. The information flyer also includes a pathway map that visually illustrates how the Academy Model credentials align and fit into longer term credentials, also known as “stacked credential models” or “embedded credential models.” For example, in Sandy College’s Tool and Die Making Academy, the pathway includes the following credentials sequential order: a CNC Operator Certificate, a CNC Setup Technician Technical Diploma, a Machine Tool Operation Technical Diploma, and a Tool and Die Making Technical Diploma. In the visual depiction, the number of credits and related job and earnings are presented for each credential in the pathway. This visual “map” illustrates connections between credentials and the labor market. Further, the flyer illustrates how students can navigate towards the next credential in the pathway, potentially leading to career advancement and higher wages.

Participation in high school dual enrollment provides students the opportunity to acquire cultural capital in the form of college credits and credentials. A review of each high school’s dual enrollment course descriptions reveals that credits are awarded at a local technical college while simultaneously counting as high school credit. Receiving college credit through dual enrollment exposes students to college and careers and provides progress towards completion of a college degree. Further, high school students can acquire entire college credentials that are industry relevant through participation in dual enrollment. The momentum of acquiring credits or entire college credentials may be a motivating force for students as they navigate future educational and career pathways.

Cultural Capital: Industry Tools, Equipment, and Software

Cultural capital in the form of industry tools, equipment, and software is evident in five of Anytown High School's dual enrollment course descriptions and three of Falls High School's course descriptions. Nuance exists in the distribution of these three categories by course subject. For example, industry tools and equipment only emerged in trade related dual enrollment courses while industry software only emerged in business and information technology subjects.

Within Anytown High School's Advanced Accounting course, students acquire skills using an industry recognized software program; "Students will complete spreadsheet activities using the McGraw-Hill Connect program." Related to the use of tools, in Anytown's Woods 1A course "students will use layout and measuring tools common to woodworking." The language "common to woodworking" suggests that students in this course acquire experience that may provide an advantage in the woodworking industry. In Anytown's Welding 2 dual enrollment course, students are provided an opportunity to use welding industry equipment: ".... students will learn to use the Gas Tungsten Arc machines for mild steel, stainless and aluminum."

Acquiring cultural capital in the form of industry tools, equipment, and software through dual enrollment was also evident during an interview with Marie of the System Office. Marie shared a detailed example of an employer partnership that resulted in the gifting of industry tools to dual enrollment students participating in automotive courses.

[Local employer] was having a shortage of employees and they were saying, you know, there's got to be a better way to recruit people. So first they went to the technical colleges. The college said, 'based on your needs and based on what's happening in our college, these are the number of graduates that we can get you in a short amount of time.' [Local employer] said 'why can't we get more? Why can't the college speed this up? Why can't

we get more students engaged?’ And the college said, ‘well, some of it is a cost factor. You know, students have to pay tuition, but then they also have to buy the tools.’ So [local employer] was like, OK done, we will buy all the tools for all of the new students that are coming into the program. Each high school student got a fresh set of tools. Then when you [dual enrollment students] finish the dual enrollment courses, you can take those tools with you as you continue at the college or start your career. And if you matriculate to the technical college after high school, [local employer] gifts additional tools to complete the automotive program courses.

Marie stated that this is “one of many examples of employer partnerships to support dual enrollment.” Marie also referenced examples in the culinary industry where dual enrollment students were provided knives required in dual enrollment courses. Students could take the knives with them as they continued their education at the local technical college or started a career after high school.

High school students gain exposure to various careers through participation in dual enrollment. This exposure is drawn from occupationally relevant curriculum that is developed in close partnership with employers. Part of the career exposure experience for students includes the use of industry tools, equipment, and software that is embedded within course curriculum and activities. The collaboration between employers and technical colleges provides assurance to the relevancy of these forms of capital in relation to the pace of change in the industry and provides students advantages as they navigate careers. In addition, it provides high school students with applied experience to align career interests and fit, which may influence navigating future educational pathways.

Social Capital

Dual enrollment provides an opportunity to acquire social capital through various relationships and access to social groups. Relationship based social capital stems from student connections with employers, college partners, student peers, and instructors. These connections serve as capital that provides an advantage to students when navigating the field of educational and career pathways.

Social Capital: Instructors

Students participating in dual enrollment courses have access to trained instructors with knowledge of the industry, careers, and higher education pathways. Within Falls and Anytown High School's dual enrollment course descriptions, reference is made to trained instructors: "The course is taught by a trained [Anytown High School] instructor." The text does not specify what the training entails or instructor qualifications to teach the course content. In addition, instructor training is not explicitly referenced in any of the course descriptions at either high school; instead, it is stated broadly in reference to all dual enrollment courses.

Nonetheless, insights drawn from interviews with staff detail the expertise of dual enrollment instructors, and how social capital acquired through these relationships are valuable to students in navigating educational and career pathways. **Lynn** is a 44-year-old, White, woman supporting dual enrollment partnership at Fenwood College. She works with college instructors and high school instructors to ensure alignment of staff qualifications with course requirements, and provided specific detail to the qualifications and training that dual enrollment instructors receive.

They [dual enrollment instructors] need to have one degree higher than the degree level they are teaching. They need the industry experience. If they don't have the industry

experience, they then need to complete an externship with an employer. They also have to complete new teacher training with a faculty member who is often their mentor. Marie of the System Office also spoke broadly about instructor training and qualifications, stating, “Many [dual enrollment partners] require meetings between the high school teacher and a college mentor teaching the same course. Some [dual credit partners] require the teacher to audit the course at the college. This is very common in Welding.”

Participant comments related to instructor qualifications triangulated with the state legislature to demonstrate congruence. **State Legislature TCS 3.04(2)** details technical college instructor requirements reading:

Each occupational instructor shall have a minimum of 2 years (4,000 hours) of occupational experience in a target job for the program or programs being taught, of which at least 1 year (2,000 hours) shall be within 5 years prior to the date of appointment. One year (2,000 hours) of related occupational experience may be waived if the occupational instructor has at least 2 years of post-secondary teaching experience in the appropriate occupational field within 5 years prior to the date of appointment. Two years of post-secondary teaching experience means 8 semesters of part-time teaching or 4 semesters of full-time teaching at an accredited post-secondary degree granting institution.

Instructors of dual enrollment courses maintain the same requirements as technical college instructors. The legislative requirement of occupational experience is supportive of and responsive to the System’s philosophy of education for employment. The state’s technical college instructors have acquired capital, through occupational experience and their education,

which can be leveraged when delivering instruction. This allows for the passing of capital to students in dual enrollment spaces.

The state legislature also requires the System Office to enact and monitor a Faculty Qualifications System across the technical college system to ensure instructors meet the requirements defined in the legislature. The purpose of the Faculty Qualifications System is documented in **State Legislature TCS 3.05** as “an effort to ensure quality education by establishing minimum systemwide standards for the state’s 16 technical colleges.” Through the Faculty Qualifications Systems, technical colleges must maintain compliance with the legislature’s defined instructor requirements and enact professional development plans that included ongoing instructor development of occupational experience, instructor mentoring, and instructor evaluation. The System Office acts as a partner in this work by establishing how the Faculty Qualifications System is enacted across the system, provides professional development to the state’s technical colleges in alignment with the Faculty Qualifications System, and conducts onsite visits to verify compliance with the legislature related to instructor requirements and the Faculty Qualifications System. Collectively, the Faculty Qualifications System serves as one of the state’s mechanisms to ensure the instructors delivering technical college education are well equipped to provide industry relevant education.

Together, interview statements, text from Anytown and Falls High School’s course descriptions, and the state legislature suggest the social capital students can acquire through instructor relationships may be valuable as they navigate educational and career pathways. This value is drawn from instructor expertise and knowledge of the industry, and the connections instructors have with the local technical college. Further, the qualifications and training that dual enrollment instructors receive demonstrate an intentional alignment with the technical college

education for employment philosophy and ensure that staff delivering instruction have the expertise to uphold the technical college system's mission.

Social Capital: College Connections

A similar implied social connection between students and the local technical college is presented within each high school's course descriptions and was overtly referenced during participant interviews. As previously described, the local technical college logo is inserted within dual enrollment course descriptions at both Anytown and Falls High School. Students may interpret the presence of the logo in many ways, including that the course serves as a pathway to the college.

Missing within the course descriptions was a direct and consistent reference to a technical college credential. For example, in Anytown's Welding 2 dual enrollment course, a reference to partnering Fenwood College is made, but there is no reference to which credentials at Fenwood College the actual course is in. While Fenwood College is referenced in the description, implying the existence of an educational pathway to the college, a clear connection to an educational pathway towards a technical college credential is nonexistent. The inclusion of this information may illustrate to high school students a clearer pathway to college through dual enrollment. Without it, students are largely on their own to make connections between the course and future educational options. This information void may cause confusion, unideal enrollment decisions, or detract students from fully realizing the credit momentum benefits of dual enrollment.

Dual enrollment partnership between the high school and the local technical college also emerged during interviews with Larry and Renee from Anytown and Falls High Schools. When describing a Microsoft Office dual enrollment class, Larry shared students receive memorabilia from the local technical college including "wristbands or water bottles." Interviews with Renee

also revealed that dual enrollment courses are offered at the high school and onsite at the local technical college through Sandy College's Academy model. Access to courses at the local technical college provides a clear connection to the campus environment, college students, and staff who work for the college.

Discourse related to college connections through dual enrollment is also visible on college websites. For example, on Fenwood College's Dual Enrollment Website a statement reads, "True College Experiences: Taking classes on campus, you're a full member of the Fenwood College community." Comments from Marie at the System Office provide additional nuance to the value of social connections between high school students and the local technical college. Marie shared, "Dual enrollment students are treated like a student at the college. They become a student at the college, they get a college ID, access to many college resources, and connections with college staff."

Dual enrollment provides an avenue to acquire social capital through college connections. Dual enrollment students can experience a local technical college like college students who have already graduated from high school. Technical college integration through dual enrollment provides multiple benefits such as access to the physical college environment and various college resources. The acquired social capital through technical college connections is valuable as students navigate educational pathways while in high school and beyond.

Social Capital: Employers

Students participating in dual enrollment are provided with integrated experiences to form social relationships with employers. These employer connections provide advantages to students as they consider careers and enter the workforce. Students build an awareness of employers who hire in occupations aligned with dual enrollment courses, develop a familiarity of

trends in the industry, and form employer relationships that may prove advantageous in securing future employment.

Social connections were explicitly stated in the dual enrollment course descriptions at Falls and Anytown High Schools. Analysis of Anytown High School's dual enrollment descriptions revealed that five of the 12 courses have a reference to employer social capital. Similarly, the course descriptions from Falls High School revealed that four of the courses have a connection to employer social capital.

In the Business and Marketing Management course at Anytown High School, students are provided an opportunity to form social connections with employers; "Business speakers and field trips are used as often as possible to provide real-world application and advice to students." In the Certified Nursing Assistant course, students make connections with employers through "50 hours of actual clinical experience." Value is assigned within the text through the social relationships that build bridges to the labor market and provide advantages for navigating healthcare careers; "Students learn the skills to work as a CNA as well as being exposed to many other health professions."

Larry further described the connections and social relationships that Anytown High School dual enrollment students form with local employers. Larry provided a specific example of local employers giving presentations in dual enrollment courses to discuss trends in the industry related to office technology.

We had employers come into our building and talk about what office technology they were using in the work world. Some kids were wondering why they were learning Microsoft Office when the school is a Google school. What employers shared with kids

was that like 70% of businesses are still using Office. This helped to show the course is relevant to the kids and also built a connection to those businesses in the community.

Larry also noted that these connections are valuable to dual enrollment students because employers reaffirm that the content in dual enrollment courses are valuable to the industry. In addition, formed relationships with employers can lead to internships or future employment.

The employers tell the kids the content is valuable, and some kids build relationships with employers for internships or employment too. That connection may be formed, you know, if they're really, truly interested in going into some sort of field or industry that that company associates with.

Social capital in the form of employer relationships also emerged in Falls High School's course descriptions. In the Culture of Healthcare course, students are exposed to the healthcare environment through a series of course activities that involve employers, "A job shadow, blood drives, speakers, and field trips enhance the students' experience." Integrating employer connections into dual enrollment courses both supports the mission of the state technical college system and exposes students to the employment landscape they might navigate in the future.

One of the most integrated approaches of acquiring social capital in dual enrollment through employer relationships emerged in Falls High School's local Career Academies. A requirement of the multi-year Academies is forming connections with local employers. These connections may include job shadows, actual employment, company visits, or companies delivering presentations in dual enrollment courses. A full description of Falls High School's Academies is provided in future sections.

Social relationships with employers are vital to the mission of the technical college system. A system that prides itself on being responsive to industry needs by delivering industry

relevant curriculum requires intentional and ongoing employer partnership. Through dual enrollment, this relationship is extended further. Not only do dual enrollment students benefit from industry relevant curriculum, but they also benefit from social relationships with local employers through integrative opportunities like company presentations, company visits, and internships. These opportunities provide value to high school students as they navigate pathways in high school and beyond.

Social Capital: Students

Dual enrollment courses provide students opportunities to create social relationships with each other. Social relationships with fellow students can form in multiple ways. High school dual enrollment students can form student-to-student relationships in the classroom and outside of the classroom.

Students participating in dual enrollment courses engage with one another around a similar topic within the classroom. Students learn together and collaborate in course activities that are specific to a dual enrollment course subject. One of the more immersive ways students can form relationships with one another in the classroom is through active learning opportunities. Within Falls High School's Entrepreneurship dual enrollment course, students work together to develop a business; "On a team, you will engage in an authentic learning opportunity where you develop, plan, and market a real product or service to practice first-hand what an entrepreneur experiences in starting and running a business." Through industry relevant and active learning opportunities, students collaboratively hone their skills to understand careers by applying dual enrollment learning.

Aside from the time dedicated to learning in the classroom with other students, dual enrollment students are encouraged to join or are automatic members of various external student

organizations. Student organizations are tailored to a particular topic and provide students an opportunity to forge relationships with one another.

A total of three student organizations emerged within the dual enrollment course descriptions at Anytown High School. Examples include Distributive Education Clubs of America (DECA) and Future Business Leaders of America (FBLA), which are designed for students interested in marketing, business, and leadership. Each of the business-related courses, including Advanced Accounting, Business and Marketing Management, and Principles of Sales & Promotion, make references to these organizations; “Students that take this course are strongly encouraged to join the DECA & FBLA student organizations.” The third student organization represented in the text made reference to the benefits associated with organization membership in relation to navigating “college and careers.” In the Welding 2 course, the text reads,

....the student is an automatic member of the FFA and entitled to participate in all FFA events and activities of their choice. The student will be required to develop a Supervised Career Experience (SCE) record. This will require students to explore careers in the following ways: volunteering, shadowing, researching, gaining employment or entrepreneurship. From these experiences they will document hours and build skills to better prepare students for college or a career.

In contrast, Falls High School’s dual enrollment course descriptions did not include reference to any student organizations, but were noted within the high school’s Career Academies. A total of five academies are offered at Falls High School, each aligned with an “in-demand field” such as healthcare or business. Students engage in these four-year Academies through a cohort that begins freshman year. A cohort approach allows students to form valuable connections with each other while exploring similar industry focused curriculum and

extracurriculars, such as company and college visits. A more comprehensive description of Falls High School's Career Academies is provided in future sections.

Dual enrollment provides high school students an opportunity to form a sense of community with each other. Students learn alongside one another and learn together through applied learning in the classroom. Students also engage in external learning opportunities through class field trips and student organizations. Common among these activities is a focus on college and careers. As students acquire capital that is valuable in navigating career and educational pathways, they also forge relationships with one another that may also be valuable as they consider their future college and career plans.

Saving Time and Money

Saving time and money is a valuable benefit to dual enrollment participation. Interview transcripts and written dual enrollment materials were saturated with references to the financial and time savings dual enrollment provides students. By getting a “jump start” on college-level courses early, high school students can acquire college credits prior to high school graduation and at no or limited cost.

Reference to fiscal and time savings were coupled with one another and often presented within the same sentence or statement. In reference to financial savings, the text often included language like “no cost to the student” or “free.” Rarely was a quantifiable figure placed on fiscal savings. Reasoning for the diverging approaches may relate to the audience the message is intended.

At the 16 technical colleges, whose audience is often students, reference to fiscal savings is used as marketing jargon. For example, on Fenwood College's Dual Enrollment Website, text includes, “Save \$\$\$: Even though you're taking classes at Fenwood College, they're free to you

– paid by your high school!” and “Save \$\$\$: College credits taken in high school are paid for by your school district. They’re free to you!” In contrast, the System Office calculates and publishes a dollar savings to dual enrollment participation. The annual **Dual Credit and K-12 Partnerships Report** notes, “[State name] high school students saved over \$36.8 million in college credit in 2021-22,” resulting in an “Average savings of \$643.14 per student.” Marie from the System Office shared that the fiscal savings to high school students and their families is “huge” to state advocacy and a data point discussed during sessions with the state legislature.

The time savings associated with dual enrollment participation emerged in various ways. During interviews, participants often stated that dual enrollment “saves students time” or provides “early entry” to pathways. Statements like these are also published in written dual enrollment documents. More prevalent though, is how dual enrollment actually saves time through enrollment in a single course that counts towards a high school requirement and a college credential. For example, text in Falls High School’s course descriptions reads that dual enrollment courses “allow high school students to take college courses at their high school and earn both college credit and Falls High School credit.” In examples like these, a description of how dual enrollment saves time is illustrated rather than simply stating that participation saves time.

One of the benefits of dual enrollment is that it saves students time and money. Engaging in college-level courses that are “free” and integrating course participation into an existing high school schedule provides students with early-exposure to college and careers. Students can build momentum towards a degree or career while simultaneously completing requirements towards their high school diploma.

A Haphazard Commitment to Racial Equity that Shapes How We Do Business

A commitment to racial equity in dual enrollment access is not systematic across the state's dual enrollment partners. Some institutions have clearly established a commitment which centers racial equity across their dual enrollment operations. Some dual enrollment partners maintain a largely race neutral approach to prioritizing racial equity in dual enrollment access, resulting in an environment that does not fully realize the benefits of what could be. A commitment to racial equity in dual enrollment may be one of the first steps to establishing systematic and comprehensive dual enrollment policy and practice that is responsive to how students "show up" in the education system. More specifically, a commitment to racial equity acknowledges the history that has shaped an uneven playing field by race and prioritizes policy and practice that aims to level the playing field and disrupt generational social reproduction.

Within this section, I focus on the experiences of dual enrollment partners to illustrate some of the common features supportive of a commitment to racial equity. I center my illustration on the actions of the System Office, Shouse College, and the high schools Shouse College collaborates with. While this is just one illustrative example of a commitment to racial equity at work, it demonstrates how this commitment has a ripple effect across dual enrollment partners, ultimately shaping dual enrollment operations.

Leadership Communicates a Commitment to Racial Equity

Leadership across the state are not united in communicating a commitment to racial equity in dual enrollment access. When in place, leadership communicating a commitment to racial equity sets a tone for the institution. Leadership acts to advance a vision for dual enrollment where racial equity is a priority and resources will be invested to move the priority

forward. This vision acknowledges the concept of racial equity and defines what it means to the organization.

The System Office communicated its commitment to racial equity through a statewide priority coined as the Commitment to Progress. According to the System Office **Commitment to Progress Webpage**, the priority strives to eliminate systemic racism through five leading efforts that include: (1) sustained conversations on systemic racism and policy reform; (2) a focus on equity in student access and success; (3) the use data to close equity gaps; (4) the review of hiring and retention policies; and (5) increased transparency of communication regarding equity and inclusion initiatives and outcomes. Each of the technical colleges are supportive of the Commitment to Progress, and this support is documented through technical college President statements. While each technical college's leadership has confirmed a commitment to racial equity, in a more global sense, discussions with dual enrollment partners reveal that institutions, technical colleges and high schools, are at a different place in solidifying a commitment to racial equity in dual enrollment. Some interviewees stated racial equity in dual enrollment access has been communicated as a priority, while others more broadly stated that dual enrollment access has been communicated as a priority for "all students."

It is important to note that leaders communicating an institutional commitment to racial equity is not required to enact policy and practice that is equity minded. Each of the dual enrollment partners within my study have enacted policies and practices supportive of racial equity in dual enrollment access, some knowing and some not knowing. Rather, when leaders communicate messages about racial equity, it sets a tone for the institution that guides current and future operations.

At the System Office, Marie leads statewide dual enrollment efforts and communicates dual enrollment priorities across the 16 technical colleges. Marie also works closely with the state K-12 System Office to coordinate alignment of initiatives and build awareness of technical college dual enrollment. Marie provided insight into the ways the System Office has contextualized the Commitment to Progress to dual enrollment and communicated this across stakeholders. She shared that access to dual enrollment is the top priority across the technical college system, aligns with the system's open-access mission, and connects to educational equity.

Ensuring access to dual enrollment fits in nicely with what we do as a regular practice across the System.... equity across the System in all programs, all areas, you know, all students should have the right to an education. And so, I think we really try to parallel that with dual enrollment, all students should be able to have access to dual enrollment while in high school. I also think from a System approach we really focus in on equity and this can trickle down to the colleges to say 'here's what we're doing, how are you going to contribute to this?' I think that's a huge resource.

Marie was asked to describe what was meant by "equity" in relation to access. Marie described that this included the removal of barriers to participate in dual enrollment and providing support to encourage participation. Related to the removal of barriers, Marie used terms like "open-access" to echo her statement that "all students have a right to education." Marie stated,

Things like GPA requirements or good academic standing are not considered to take dual enrollment. It is open access like us [the technical college System]. Everyone has the opportunity to enroll. It is different from other college courses in high school. Advanced

Placement has some requirements to take the courses, but not [the technical college System] dual enrollment.

Marie has intentionally and strategically communicated the System Office's commitment to racial equity in dual enrollment. Marie coordinates twice per year System Called Meetings that bring together the Career Preparation Coordinators across the 16 technical colleges and staff from the state K-12 System Office. During one of these meetings, Marie shared an overview of the Commitment to Progress and facilitated discussion with practitioners to help them build connections between the Commitment to Progress and dual enrollment.

We discussed dual enrollment and the Commitment to Progress at my System Called Meeting after the Commitment to Progress was announced. I think this is helpful because communication does not always reach all staff when sent to one person. My System Called Meetings allows me to reach my group [Career Preparation Coordinators] with important information that pertains to them. So, we talked about the Commitment to Progress and what it meant to dual enrollment. Really, we need to focus on access and race and success and race. How can we get students on a pathway and through a pathway. In dual enrollment we call it early entry to a pathway. I cannot tell my group [Career Preparation Coordinators] exactly what they should be doing day to day, but I can plant seeds. I can build awareness and, like I said before, this can trickle down for my group to think about what it means for them.

Marie also drew connections between the Commitment to Progress and how the system has invested and continues to invest resources in dual enrollment access. These investments are in direct alignment with the Commitment to Progress and the System Office's focus on racial equity.

So, I actually oversee multiple categories of federal and state grants. These grants can be used to support career exploration for students and transitioning students to college through dual enrollment. Our office writes those grant categories, scores those grants, and award the funds. So, we get to identify what a focus might be when we write the grant application requirements or what the funds can be spent on. All of the grants have a focus on serving underrepresented populations and the colleges have to use data to show us that need. I think that is huge. We can use these grants to guide the colleges to focus on certain things or make connections to priorities like the Commitment [to Progress] or career pathways or whatever.

Marie shared other ways the System Office invests resources supportive of the commitment to progress including providing professional development and access to data. These activities demonstrate that the System Office not only prioritizes racial equity but has contextualized that priority to dual enrollment and offering system leadership to move it forward.

All 16 technical colleges had representation at the System Called Meeting when Marie presented the Commitment to Progress. Yet, not all of the Career Preparation Coordinators were able to build connections between the System Commitment to Progress and dual enrollment. More specifically, what racial equity looks like in dual enrollment. This concept creates tension with Marie's statements about a "trickle down approach" to communication and suggests that deeper, reflective work among staff across dual enrollment partners may be necessary to build connections between racial equity and dual enrollment. One institution that built connections between the Commitment to Progress and dual enrollment is Shouse College. Shouse College staff who attended Marie's presentation on the Commitment to Progress absorbed the

information and took direct action to spread the word about racial equity in dual enrollment across the college community.

According to Shouse College's public website, the college began over 100 years ago as the nation's first publicly funded technical college. The institution offers more than 70 academic programs and serves over 16,000 students annually. Shouse College partners with over 25 district high schools to extend dual enrollment access. Greater than 6,000 students participate in dual enrollment annually across a diverse mix of courses such as Culinary Skills, Business Law, Foundations of Early Childhood Education, Metal Fabrication, Horticulture, and JAVA Programming. The college also offers general studies dual enrollment courses including Applied Technical Math, Speech, and Writing Principles.

Shouse College's district is located outside of one of the state's principle urban cities. Data from the US Census reveals that the college's district population, age 18 to 64, in 2021 was primarily White (80%), and has a growing Hispanic or Latino population (12%) and Black population (6%). The proportion of Hispanic or Latino and Black populations enrolled at the college's suburban high schools is much greater. Table 13 presents student characteristics among two of the largest suburban high schools in Shouse's district. Neither high school is a predominately White serving institution, and both serve a student majority who are economically disadvantaged. Shouse College has experienced a narrowing of racial disproportionality in dual enrollment participation across these suburban high schools, as well as many others. Across the state technical college system, Shouse College and their high school partners serve the highest number of Black, Hispanic or Latino, and students who identify as more than one race in dual enrollment programming compared with the other 15 technical colleges.

Table 13: Shouse College's largest suburban high school student characteristics (2021).

	High School A		High School B	
	N 1,796	%	N 1,375	%
American Indian/Alaskan Native*				
Asian	30	1.7%	9	0.7%
Black or African American	436	24.3%	258	18.8%
Hispanic or Latinx	452	25.2%	496	36.1%
White	821	45.7%	547	39.8%
More than one race	55	3.1%	59	4.3%
Native Hawaiian or Pacific Islander*				
Economically Disadvantaged	970	54.0%	921	67.0%
Not Economically Disadvantaged	826	46.0%	454	33.0%
Female	899	50.1%	652	47.4%
Male	897	49.9%	723	52.6%

*Data suppressed due to small sample size

A tangible representation of Shouse College leaders communicating a commitment to racial equity is illustrated in the college's **Dual Credit Equity Report**. The report's creation was prompted by discussion about the Commitment to Progress at Marie's System Called Meeting. Shouse College's Dual Credit Equity Report presents a vision for racial and gender equity in dual enrollment, incorporates a series of data points spotlighting racial and gender (in)equity in participation for each high school in the college's district, and identifies strategies for promoting gender and racial equity in dual enrollment access. The report begins with a written commitment for advancing equity in dual enrollment access. The opening message is quoted to the college's Vice President of Student Services and Enrollment Management.

Shouse College serves an amazingly diverse student body and continues to focus on creating equity-based educational offerings and opportunities for our students and communities. Together with you, our high school partners, we want to examine equity in

student access and outcomes beginning with our dual credit work. As you know, students and families are increasingly interested in the ability to earn college credit while still in high school – saving time and money. Motivated students are now earning not only credit from Shouse College while in high school but earning credentials before high school graduation. This Dual Credit Equity Report is the first of many steps to begin a conversation around identifying existing gaps in dual credit access and working together to create equitable opportunities. Let's work together to provide this opportunity to more students, in particular to underrepresented students in our dual credit work. We look forward to our continued partnership to become equity-minded practitioners and provide the gift of higher education to many more deserving students.

The opening text of Shouse College's Dual Credit Equity Report couples the value of dual enrollment through statements like “saving time and money” with aspirations for “equity in student access.” Delivered by a college senior leader suggests that the perceived value of dual enrollment and importance of equity in access is a priority for the institution. The report further details “who” equity in student access is for, i.e., “underrepresented students in our dual credit work” which the report qualifies through constructs of race and gender.

Shouse College leaders communicate their commitment to racial equity with others. As Felicity of Shouse College shares, this action sets a vision for the college that is understood by stakeholders within and outside of the college.

Our leadership gets it [equity in dual enrollment]. They talk the talk and walk the walk. And they talk about it with others so they can walk the walk too. We use the report as a way to, you know, reach others with our work [focus on equity in dual enrollment] and to really document our dedication to equity. Once they get it [report], and see that our

leadership cares about it, they might start thinking about how they fit in and can support it too.

When leaders communicate a vision for racial equity in dual enrollment access across multiple stakeholders, the potential for impact grows exponentially. There are deeper considerations to this concept. Like Marie's statements about a "trickle down effect" of communication, the concept of racial equity requires individual staff reflection to understand how individuals contribute to racial (in)equity at the institution. As Felicity details, Shouse College leaders communicate their vision for racial equity to key partners throughout their college district.

Our leadership and college wants to get everyone onboard. Especially our partners in dual credit. We do lots of presentations on it [equity in dual enrollment] and talk about our report. Our President had us talk about the report with the College Board so they understood this was a priority. We also presented it at our High School Administrator Meeting. This was huge because principals and superintendents [in our college district] got to see and talk about dual credit in a new way. Most of them get the benefits of dual credit, but we never talked about which students were accessing it and which ones weren't. We also shared the report at a High School Counselor Lunch n' Learn and with other technical colleges at a System Called Meeting [coordinated by the technical college System Office]. We just really want to get the word out...that this is something we care about.

Communicating a commitment to racial equity in dual enrollment access with those who have the ability to influence dual enrollment policy and practice may be a strategy for change. Felicity

shared a series of benefits stemming from leadership communicating the college's commitment to racial equity, and why audience matters.

When staff at our college hear about different things.... priorities from leadership, they perk up. They see it is something we should care about. It becomes a focus, you know. This has given us a lot of different things. Like publishing our Dual Credit Equity Report. That costs money. Also getting it in front of our College Board. It gets more attention from different audiences, and it starts to change our culture. And that culture helps us think about our work in a new way.... at the college and with high schools. We really think...who do we want to serve and what needs to change so we can serve them. And when everyone gets it, the impact can be big.

Data Use to Monitor Racial Equity

Dual enrollment partners committed to racial equity are data-savvy. They use data to identify historical trends in dual enrollment participation and disaggregate the data to identify nuanced insights that can inform future actions. These institutions also use data to communicate their commitment to racial equity and establish measurable goals related to dual enrollment access and success. Further, dual enrollment partners committed to racial equity establish a business process to routinely share and review dual enrollment data, monitor their goals, and use data to guide iterative changes for improvement.

The technical college system is data rich. Each of the 16 technical colleges are responsible for collecting student-level, dual enrollment data and reporting these data to the System Office. Technical colleges work in concert with area high schools to collect data and ensure completeness of student information, course enrollments, and course outcomes. Technical

college staff report student-level dual enrollment data to the technical college System Office throughout each academic year, which are used to inform statewide strategic actions.

The System Office has developed a series of mechanisms to incentivize technical college collection and reporting of dual enrollment data. The System Office uses dual enrollment data to distribute technical college funding. For example, the technical college system's outcome-based funding model incorporates a dual enrollment participation measure. The System Office also uses dual enrollment data to support advocacy with the legislature and provide evidence for future needs in the state biennial budget process. System Office staff have also transformed dual enrollment data into an interactive dashboard which gives technical college stakeholders dual enrollment analytics related to equity in dual enrollment access and success.

Marie believes that data plays a vital role in the technical college systems Commitment to Progress and racial equity in dual enrollment. She states, "We have to make data driven decisions and the colleges have to make data driven decisions and the high schools too." Being data-informed practitioners is amplified by the System Office's commitment to racial equity and has spawned externally facing data reports that monitor progress in achieving racial equity in dual enrollment participation. Each year, the System Office harvests dual enrollment data reported by the 16 technical colleges to populate in their Dual Credit & K-12 Partnerships report.

We create an annual report on dual enrollment in our System. I used to have ideas about what was happening...with the data it is clearer. So, in the infographic we have data, like, students enrolled, cost savings, equity pieces with participation, and the number of high schools offering dual enrollment. These are all data that we look at to see what [dual enrollment] access looks like. We want to see more high schools offering dual enrollment and more students taking dual enrollment.

One of the more prominent features of the report is titled “Dual Credit Participation” which includes a five-year comparison of dual enrollment participation rates. The data is disaggregated by gender and race. Marie was asked to describe how these data relate to the System Office’s Commitment to Progress. Marie stated:

The dual enrollment participation rates and equity pieces directly map to our Commitment to Progress. One of the five efforts of the Commitment to Progress relates to using data for access and success. Dual enrollment by race shows this. We can see, and others can see, if we are moving the needle on access. And we do this every year. We create the report each year and we share it out. We share it at my System Called Meetings, with our K-12 partners, and the legislature.

The System Office uses data in alignment with their commitment to racial equity. In contrast, institutions without a commitment to racial equity use data in a very different way. Some generate and review dual enrollment access data by race but are unsure of what they should do when (in)equities in participation emerge in the data. During participant interviews, nearly all dual enrollment partners were unable to communicate examples of how they have used dual enrollment participation data by race to guide discussions among dual enrollment partners or spotlight further investigation into what might be shaping racial (in)equity in participation. Instead, many interview participants detracted and shifted the conversation to other student constructs like participation by gender in dual enrollment associated with non-traditional occupations.

Shouse College uses data in alignment with a commitment to racial equity in an intentional way. The institution uses data to elevate why a commitment to equity in dual enrollment access is necessary. The college’s Dual Credit Equity Report centers race and gender

as the two primary student characteristics the institution is prioritizing equity. At Shouse College, one quarter of all high school students in the college's district participate in dual enrollment. During the 2018 academic year, the college reported an 18.7% underrepresentation of Students of Color in dual enrollment courses. This rate drastically narrowed to a 6.5% underrepresentation of Student of Color during the 2020 academic year. In reflection of these data, the institution makes it clear within the college Dual Credit Equity Report that there is still work to do.

Shouse College is committed to providing all high school students opportunities to earn high school and college credit at the same time. Over the past three years, we have seen an increase in dual credit among our district high school students. We are excited about the growth of dual enrollment opportunities and want to ensure that there is equitable access for all students. Shouse College is striving to close the gap between overall enrollment and enrollment of female and underrepresented students [Student of Color] in dual credit programs to no more than 5 percent.

Shouse College's establishment of a clear and measurable dual enrollment access goal is unique among the 16 technical colleges. During interviews, each of the Career Preparation Coordinators were asked if their institution created a goal related to dual enrollment access. The majority of interviewees noted that their goal was to increase participation, but by how much and for whom was not specified. Through Shouse College's commitment to equity in dual enrollment access, a goal to grow dual enrollment is established and a focus of who dual enrollment access should be extended for is codified.

Shouse College operationalizes their commitment to racial equity in dual enrollment access strategically. Within the college's Dual Credit Equity Report, the institution disaggregates

dual enrollment participation data by high school to seamlessly identify which institutions have and have not made progress in achieving their college's dual enrollment access goals. The college collaborates with their Institutional Research department to update the report every three years. The updated report is used as one mechanism to monitor progress in achieving their dual enrollment access goals related to race and gender.

A commitment to racial equity is not necessary to use dual enrollment data strategically. Dual enrollment partners across the state use dual enrollment data to strengthen their programming. Rather, when the institution enacts a commitment to racial equity, the commitment influences dual enrollment operations including the ways the institution uses data. When this commitment is missing, a guiding light towards racial equity is dimmed and data use is comparatively haphazard and/or ineffective.

Collaboration among Dual Enrollment Partners to Advance Racial Equity

Dual enrollment partners must buy-in to racial equity in dual enrollment to fully realize an encompassing commitment to racial equity. Developing a shared commitment must be cooperative. Disciplined and ongoing collaboration across dual enrollment partners is necessary to reach mutual understanding of what racial equity in dual enrollment means and looks like. When this is realized, dual enrollment partners collaborate and pool resources to support racial equity in access.

Shouse College collaborates with each of their area high schools and high school administrators to build a universal understanding of their commitment to equity in dual enrollment access. The college employs six staff members who support dual enrollment administration and lead efforts to expand dual enrollment access through close partnership with

area high schools. These staff champion the college's vision, at the ground level, through focused and ongoing discussion about equity in dual enrollment access with their partners.

Shouse College's Dual Credit Equity Report sets a vision for racial equity in dual enrollment that is communicated by college leadership. The report includes a defined purpose of dual enrollment and its value to students and their families. Further, Shouse College acknowledges the existence of racial inequity in participation. In response, the institution set a clear goal to increase dual enrollment while narrowing differences in participation rates by less than five percent across races. A message from Shouse College's Vice President of Student Services and Enrollment Management names high schools as a key partner in their dual enrollment equity work, "Together with you, our high school partners, we want to examine equity in student access and outcomes beginning with our dual credit work." These practices culminate into a shared vision that requires partner collaboration and sets expectations which center racial equity in dual enrollment.

One way Shouse College partners with area high schools in their vision towards racial equity is through routine data review. Text within the college's Dual Credit Equity Report reads, "Data helps Shouse College and partnering high schools advance equity in high-quality dual enrollment programs." College staff retrieve administrative data and calculate dual enrollment participation rates by high school. The institution disaggregates the data by race and gender and publishes the figures within their Dual Credit Equity Report. Data are reviewed in a collaborative fashion at high school administrator meetings and used as a facilitation tool to discuss the current and past state of dual enrollment access. Felicity, a Career Preparation Coordinator at Shouse College, believes that the collaborative review of data presented within their report is a "great starting place to begin important conversations about dual credit access." Felicity shared that

when the administrators get in the same room to review their data, “....the administrators get pretty competitive.” Felicity believes that reviewing the data in an open and collaborative manner helps high school partners think about where they have been and how they might contribute to achieving Shouse College’s goal of growing dual enrollment participation while narrowing differences in participation rates across races to less than five percent.

A shared commitment to racial equity in dual enrollment participation comes with a series of expectations that inform how partners do business. Shouse College clearly articulated five expectations that guide dual enrollment operations, and these expectations are responsive to their institutional commitment to racial equity. Felicity shared that these five expectations are for “high school, district, and college leaders to ensure that traditionally underrepresented students in our dual enrollment have equitable access to dual enrollment programs in the future.” The five expectations for dual enrollment partners are documented in Shouse College’s Dual Credit Equity Report to include:

1. Leadership focuses on diversity, equity, and inclusion.
2. Shouse College offers student orientations to increase awareness of support systems and resources, provide support for teachers, increase course offerings, provide dual enrollment materials in Spanish, maintain free offerings for students, and remove transportation barriers.
3. Dual enrollment students will have access to New Student Specialists at each high school and college support systems such as access to tutoring and disability services, and an articulated pathway map that highlights sequencing of dual credit opportunities.

4. High school instructors partner with Shouse College instructors to share resources and curriculum to help students earn credentials before graduating high school. Shouse College instructors are available to teach courses at the high school through contracted services.
5. Foster dual enrollment partner collaboration and develop relationships through participation in monthly meetings with high school partners, bi-annual counselor meetings, and bi-annual administrator meetings.

Felecity provided specific examples of how Shouse College's "expectations" for dual enrollment partnership played out to benefit dual enrollment access. One example included providing transportation so students without it could participate in dual enrollment offered on Shouse College's campus.

Supporting transportation to come to our college campus is a way to increase access. Sometimes a high school cannot offer a course locally, so they partner with us and we teach the course here. I will tell you, one of our high school districts, two years ago, started transporting their students to our college. They took that on and coordinated a bus for students to participate in our high school Academy in welding. Providing that transportation fills that gap. It also helps students who wouldn't have transportation, even if they had a license.

In Felicity's example, the high school providing transportation was unable to offer welding courses at their high school due to staff qualifications, physical space, and availability of equipment to deliver course instruction. To fill this gap, Shouse college extended access to a welding Academy that structures a series of dual enrollment courses into a welding pathway. To

further support access, the high school coordinated transportation. Together, these actions shifted the composition of students participating in Shouse College's welding Academy. Prior to the availability of provided transportation, 100% of welding academy students identified as White. In the first-year transportation was provided, 60% of welding academy students identified as White and 40% identified as Hispanic or Latino. The act of providing transportation is especially relevant within suburban communities. High schools located in suburban regions of the state have limited or no access to public transportation. Enacting transportation solutions to access technical college dual enrollment courses provides high school students with an opportunity to engage in dual enrollment pathways and immerse themselves in a new social environment at a college campus.

A commitment to racial equity, like Shouse College's, shapes how dual enrollment partners engage and do business together. In its absence, partnership may not recognize or aim to intentionally rectify the uneven playing field systemic forces have forged by race. Instead, a commitment to racial equity acknowledges and seeks to address racial inequity through a shared vision and partnership. Further, when expectations about racial equity are enacted to guide current and future dual enrollment programming, it extends a commitment to racial equity beyond a performative action and solidifies what each institution will do to support dual enrollment access among underrepresented communities. While a commitment to racial equity isn't necessary to foster collaboration across dual enrollment partners, it serves as a vehicle to unify high schools and technical colleges as they work to enhance dual enrollment access and strengthen student participation.

Articulated Dual Enrollment Pathways as a Roadmap to Upward Social Mobility

The technical college system operates under an education for employment philosophy which shapes its partnerships with employers and its educational offerings. Technical college credentials and curriculum are industry recognized and the same curriculum used in dual enrollment courses. When these courses are organized into structured dual enrollment pathways, they provide students with a roadmap to upward social mobility with opportunity to “taste-test” careers and deepen knowledge within a career across various related courses. Together, industry validated offerings structured into articulated dual enrollment pathways may be a lever to lifting generational social reproduction which has disadvantaged People of Color, first-generation students, economically disadvantaged populations, and their intersections. When synced in harmony, students can engage in a pathway toward upward social mobility where they know which courses to take and in what order and that the courses they are taking are valued by employers.

Industry Recognized Dual Enrollment Pathways

Offering dual enrollment for the sake of checking a box is not enough. To fully realize the transformative effects of dual enrollment, disciplined and intentional creation is required. Dual enrollment, which advances upward social mobility, must provide advantages to students as they navigate current and future educational and career pathways. These advantages are formed through copious opportunities to acquire social and cultural capital in dual enrollment courses. A vital way the technical college system ensures its curriculum promotes upward social mobility is by confirming it is industry recognized through a career pathways framework. To comprehend the value of industry recognized dual enrollment pathways, an understanding of technical college system processes and employer partnerships is required.

The state technical college system structures its work, partnerships, and programs into a career pathways model, which creates an efficient, customer-centered approach to education and training. Career pathways are designed to meet an individual where they are and guide them through the learning and credentialing journey with the resources they need to arrive where they want to be. Building, promoting, and sustaining meaningful pathways requires ongoing collaboration across all stakeholder partners, including the various industry sectors and employers across the state, the secondary system, and the higher education system.

A prominent feature of the state technical college system's career pathways is the development of industry recognized curriculum. This curriculum is the same curriculum taught in dual enrollment courses. State employers play a vital role in the development of technical college curriculum and credentials. The System Office's **Educational Services Manual** reveals that each technical college credential must be fully vetted through a labor market needs assessment and concept investigation. The development process includes the collection, analysis, and synthesis of data from employer focus groups, surveys, occupational projections, and environmental scans.

Before credentials and related curriculum are created, the state technical colleges must gain approval of each proposed credential through a concept investigation. The System Office has established a process that requires colleges to investigate and document the need of any state approved credential. Technical colleges must complete a **Concept Approval Criteria** form, which is sent to the System Office staff for review and approval. Within the Concept Approval Criteria form, technical colleges are prompted to provide various information including occupation titles, occupational projections, and salary data for jobs in direct alignment to the credential they are proposing to develop. Further, colleges are required to provide a "Summary

of analysis of how this program supports employment demand.” The Concept Approval process is one of the ways the state technical college system operationalizes its philosophy of education for employment. Before a credential can begin to be created, it must be investigated to ensure there is labor market demand within the colleges district.

Once a technical college gains approval through the Concept Approval process, they must then gain approval to offer a credential and its related curriculum through the Program Approval process. Within the Program Approval process, technical colleges are required to investigate and document features of the proposed credential and its curriculum. A **Program Approval Form** is completed and sent to System Office staff for review and approval. Technical colleges are required to respond to a series of prompts such as providing a “Description of the pathway and laddering opportunities”; “Summary of the benefit/cost to district stakeholders”; and “Plans for quantitative and/or qualitative assessment.” Further, technical colleges are required to provide plans for “equity-mindedness” by responding to a series of “Equity Prompts” tied to the System’s Commitment to Progress for ending systemic racism, such as:

Discuss how the proposed program will actively pursue equity in student recruitment, access, retention and degree completion. Provide examples of academic and student support services that will be implemented to support student learning success and completion. [Connects with Commitment to Progress: Focus on Equity in Student Access and Success and Use Data to Close Equity Gaps]

The technical college is also required to submit a full list of the proposed credential’s curriculum, including course titles, credits, and course function. State technical colleges collaborate with district employers to design the curriculum within each technical college credential. This alignment step aims to ensure that the curriculum is designed to provide students with experience

in occupation specific technology, tools, equipment, and software. Further, the curriculum is collaboratively developed with employers to verify it will build knowledge, skills, and abilities that are vital for employability upon graduation. After the System Office approves a new credential and its curriculum, the requesting technical college begins institutional planning and implementation.

After a credential and its supporting curriculum are fully implemented at a college, employers engage in a curriculum modification process through program advisory committees to verify educational relevancy in relation to the pace of change in the workplace and industry. The System Office is integrated into this process by approving curriculum modifications. The System Office's Educational Services Manual describes the process through the following text.

The System Office expects that all major curriculum changes have been vetted and supported by the Program Advisory Committee. Program Advisory Committee meeting minutes shall be submitted to the System Office and the respective staff will respond.

Meeting minutes need to clearly demonstrate that the Committee was presented with the proposed changes, including all courses being modified. Support from the majority of members should be indicated in the minutes.

Ensuring industry relevancy of credentials and curriculum is necessary to realize the technical college system's mission. Maintaining routine employer engagements through program advisory committees keep a pulse on what is happening in the industry and provides technical college staff with vital insights to ensure their offerings best prepare students for future careers.

Annually, the technical college system evaluates the employment and earnings of graduates who complete a technical college credential. A survey is distributed to graduates within six months of graduation to better understand their employment outcomes. With a

historical response rate of 65%, the system uses these data as another way to check alignment between technical college credentials and their mission of providing skilled labor to the state workforce. An annual **Graduate Outcomes Report** is produced with content that demonstrates survey findings. The report begins with the following text.

The states technical colleges provide leading-edge instruction that increases the economic vitality of students, employers and communities throughout the state. Our students routinely find employment before or shortly after graduation. Of our recent graduates in the labor force, 93% were employed within six months of graduation, with a median salary of \$46,796.

Throughout the report, figures demonstrate transparency that centers and assesses the technical college system's mission of education for employment. Employment figures are disaggregated by credential to easily identify variance in employment outcomes. The Graduate Outcomes report is another way the state technical college system demonstrates close connections between its offerings and employment. By creating processes and systems with employment in mind, the technical college system's education is industry recognized and its graduates are employable within the workforce system.

Ensuring that dual enrollment is industry validated may be an approach to breaking a system of social reproduction that has disenfranchised People of Color due to unequal footing forged in our history. When credentials and curriculum are validated by employers, there is an assurance that the education students receive will provide them with advantages in finding employment, which may propel upward social mobility. When students are enrolled in dual enrollment that doesn't lead to or support attaining employment, they are left to figure out what to do with the learning they have acquired and where it fits in to their future trajectory.

The technical college system's dual enrollment delivers the same curriculum offered within the state's technical college credentials. As Marie at the System Office stated, "dual enrollment courses are the courses students take at our technical colleges...a course is a course and there is no difference." Processes created by the System Office ensure employers have a voice in technical college curriculum development and modification. With the building blocks of industry validated credentials and curriculum, college Career Preparation Coordinators collaborate with high school partners to implement and maintain dual enrollment pathways with industry value.

A Breadth and Depth of Programming to Form Dual Enrollment Pathways

Maintaining and expanding dual enrollment pathways in collaboration with area high schools is foundational to dual enrollment access. Simply stated, dual enrollment pathways must be created and maintained to ensure students can participate. When dual enrollment pathways are created, multiple factors are considered such as availability of qualified instructors, costs incurred to operate the pathway, availability of equipment and course supplies, and meeting local employer's skilled labor needs. One Career Preparation Coordinator shared, "I feel like my job with high school principals, especially when new principals come into a district, is to sit down with them and explore the dual enrollment pathways that have been developed for the district and what could eventually be offered. We talk about the feasibility of maintaining offerings and expanding offerings." Technical college and high school partners must forge a mutual understanding of each other's capacity to offer dual enrollment. Together, dual enrollment partners can pool their resources and be responsive to each other's limitations so dual enrollment programming can thrive. Central to this relationship is ensuring the right mix of dual enrollment courses meets the diverse needs of high school students.

High school student exposure and readiness to engage in educational and career pathways is varied. The state's dual enrollment partners noted that there are multiple "types" of students who may enroll in dual enrollment programming, and it is imperative that dual enrollment pathways are designed with students in mind. Curly, a Career Preparation Coordinator at Gilead College, categorized three "types" of students who may enroll in dual enrollment programming. These "types" of students are based on the options they perceive as viable in relation to college and careers. This concept has a direct connection to SRT's notion of habitus.

I actually think there's three types of dual enrollment students. There's the one who is extremely intentional. I am gun ho and know what I want to do for a career and what education I need. I'm gonna get on this train and it's taking me there. You have the second one who is planning for college but doesn't know what they want to do for a career and is doing it more as an exploratory type of experience. I think I might like this. I don't really know what I want to do for a career, but I'll try it and see. Then there is a third group that just falls into it. Maybe they heard about it from a friend or were on a picnic and heard it from a cousin and just signed up. College isn't really on their brain, but it seems like a fun class, so they enrolled.

Meeting the needs of the different "types" of high school students was noted as a "balancing act." It requires practitioners to consider a breadth of dual enrollment subjects that provide students variety of programming and depth of dual enrollment pathways that include a series of sequential and related courses scaffolded along a pathway towards a college credential.

Chloe, a 55-year-old, White, woman and Career Preparation Coordinator at Evergreen Technical College, believes in the transformative impact of dual enrollment participation. To fully realize the positive effects of dual enrollment among as many students as possible, she

believes that dual enrollment should be offered in great breadth and depth to best meet student needs.

Each student is going to be in a different place in their readiness to enter a career pathway. If we want to reach all students, then we have to offer dual enrollment in a way that meets their needs.

And so, I think that it is important to have a sequence of courses that leads them down the path of their interest, if they have already identified it. Knowing that there's so many different career interests out there, I think it benefits schools to have a number of different pathways. We've got one high school that's got two different dual enrollment pathways, Academies, running. One is in the financial vein, and one is in the construction vein. We would love to go down several other veins with them as well in these packaged programs.

But to be able to provide the opportunity of dual enrollment to as many students as possible, and that's relevant to their interests and needs, I think you need to have a mix of classes in various areas so students can try things and find what they like.

For some students, they may be on a trajectory that's maybe slower than other students. They may be more in that taste-test mode, and they just need to be exposed to a lot of different opportunities. High school students don't know what they don't know. And if they aren't coming from a situation where they've been provided opportunities to experience or gain exposure to different career areas, then you know, having that dual enrollment opportunity in high school is going to give them that experience and exposure. Whereas if you have a student who, say, has a parent that has their own building construction company, and that student has been working side by side with a parent, you

know, for years and understands the field, and really is interested in pursuing that. Boy, if we can get them the higher skills sooner, all the better for that student.

So, it really, I think it goes back to what opportunities the students have had in the first place to explore careers prior to dual enrollment. Some students are gonna need that exploration through a mix of dual enrollment courses and others are gonna be ready to move on to a specific sequence of related courses in a pathway.

Chole's statements are echoed amongst the other Career Preparation Coordinators. Dual enrollment partners should strive to coordinate offerings that are inclusive of student readiness and interests to engage in college and careers. To expose as many students as possible to dual enrollment, practitioners must be thoughtful when designing a mix of offerings that is supportive of each student's readiness to participate. This approach is mutually beneficial to students who may be ready to engage in a dual enrollment pathway organized with a series of related courses and to students who are unsure about their college and career aspirations.

Not all students are sure of their future college and career plans. Students may or may not be committed to attending college and may or may not know "what's next" after high school. Dual enrollment provides an opportunity to explore college and careers so students can better understand the feasibility of participation. Interviewees shared numerous student stories about how dual enrollment participation provides clarity in navigating educational and career pathways and enhances student habitus about what options are viable.

Molly is a Career Preparation Coordinator with eight years of dual enrollment experience at Valley Technical College. Molly conveyed the student benefits of dual enrollment providing clarity for the future through a personal story and how advancing dual enrollment access can best be achieved through a mix of dual enrollment programming that balances breadth and depth.

I think dual enrollment should balance a mix of different course areas across a series of sequential pathways. I always use my daughter as a good example of dabbling in different dual enrollment because she didn't know what she wanted to do after high school. And so, she took two culinary courses. But she walked away thinking, you know what? Cooking's really fun, and I will always cook. It just isn't my passion.... I don't want to be a chef. That's a great thing for her, at 16, to learn and to have that level of knowledge before investing more time or money or applying to schools in a field she thought she might like. That's a benefit of dual enrollment right there. Even though she didn't continue on that pathway, she took some early childhood education dual enrollment classes and that clicked. She continued on that pathway and is a first-grade teacher now. So, I think dual enrollment offers kids that opportunity where they can kind of bounce around a little bit to feel their way through what's going to be a good fit for a pathway for them. Just because a school has developed strong pathways, doesn't mean that a student can't jump from one pathway to another. So, I feel really strongly about high schools having those set-in stone and across different career areas. Students can try things out, and once they find the right fit, the pathway with related courses is ready for them.

Creating dual enrollment pathways with sequential and related courses towards a college credential is viewed as a priority across the technical college system. As Molly shares, it is also important to provide a breadth of courses so students can find the right career fit that matches their interests.

One of the more comprehensive examples of dual enrollment pathways that demonstrate depth and breadth of programming is at Falls High School. Falls High School offers standalone dual enrollment courses, and packages a series of dual enrollment courses, along with other

courses for college credit, into dual enrollment pathways. The high school has coined their packaged dual enrollment pathways as Career Academies, which are open access without consideration of eligibility requirements. Falls High School has a total of five Academies designed for “high-demand job markets.” The five Academies include the: Business Academy; Design, Communication, and Media Academy; Educator Academy; Healthcare Academy; and Science, Technology, Engineering, and Math (STEM) Academy. The purpose of the Career Academies reflects the broader purpose of dual enrollment and the technical college system’s mission. As described on the institution’s **Career Academy Website**, the model provides students with an opportunity to explore college and careers.

The Career Academy program is a cohort learning community model created to bring together students of various backgrounds and foster relationships based on a common career interest. With great emphasis on student voice, integrated curriculum, and articulated relevancy, the Career Academy program is designed with a focus on service, project-based, and work-based learning experiences to provide rich opportunities for students to learn the knowledge and skills necessary for postsecondary career paths in industry-related fields.

The Career Academy program is unique because:

- The Career Academy Program integrates academic, technical and 21st century skills to provide students with a comprehensive understanding of careers in industry-related professions and employment in entry-level careers.
- Students gain additional knowledge and skills needed for higher level schooling for related careers.

- Students learn through core course work, group projects, reflections, field trips, case studies, and community-based service projects.
- Students gain an understanding of employment opportunities.
- Students learn the importance of project, service, and community-based learning experiences.
- Students are offered rich opportunities to learn skills necessary for a career path in their Academy's related fields.

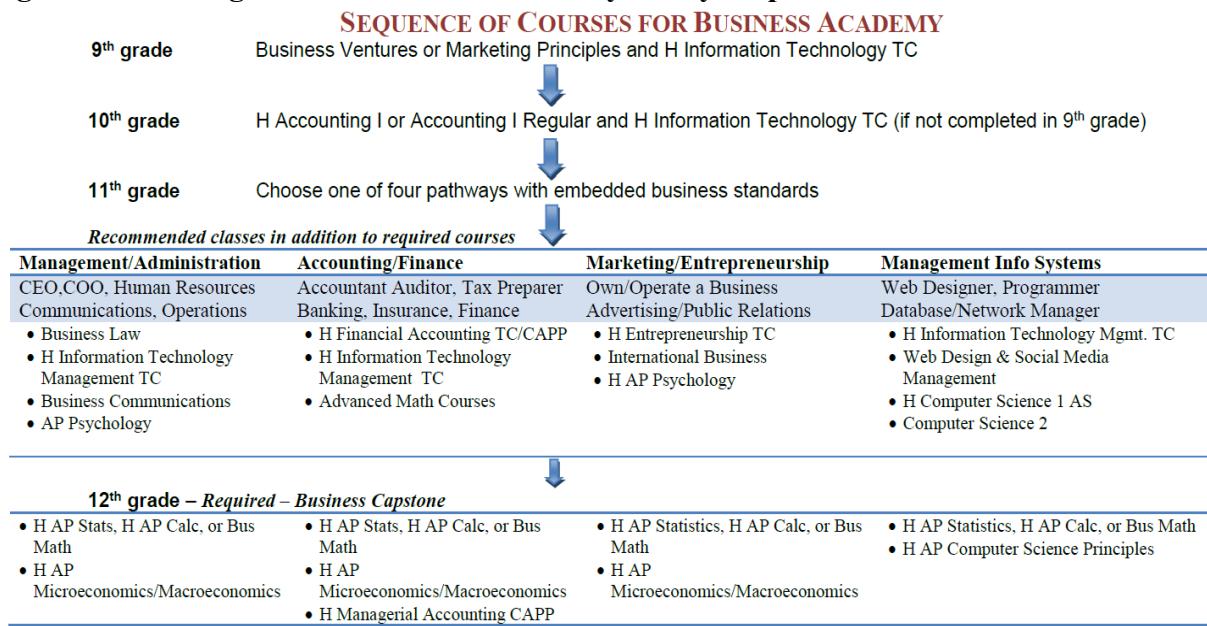
Falls High School's Career Academy model provides students copious opportunities to acquire capital which can shape their habitus of viable college and career options. Students can acquire cultural capital in the form of college credits and industry certifications, and social capital in the form of employer relationships through job and mentorship opportunities. Unique to Fall High School's Career Academy model is its dual enrollment pathway design that encompasses four years of a student's high school career. Students engage in scaffolded college-level curriculum connected to a "high-demand job market" while engaging in various contextualized active learning opportunities. Compared with a standalone dual enrollment course, this approach more comprehensively prepares high school students to navigate career and educational pathways while in high school and beyond by structuring related courses in a specific industry. Students can deepen their knowledge over time and apply what they have learned through a series of outside-of-the-classroom activities.

Falls High School's Academies are aligned with a specific career, span multiple years through scaffolded curriculum, and include active and applied learning opportunities like company visits, college visits, and service-learning. The model is highly structured into a dual enrollment pathway with a series of milestones that must be achieved in order to receive an

Academy endorsement at high school graduation; a distinction the high school believes will “strengthen college applications and employment prospects.” There are four requirements integrated into each Academy. These requirements are documented in the high school’s **Career Planning and Course Guide** to include completing the necessary sequence of courses packaged within the Academy, completing co-curriculars that are relevant to the Academy’s career focus, participating in community engagement activities, and completing a capstone course or project. While Falls High School’s Academies require a significant commitment early in a high school student’s career, there is flexibility to “taste-test” the various Academy subjects to ensure proper fit with student interests and aptitudes. Renee of Falls High School shared, “Students may leave an Academy at any point if they decide that the career area is not of interest. They still have access to the full slate of courses in any other Career Academy.” This approach allows students to transition in and out of comprehensive dual enrollment pathways if they find that one is not a good “fit” for their interests and aspirations.

Each of the five high school Academies are documented in Falls High School’s Career Planning and Course Guide as well as on the high school’s Career Academy Website. Figure 4 presents the four-year plan for the Business Academy. The documented Academy plans demonstrate how Falls High School has prioritized clarity in their offerings.

Figure 4: Falls High School Business Academy four-year plan.



A Business Academy Endorsement on the High School Diploma will be awarded to students who complete the academy's requirements:

1. Students must take a business course each semester.
2. Students in the Business Academy must be an active member in one of the components of FBLA (community service, school store, leadership conferences, or competition).
3. 10th grade students must participate in three of the business exposure/college field trips and complete written reflections.
4. 11th grade students must complete a minimum of 8 hours job shadowing and complete written reflections.
5. If students have met the above requirements, they will receive an invitation to enroll in the 12th grade Business Capstone course.
6. 12th grade students must work in business or volunteer (service needs approval) for 40 hours (**Begin summer after grade 11**).
7. Successful completion of the Business Capstone course in 12th grade.

Within the Business Academy, students are required to take at least one business course each semester beginning Sophomore year. Students can take business courses during their freshman year, but it is not required. Courses within the Academy design include dual enrollment courses, AP courses, and high school level courses. Students can participate in the Academies and only take dual enrollment courses if desired. Participation in AP courses is not required. Business Academy dual enrollment courses include Information Technology, Information Technology Management, Entrepreneurship, Financial Accounting, and the Business Academy Capstone.

Students participating in Falls High School's Business Academy are required to be a participating member of the Future Business Leaders of America (FBLA) student organization.

Membership to FBLA is required sophomore, junior, and senior year. Members of the FBLA engage in leadership development activities such as mock interviews and public speaking engagements. Members also compete in business-related subjects at the regional and state level against students in other high school chapters.

Business Academy sophomores are required to participate in at least three of the available business exposure and college field trips coordinated by the Business Academy lead employed at Falls High School. These opportunities allow Business Academy students to acquire capital through social relationships and build their knowledge of various employers and colleges in the area. While Falls High School's Academies do not include dual enrollment taken at a technical college campus, college visits provide students an opportunity to familiarize themselves with the college's physical space, gain a deeper understanding of the higher education system, and experience what it is like to be on a college campus. At the completion of each business exposure and college field trip, Academy students are required to complete an essay reflecting on the experience. Academy students meet with their Academy's lead to discuss how the experience might shape their future college and career aspirations.

During their junior year, Business Academy students must be a Junior Achievement volunteer and complete two job shadowing experiences. Job shadowing must be a minimum of 8 hours and be in a business-related career. This requirement provides high school students with a richer understanding of a specific occupation and an immersive experience to build social relationships with an employer. At the completion of their job-shadowing experience, students are required to complete a reflective essay. Students meet with their assigned Falls High School Academy lead to unpack the experience and reflect on how it may impact future career aspirations.

During their senior year, Business Academy students must work in a business setting or volunteer for a minimum of 40 hours. Work time may include internships with local employers. In addition, seniors must complete the Business Academy Capstone dual enrollment course. In the course, students work in teams of their choosing and prepare a plan to run a small business. Each team focuses on one area of the business such as social media and marketing or accounting and finance. The students work with business and community leaders to develop and finalize their business plans. Students also build their “personal brand” through various activities including developing a professional wardrobe. While in the course, students also develop an electronic career portfolio to document their experience and achievements in the Business Academy.

The practice of forming structured dual enrollment pathways, like Falls High School’s Academies, buffers student uncertainty in what courses to take and in what order. The institution places responsibility on itself to support students with their enrollment decisions rather than expecting students to muddle through a mix of unconnected courses wondering the sequence of courses to enroll in and what they lead to. Structured dual enrollment pathways may be a lever to disrupting the social reproduction of racial inequities. Capital that catalyzes upward social mobility has been unequally distributed in education spaces and beyond. This distribution is based on race, and various intersections such as geographic location, first generation status, and socioeconomic status. The resulting environment is one that leads to an inequity of access to capital which supports economic prosperity. This inequity is perpetuated through the generational passing of capital within these constructs and their convergence; race and ethnicity, geographic location, and so on. When there is unequal distribution of capital overtime, like knowledge of successfully navigating dual enrollment spaces, students and their families are left

to fend for themselves and use the tools they have at their disposal to make decisions. In relation to dual enrollment, these decisions are life changing. As practitioners have shared, dual enrollment is transformative and can shape student college and career trajectories. Participating in dual enrollment, and its myriad of benefits, may be a mechanism to breaking a cycle of racial inequity that has stifled upward social mobility. Through structured dual enrollment pathways, students are not left to use the tools that have been historically passed on to them through systemic inequities. Instead, dual enrollment partners level the playing field by providing a guide to course sequences that allow students to acquire capital overtime and shape their *habitus* towards future college and career opportunities.

In contrast to Falls High School, Anytown High School does not offer structured dual enrollment pathways. While Anytown High School offers the same number of dual enrollment courses as Falls High School, as well as AP courses, the institution does not package their courses in alignment with careers. Students can take a mix of dual enrollment and other college credit opportunities, such as AP courses, but the arrangement of these offerings into a dual enrollment pathway is nonexistent. As a result, the high school does not have illustrated roadmaps that prescribe which courses students should take and when across their high school experience.

Anytown High School’s “cafeteria style” approach to dual enrollment allows students to engage in multiple career areas. Students can taste-test various industry aligned subjects while acquiring multiple forms of capital that are valuable to navigating educational and career pathways. In addition, the open-access approach to enrolling in Anytown High School’s various dual enrollment subjects can help students match their interests with college and career options through rigorous college-level curriculum. Students can easily shift from one career area to

another to form their aspirations about the future. While a cafeteria approach to dual enrollment offerings has its benefits, there are some limitations.

A mixture of unconnected dual enrollment courses lacks a start, middle, and end. Students are required to think about how one course relates to another and what those courses lead to. Reliance on students to build connections between dual enrollment courses and how they fit into a larger college and career pathway may suppress participation or lead to less-than-optimal enrollment decisions. Students may become confused by how dual enrollment fits into their existing high school degree requirements. Students might also become discouraged when attempting to bridge connections between courses rather than following an articulated sequence of courses that build to an end goal. These feelings may be disproportionately felt among communities who have been historically disenfranchised. Systemic inequities that infiltrate various societal domains, such as educational and socioeconomic, have impacted People of Color and their ability to acquire capital that is meaningful to guiding their social mobility, including dual enrollment participation decisions. Deficits of acquired capital are generationally passed, continuing a history where Communities of Color are at a disadvantage, leading to racialized societal inequities such as lower education attainment rates. Structured dual enrollment pathways help to level the playing field by providing students and their families with a road map of what courses should be taken and when, and how they connect to a larger end goal. This approach counters a student's need to tap into their capital by laying out a clear path towards college and careers.

A Nonsystematic Approach to Building Awareness Among Underrepresented Students of Color

The mantra of “if you build it, they will come” is folly. Dual enrollment partners across the state are united in this belief and have implemented a series of general strategies to build awareness of dual enrollment. Yet, many dual enrollment practitioners were unable to articulate how targeted institutional efforts are used to advance participation among Students of Color underrepresented in dual enrollment spaces. Addressing dual enrollment access inequities is essential to ensuring dual enrollment’s transformative effects are realized amongst students who have historically been segregated from dual enrollment programming. Dual enrollment partners who have been successful in targeted outreach and erecting systems where learning about dual enrollment is mandatory have been able to deeply reflect upon the value of dual enrollment and strategize efforts in building awareness among students underrepresented in dual enrollment.

Institutional Outreach Targeting Underrepresented Students of Color

An active approach to dual enrollment outreach strategically reaches students with messages that convey the value of dual enrollment and how to enroll. The onus of knowing about dual enrollment is not placed on students. Rather, dual enrollment partners seek to educate prospective dual enrollment students about the opportunity. Data are analyzed to identify (in)equities in dual enrollment participation, and practitioners use data-insights to inform dual enrollment outreach strategy that targets specific high schools and communities. Dual enrollment practitioners develop awareness building materials that center student experiences and are easy to read, multilingual based on languages common to the area, and multimodal including public presentations, social media, website, paper, and radio. Dual enrollment outreach is continuous, and messages communicate dual enrollment’s key benefits that resonate with unfamiliar

audiences, such as being free to students, being an open-access opportunity to explore college and careers, and the ability to earn college credit for a postsecondary credential tied to employment.

Building awareness of dual enrollment should strive to engage stakeholders and fill information voids. Terms like “you don’t know what you don’t know” permeated conversations with interviewees while discussing the importance of student outreach. Each student comes with a different familiarity of educational and career pathways and a different social network to guide them as they navigate college and career planning. Midge, a Career Preparation Coordinator at Springfield College, reflected on her knowledge of college and careers and how this knowledge will provide advantages to her children.

You know, I think about it like, with my own kids. So, I have a child who will be going into high school in another year. I know all the questions to ask. I know all the conversations to have. I know all the people to talk to. Who's providing that guidance and support for the students who don't have a parent who knows about all these things or who is dialed in and has been researching college and, you know, opportunities since their kids were little? I 100% think that there are definitely gaps in knowledge and this impacts dual enrollment. I think that students that are underrepresented in education aren't as well versed or knowledgeable about what opportunities are available to them, like dual enrollment. So, I think in my role and the partners that I work with, all the different high schools that we partner with, we really have to focus on, how do we increase awareness and engagement with those underserved populations because they don't know it. You don't know what you don't know.

Building awareness of dual enrollment through an active approach ensures students have the information they need to make an informed decision about their future. Reaching underserved communities to build awareness of the value of dual enrollment and how to enroll is a pivotal step to increase participation and break the cycle of generational social reproduction that has historically disenfranchised People of Color.

Mary identifies as a 34-year-old, White, woman and has seven years of dual enrollment experiences as a Career Preparation Coordinator at Bright Community College. She believes that dual enrollment's transformative effects can help to end generational poverty and a generational mindset about "college boundness." She believes dual enrollment practitioners must be targeted and creative in reaching underserved populations with messages about dual enrollment.

I think that the life changing impact of dual enrollment is one of the things I really fell in love with. Dual enrollment can open students' eyes to opportunities. We know that for most students, the people who are in their sphere of influence are the ones most likely to encourage them to enroll. What that circle looks like or who's influencing them, might really limit what they think their possibilities are for the future, for a career or for education. And so, I like the fact that dual enrollment gives them a chance to maybe step out of that box a little bit and be exposed to different things and maybe imagine a future that's completely different than what they might have ever thought was possible for themselves.

I also believe in the mission of technical college systems and career pathways. The short-term credentials created for a prosperous, and sustainable life. When these pathways are connected to dual enrollment, you can explore careers and actually get a credential and

come out making a sustainable wage for a family and not be in mounds of debt like some of the four-year programs and systems do. So, I really think we have to promote the opportunity better and look outside the traditional ways we have in the past. We need to be more targeted in reaching students who are not in dual enrollment. Those communities who have been left out of education. The fact that we can lower costs for students by providing dual enrollment is huge for students. Students can get off their high school campus, and really see what it means to imagine themselves as a college student. They should know about these benefits.

If we really want to break that cycle of generational poverty and just generational mindsets, again, if you think about what their sphere of influence might be, they may not even think it's possible for themselves. So, if they can get that opportunity in high school and see that like, I can do this, this might be something that I can actually do. I'm going to try this. That's huge. It helps to build that self-esteem, I think, and advocacy for themselves of not feeling like their path is the one that was communicated to them, or not communicated to them, by their sphere of influence. They can choose anything and really open the door to possibilities.

Building awareness of dual enrollment through connections to a student's "sphere of influence" or "social network" emerged as a strategy to growing enrollment. A general belief was formed among interviewees that if a student's "sphere of influence" is comprised of social connections who have capital, such as knowledge and experience, that is valuable to navigating education and career pathways, then the student is more likely to engage in dual enrollment because their network is equipped to guide them to participate. This concept was often generation bound from

parent or guardian to child; a notion which elevates the importance of targeted outreach among communities who have historically been underrepresented within the postsecondary system.

Dual enrollment partners are not systematic in prioritizing targeted dual enrollment outreach among Students of Color; a finding likely connected to institutions failing to contextualize a global institutional commitment to racial equity within the construct of dual enrollment. Dual enrollment practitioners are unified that building awareness of dual enrollment is vital to advancing student participation. Yet, many practitioners were unable to articulate cohesive examples of targeted outreach for underrepresented Students of Color, even when knowing underrepresentation exists based on review of dual enrollment data. A clear level of uncertainty in how to advance racial equity in dual enrollment emerged. Practitioners prioritize dual enrollment awareness, they acknowledge racial (in)equities in participation exist as evidenced through data review, but they don't know what to do next. As a result, this group of practitioners prioritize their dual enrollment outreach to include generalized dual enrollment informational sessions for students and their families to build awareness of programming and advertise dual enrollment through various modes. They also employ college staff who go into high schools to educate students on dual enrollment pathways and register students in dual enrollment courses. While these actions are commendable, they were discussed in a more general sense with the goal of growing dual enrollment rather than intentionally addressing racial (in)equity in access. Further, these practices are offered through an opt-in approach, which requires students to seek out dual enrollment information; a practice that may disproportionately impact communities unfamiliar with dual enrollment and the postsecondary system.

Practitioners further along in prioritizing active dual enrollment outreach recognize the existence of generational social reproduction and the importance of reaching Students of Color with information about dual enrollment. These practitioners maintained a belief that underrepresented communities in dual enrollment likely have caretakers with no or limited college experience and who have not heard of dual enrollment. Further, caretakers in the family unit are likely unfamiliar with the transformative effects of dual enrollment and how to navigate education systems to enroll. To address information gaps, outreach is regular, rather than happenstance, and messages clearly and concisely communicate the benefits of dual enrollment such as cost savings, receiving college credit along a technical college pathway, and that dual enrollment is open access to all interested students. This strategy seeks to educate and demystify misconceptions about dual enrollment pathways.

Data-informed decision making is a common practice among practitioners who prioritize an active approach to dual enrollment outreach. The use of data to guide targeted outreach demonstrates institutional responsiveness to previous outcomes and future strategy. College staff analyze dual enrollment data by high school across student race and ethnicity and retrieve demographic population projections through secondary data sources. Data are reviewed to identify racial (in)equity in dual enrollment participation and to project future high school student composition. One Career Preparation Coordinator who prioritizes targeted outreach for Students of Color shared, “I think if you look at the demographic data of who you are serving and who is at the high school, then you can quickly see groups who you need to be trying to serve more because they're not getting enough access. You can also see who is represented well.” The use of data provides a “starting point.” Data are used to facilitate conversations among staff and contribute to dual enrollment strategy.

Sabrina is a Career Preparation Coordinator with 14 years of dual enrollment experience at TCN College. Sabrina partners with over 20 high schools in the college district, including institutions located in the suburbs of a principal city of over 40,000 people. Sabrina leverages data to inform intentional dual enrollment outreach among Latinx and Hmong communities.

Within our district, we are seeing a growing Latinx population, primarily Mexican families. There are a few things that we're doing to reach these students and families to build awareness of dual enrollment. One of our dual enrollment Academy Specialists teaches Spanish and serves as a career coach for schools with more Latinx students that have low numbers of students participating. So, she's trying to get to know them better and gain the trust of the parents. She attends high school events to make a presence and spread the word about dual enrollment. And we also have a Latinx initiative that started pretty heavily last year. So now we're converting a lot of our pamphlets, our course viewbooks, different dual enrollment materials into Spanish, which is new for us.

We also have a bigger Hmong population in our district. So, just this past weekend was Hmong festival. So, the college always goes to that festival, and we coordinated with the director of the Hmong Center here in the city to spread the word about the college and our dual enrollment offerings.

TCN College is taking a targeted approach in permeating Hmong and Latinx high school students' sphere of influence by engaging with families, attending multicultural events, and partnering with multicultural entities. Further, the institution prioritizes targeted outreach at high schools that are underrepresented in dual enrollment and have a large proportion of Latinx students. These strategies are being used to form relationships and spread awareness of dual

enrollment. The college is also converting dual enrollment awareness building materials into languages responsive to the populations within their community. Sabrina shared that these activities, “build trust with potential dual enrollment students and just help for people to know that the college sees them.”

Another institution that has prioritized an active approach to dual enrollment awareness that targets underrepresented Students of Color is Pond Technical College. Like other technical colleges further along in prioritizing racial equity in dual enrollment, Pond Technical College has immersed itself in multicultural events to infiltrate the sphere of influence among Hispanic and Hmong communities. **Monroe**, a White, 42-year-old, man, serves as the college’s Career Preparation Coordinator, and shared additional insight into who at the college is delivering information about dual enrollment at various multicultural community events.

We have targeted efforts in reaching Hispanic and Hmong families, who we have found to often times be first generation. We are connected to local community-based organizations, which helps us be a part of cultural events in the community. One of the things we did through this partnership was attend an event that was like a college night for predominantly Hispanic families and students. If you really want to recruit and help students understand what college can do for them, you have to be inclusive with a parent. So having someone that speaks the language, having someone that understands you know, what they're going through, is important when having these conversations. So, we partnered with a staff member in our Financial Aid Office who is Hispanic and fluent in Spanish. She'll go with us to events like this and it's immediate. You see the benefits of having her at an event like that. People just engage with her. It's like a barrier is dropped.

We were also just at the Hmong Summer Festival on Saturday here in town. I went to the event and there was a colleague with me who is Hmong, who knows the language. You just see it first-hand. Like, the people feel more comfortable coming up to the table if they see someone who looks like them. If I would have been there by myself, I wouldn't have engaged near as much as what we did with her there. Those conversations and word of mouth is a powerful thing. Through all of this, we've learned that we need to do a better job of incorporating the families in those conversations and do targeted work to reach audiences who are underrepresented.

Pond Technical College strives for racial equity in dual enrollment participation by enacting practices that aim to enhance awareness among underserved communities. Monroe's comments suggest the importance of having a liaison to the Hmong and Hispanic community who is representative of the community. Families of prospective dual enrollment students may be more responsive to receiving information about dual enrollment when the individual delivering the message looks like them or speaks a language used within the community.

Representation within dual enrollment spaces is also relevant to student depictions in dual enrollment outreach materials. Felicity of Shouse College shared:

We center students and publish their success stories in dual enrollment publications. This way students can see students who look like them. Why not let them talk about the value of dual enrollment rather than us? I think this helps students feel like they belong, you know, in dual enrollment or in college courses.

Centering student experiences through use of student imagery and student testimonials that are representative of diverse communities reinforces belongingness. In addition, dual enrollment experiences delivered by a fellow student creates a sense of authenticity. **Marcel**, a 43-year-old,

White, woman and Career Preparation Coordinator at Plains Technical College shared how students respond when hearing messages directly from fellow students and how the institution has centered student voices in dual enrollment outreach.

On our website we have a number of videos where students are talking about the value of dual enrollment. Those have been very powerful in our presentations to high school students or student families. Letting them hear from the students themselves, I would say is really the most impactful way we build awareness.

This year I presented at a high school with two students that were in our Pre-Nursing Healthcare Academy, and I said, here's some information, but I'll let you talk to the experts. I brought the students up and they answered questions and shared out what their experience was like. It became a, you know, peer to peer kind of coaching session to help mentor other students about why it might be something that they should consider doing. Students just lit up. They responded to students who had actually experienced being in dual enrollment. I can talk about what I think it means to students or what I have heard from students, but I can't do it like the students can. They lived it.

Centering student voices and imagery in dual enrollment outreach positions dual enrollment as a desirable option for prospective students. Further, the depiction of underserved communities in dual enrollment outreach activities may instill a sense of belonging that is authentic to the student experience and help to demystify college and career pathways as an attainable endeavor. Mary, a Career Preparation Coordinator at Bright Community College shared, "There is a growing momentum to participation. The more representation from racially

underrepresented communities you get in dual enrollment, then the more others may want to participate who might look like them or who are in their circle of influence and peer groups.”

Falls High School also integrates student representation within outreach activities to convey authentic messages that center student experiences within their five Academy models. The high school uses student imagery to demonstrate student representation in Academy programming. Each Academy’s public website hosts an image of senior Academy students. On the Healthcare Academy website, students are photographed wearing healthcare industry attire and holding healthcare industry equipment such as stethoscopes and IV drip bags (Image 1). These images demonstrate connections between the Healthcare Academy and the healthcare industry and visualize students as the healthcare workforce. In addition, these images are representative of Falls High School’s student community, which may reinforce belongingness and create a sense of authenticity to prospective Academy students. This is further reinforced by additional images of Academy students engaging in service-learning projects, internships, job shadows, networking events, and receiving state and national awards. Renee of Falls High School believes that seeing other students participating in the Academies positively influences future participation. She was asked to describe why she thought it was important for students to see other students who “look like them.” She responded:

Well, I think it helps with feeling comfortable in the classroom when you maybe are around others who look like you or have had similar experiences. I also think seeing others be successful makes a difference. So, if I see someone who looks like me being successful, then I think maybe I belong and can be successful too.

Image 1: Falls High School Senior Healthcare Academy Cohort



An active and responsive approach to dual enrollment outreach that targets underrepresented Students of Color is comprehensive. It requires deep reflection, strategic planning, an iterative methodology, and partnership across multiple organizations. An active and responsive approach to dual enrollment outreach also acknowledges the historical, systemic forces that have placed limits on generational knowledge and experience in navigating educational and career pathways. Without the counter friction of a targeted approach in reaching People of Color underrepresented in dual enrollment spaces, these systemic forces may perpetuate and reinforce results that have benefited White communities throughout history while leaving others behind to fend for themselves with resources that have been inequitably distributed throughout history.

Structures & Expert Staff to Combat Racialized Opportunity Hoarding

Dual enrollment partners unanimously believed that students who are aware of dual enrollment are more likely to participate than students who are not aware of dual enrollment. When knowledge of dual enrollment is not systematic across the student body, opportunity hoarding may thrive and cause racial inequity in participation. Students with knowledge of dual enrollment or social connections familiar with traversing educational and career pathways might

be capitalizing on their dual enrollment knowledge and enroll in dual enrollment at a higher rate while leaving their peers behind. To diminish an environment where opportunity hoarding flourishes, dual enrollment partners have established structures where student knowledge of dual enrollment is required. Expert staff should support these structures to ensure students and families understand the benefits of dual enrollment and how to participate. Creating a sustainable and mandatory system that builds awareness of dual enrollment produces counter friction to systemic forces which disenfranchise Communities of Color and perpetuate racial inequities, including accessing dual enrollment spaces.

Dual enrollment partners identified a series of barriers to building student awareness of dual enrollment programming. One widespread challenge is establishing a consistent presence at high schools to deliver dual enrollment information the moment students need it. Each of the 16 technical colleges employ staff who develop dual enrollment pathways in partnership with high school administrators. It is also a universal practice for college dual enrollment practitioners to integrate themselves across the myriad of high schools in their college district. This can be challenging for college's who have many high schools in their district, have expansive geographical boundaries, or who are under resourced with staff to lead dual enrollment partnerships. Thus, the intensity of college dual enrollment practitioner presence at local high schools varies. This challenge is inherently related to building awareness of dual enrollment and especially relevant among under resourced high schools, institutions with low dual enrollment participation rates, and high schools, like Anytown High School, experiencing racial disproportionality in dual enrollment participation. Some college-level dual enrollment practitioners believe one solution to this challenge is identifying a knowledgeable dual enrollment advocate centrally located at each high school.

High school counselors are crucial to advancing dual enrollment outreach. Molly, a Career Preparation Coordinator at Valley Technical College shared, “We try to form partnership with our counselors because I think our counselors are our, you know, first line of offense when it comes to engaging with students about dual enrollment.” Ideally, high school counselors support students in making purposeful choices about their future. They connect with students to provide guidance about college and career plans. To sustain these efforts, counselors strive to understand student interests and provide students with relevant information to prepare for life after high school. This includes building awareness of dual enrollment and advocating for students who may not see college and careers as a viable option. Counselors should walk alongside students as they explore college-level courses and help them form a plan to enroll and complete a dual enrollment pathway that best meets their aspirations. This requires high school counselors to actively understand student career and college ambitions and to understand the ins-and-outs of available dual enrollment pathways so they can provide students proper advice.

Employing high school counselors as knowledgeable dual enrollment advocates was salient among dual enrollment partners as a strategy to advance participation. Yet, the perceived success of counselors reaching students to support dual enrollment awareness varied. None of the interviewees believed that counselors should be the sole resource to building awareness of dual enrollment within the high school; this approach was perceived as having a low impact in building a collective awareness of dual enrollment among the student body. Rather, most interviewees believed that counselors should partner in this work with support from their local technical college. Many technical colleges employ Career Coaches or Dual Enrollment Advisors who collaborate with high school counselors to reach students and support their participation in a dual enrollment pathway.

Relying on high school counselors as knowledgeable dual enrollment advocates has limitations. Ongoing counselor turnover, burnout, counselor to student ratios, and an increased need to support student mental health are barriers to counselors serving as local dual enrollment champions. These competing demands limit high school counselors' ability to immerse themselves in knowledge about dual enrollment and then provide tailored support to students to encourage participation. Monroe of Pond Technical College discussed some of the challenges of a singular reliance on high school counselors to build student awareness of dual enrollment programming.

In my experience, I have not seen a kind of a deep dive approach of what our college calls intrusive advising. I'm not aware of those kinds of conversations that high school counselors have one-on-one with high school students. So, this might be a little unfair, but from my small sample size, I don't think that a lot of the counseling that's happening is kind of that intrusive let's really help you with plans for the future. It's kind of a, here's a blanket rather than tailored for the student. It might be their caseload is too big, you know, more focus on supporting mental health. In their defense, if the caseload is too big, they can't manage having those one-on-one intrusive conversations, then that's a problem in itself. Like that's a, that's a staffing problem. That's an organizational problem at the high school. So, I know that can be a reality too, but still the ones that hurt from that are the students.

Pond Technical College employs two full-time Dual Enrollment Advisors who act as an extension of the college at the high schools in their district. The Dual Credit Advisors provide student support in exploring dual enrollment pathways aligned with results from student career

interest inventories and discussions, assist with dual enrollment registration, and deliver ongoing student supports in dual enrollment courses by responding to academic alerts and monitoring student progress in achieving their goals.

A singular reliance on staff, both high school counselors and college practitioners, is not a silver bullet to reaching each student with information about dual enrollment. Students will fall through the cracks without a systematic approach to ensuring each student is reached, which may disproportionately impact students who do not see themselves as college bound. To comprehensively reach all students and build awareness of dual enrollment, institutional structures and staff to support these structures are necessary.

Falls High School has established institutional structures to build awareness of dual enrollment. Each student is required to learn about dual enrollment programming early in their high school career. Falls High School anticipates that students are unfamiliar with dual enrollment and actively educates them about its offerings. To accomplish this feat, Falls High School has erected systems in which each student and their family receives tailored guidance about dual enrollment programming.

To build awareness of Falls High School's five Career Academies, all freshmen are required to participate in informational sessions held during school hours. Each of the five Academies are explored during mandatory informational sessions and include presentations delivered by high school seniors to showcase how the Academy advanced their personal career and education goals. Renee of Falls High School stated:

We have required meetings with our freshman class each year. Like, what happens then is they will rotate in these meetings across sessions for each Academy. So, freshmen will

get to see each of the Academies. They do it over two days. Each of the Academies gives a presentation to the group. This way they'll get to see what's in the Health Care Academy for example. We have kids that are seniors that will assist and lead and like talk about their Academy job shadows and different things and field trips. So, all of the freshman, they rotate around and they get to hear about the different Academies.

Falls High School couples people expertise with structures that require students to learn about dual enrollment. The high school employs seven staff members who oversee the five Academies. These staff are titled Academy leads. According to Falls High Schools Career Academy Website, Academy leads guide general operations of the Academies including building awareness of the models with students, maintaining college and employer relationships to support Academy activities, and coordinating maintenance of Academy courses across partners including the local technical college. The Academy leads also act as student service practitioners for Academy students. Leads develop program plans with each Academy student, monitor student progress towards Academy completion, intervene with students when they fall off their Academy plans, and routinely meet with students to ensure each has a plan after high school graduation. Finally, the Academy leads are instructors of Academy curriculum, including the various dual enrollment courses embedded within each model. Falls High School Academy leads are the institutional subject matter experts of their dual enrollment pathways; leveraging their expertise as messengers of Academy information is vital within the high school's approach to building awareness of dual enrollment.

Each of the high school's seven Academy leads partner with high school seniors to deliver key information about each of their five Academies. The Academy leads share descriptive information, such as the Academy structure and programming. High school seniors

who have participated in an Academy also share their experiences and what the opportunity meant to them. This approach centers student voices who have experienced Academy programming while also providing important information about enrolling. Through inclusive representation of Academy seniors, high school freshman are provided unique student insights that high school staff cannot authentically convey.

Falls High School takes a targeted approach to build awareness of their Academy models. The institution's audience is the entire freshman class. Students cannot opt out of participating in Academy informational sessions, rather, attendance is mandatory. This approach to building awareness ensures that each high school freshman learns about Academy programming. The institution places the responsibility on itself to reach students with information about the Academies rather than expecting students to advocate for the information.

While reviewing dual enrollment participation rates by race and ethnicity, Renee reflected on why Falls High School has relatively equal rates of participation across race and ethnicity while the state exhibits racial differences in participation. Renee also reflected on why the institution has a comparatively higher rate of participation in comparison to the state participation rate. Renee shared:

We present our Academies directly to the kids. You know, when we present it, like, we give it to all kids. Everyone gets the same information about our Academies. I think for our kids, we do a good job of talking about the Academies. I think that the way we build awareness of dual enrollment is unique and wonder if other schools, if they just have the kids find out about dual enrollment on their own. You know, if we didn't do any of that stuff, like who's gonna look at this page in the course guide? No one is gonna do that, it's

going to be skipped over, you know. So, it'll only be if somebody would search it out with maybe a counselor.

If you don't know what's possible, how could you know what to ask? If you're a first-generation student, you might not have people in your household who know about dual enrollment that can tell you or help you find out information. So, I think that you know, to me, the awareness piece is probably the big reason we see Students of Color and all kids participating, so I'm glad we do what we do. We have to meet kids where they're at.

Shortly after the Academy informational sessions, all freshmen at Falls High School are required to meet with high school staff to discuss their academic and career plans. These meetings are coordinated in partnership with high school counselors and the seven Academy leads. Student families are encouraged to attend. Falls High School's **Career Academy Application** reveals that the high school's Academies are all open access. A fact that Renee believes contributes to the high school's high rate of participation.

We don't turn anyone away. Students complete an application [during or after staff academic and career planning discussion] so we know that they have an interest. Why would you turn somebody away? You don't know their potential. You know what I mean? Why would we ever wanna have somebody not have the opportunity if they want it?

During academic and career planning meetings, students, high school staff, and student family members discuss each student's career goals and aspirations. Staff seek to align student interests with available college-level curriculum, including dual enrollment programming and the Academy models. Students who choose to participate in an Academy are granted participation with the sole requirement of parent or guardian approval within their application.

Falls High School's Career Academy informational sessions build awareness of dual enrollment by addressing student knowledge gaps. Students are required to learn about dual enrollment through high school coordinated information sessions that seek to level the playing field with Academy information, and high school staff bridge information session learning to the creation of college and career plans. Students left to their own devices may never learn about dual enrollment on their own. In the absence of dual enrollment information and college and career planning support provided by Falls High School, students would be required to rely on themselves or their circle of influence to shepherd their traversing of convoluted education systems in hopes to acquire dual enrollment information. Creating a system where each student receives information about dual enrollment may be a solution to diminishing opportunity hoarding, where students with knowledge or a circle of influence with knowledge of dual enrollment participate and others are left behind. An environment of opportunity hoarding may result in racial segregation, where White students enroll in Career Academies and Students of Color do not. Falls High School's dual enrollment participation rates by race and ethnicity demonstrate similarity in participation, suggesting that the institution's approach to building awareness of dual enrollment may be a practice that supports racial equity in participation.

Creating institutional structures to build awareness of dual enrollment and investing in knowledgeable staff to support the success of those structures is not required to offer dual enrollment, but in their absence, may contribute to racial inequities in participation. One example of this is at Anytown High School. The primary way Anytown High School builds student awareness of dual enrollment programming is through a "homeroom style" Advisory Period. Anytown High School's Course Handbook describes the Advisory Period as a space to explore "civic engagement and personal accountability."

All students are assigned to an advisory. Advisory Period is 30 minutes every day and is a required part of each student's day. It is designed to promote and facilitate civic engagement and personal accountability. Student can earn 0.25 credit per semester and Advisory is graded Pass/Fail, based on attendance and participation.

Larry shared that part of his role at the high school is coordinating the curriculum of the weekly Advisory Period. One of the lessons he developed explores earning college-level credit while in high school. Larry stated:

Yeah, so for Advisory Period, students meet for 30 minutes each day. So, each week we do a different lesson for the Advisory Period. One of the lessons that we have kids go through is on dual enrollment and AP. Basically, potential college level courses that they could take in high school. The other Advisory Periods during the week are like a homeroom for the students to check in and use as a study hall.

Anytown High School's Advisory Period serves as a structure for all students to receive information about college-level courses. Larry notes that there are significant challenges to the operational aspects of the Advisory Period model. First, the Advisory Period may not provide students the ability to comprehensively explore dual enrollment as a viable option due to the informational lesson occurring once per year for 30 minutes. The information shared in the **Advisory Period PowerPoint** dedicated to college-level courses compounds this challenge because the Advisory Period incorporates all types of programming including dual enrollment and AP options. Students may not be able to fully understand and absorb dual enrollment information when competing with other course options during the allotted 30-minute lesson. Further, while the Advisory Period is scheduled for all students and occurs each day, Advisory Period attendance concerns suggest that information about dual enrollment may not reach each

student. The Advisory Period is delivered prior to student lunch; a scheduling practice that Larry noted has led to some attendance challenges, “Students will sometimes skip the Advisory Period and go to lunch early.”

During Anytown’s dual enrollment Advisory Period, students are provided with information related to all college-level courses they can enroll in while in high school. In addition, students are provided details on how to enroll, and the timing of when the Advisory Period is delivered is shortly before the high school coordinates its course scheduling process.

So, what we do is we go through and explain the process to enroll, what dual enrollment means, the colleges we partner with, and then we share the list of courses with them that they can take. We do it once a year. We do it right before we would do our scheduling. Maybe within a week before so that they [high school students] have all the information they need before they schedule their courses.

Providing students information about dual enrollment, and other college-level courses, prior to course scheduling supports student access to timely information.

Anytown High School relies on its instructors to deliver information about dual enrollment during its Advisory Period lesson. Larry shared:

So, the way our Advisory works out is each teacher has an Advisory Period. It’s about 20 kids. And so, one of my roles is I oversee Advisory lessons. So, we make the lessons, we give it to the teachers, and every student gets that lesson. So, every teacher does it individually like to their individual Advisory Period group.

Anytown High School instructors are provided electronic materials to deliver the Advisory Period lesson each week. Some instructors may be more familiar with lesson content than others; an institutional reality that jeopardizes continuity of dual enrollment information reaching

students. Some of the instructors delivering the Advisory Period lesson teach or have taught dual enrollment curriculum, while others have not. Larry reflected on this potential inequity by stating:

So, yes, there is a barrier there, right? The teachers that don't have as much information on dual enrollment, or don't teach those courses or their department doesn't, maybe don't share it to the extent that the others in CTE do.... there may not be a complete understanding of what dual enrollment means. Like they [instructors] know they're [students in dual enrollment] getting college credit. Or they're getting these higher-level courses, but they may not understand, like the long-term implications of what dual enrollment can do for kids related to college and careers.

A thorough understanding of the transformative nature of dual enrollment among instructors delivering the Advisory Period lesson is pivotal to helping students view dual enrollment as a desirable and viable option. Staff should be able to communicate key dual enrollment messages that speak to students who are unfamiliar or who do not see themselves as “college material.” Anytown High Schools approach to delivering dual enrollment information, categorized by high-level details in a 30-minute lesson and instructors with varied knowledge of dual enrollment, is an inequitable system to building awareness of dual enrollment. Some students will be provided a greater depth of information in comparison to others, and some will miss out on key dual enrollment messages such as how participation provides advantages in navigating educational and career pathways, that participation is free, and that participation is open access.

Larry of Anytown High School is the sole individual responsible for all things dual enrollment, a sharp contrast with Falls High School’s seven Academy leads, and an experience that might be contributing to racial inequities in participation at the institution due to limited

capacity to build awareness of dual enrollment among students. Onus and responsibility for these inequities should not fall entirely on Larry's or Anytown High School's shoulders. Instead, the environment at Anytown is one shaped by historical context. An environment built on systemic issues of state and federal funding and resource allocation that require educators and educational entities to "do the most with the least." Indeed, Larry has many responsibilities that pull him in varied directions. In his role at Anytown High School, Larry is the director of curriculum, the FBLA advisor, a business and marketing instructor, the college and career readiness coordinator, the course scheduling and student registration manager, the creator of the high schools Advisory Period, and a coach for various sports teams at the high school. A lack of institutional resources undoubtably has contributed to Larry being spread thin; a workplace reality that inevitably impacts students and leaves them with limited knowledge and institutional support to engage in dual enrollment programming.

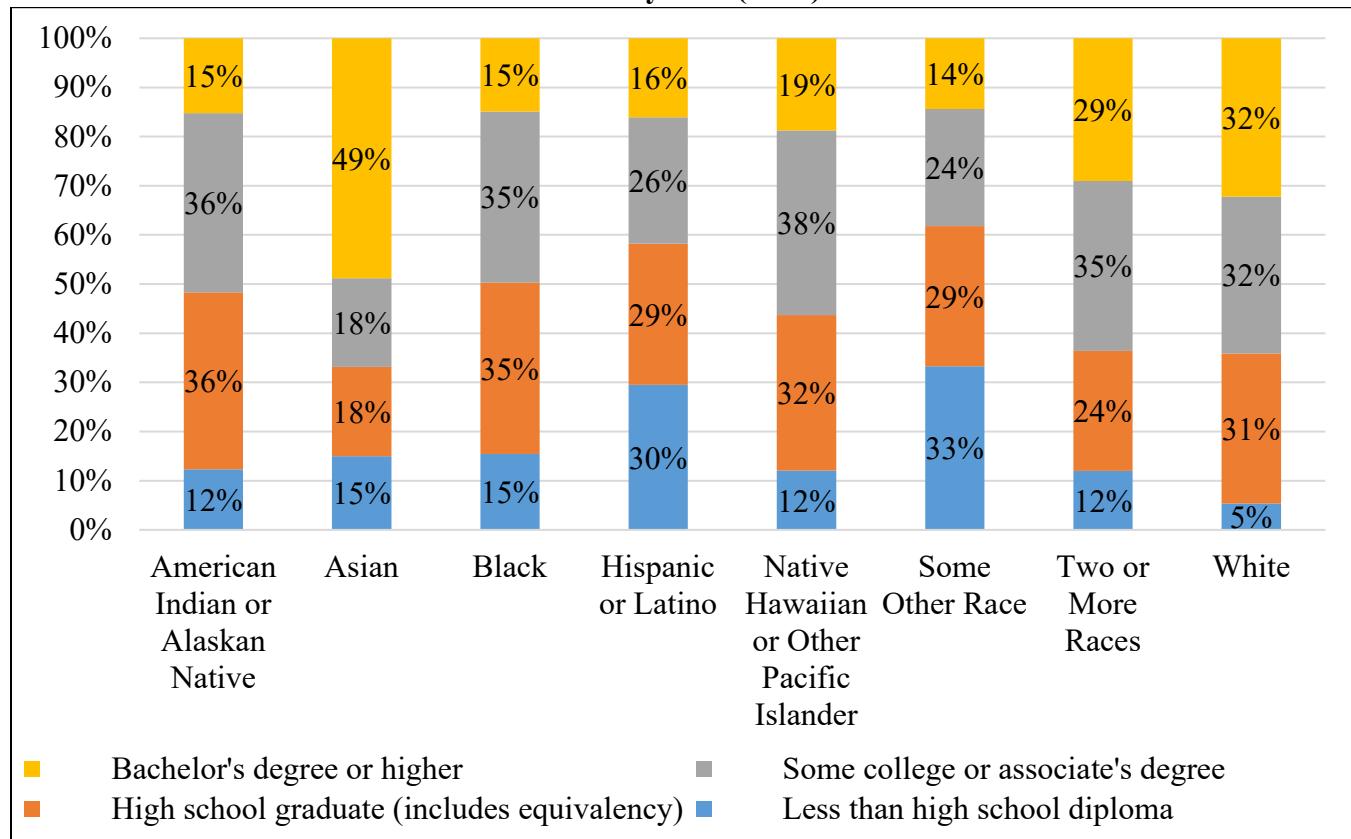
Larry was asked to reflect upon Anytown High Schools approach to building awareness of dual enrollment in relation to the high school's racial disproportionality in participation. While reviewing dual enrollment participation rates disaggregated by race and ethnicity, Larry shared:

I think that, I don't know if you've heard the word opportunity-hoarding before, but I feel like among our students, some are aware and some families are aware. And those are the ones that are taking advantage of dual enrollment programs right now. And so, if we can take a step back and figure out how we can really reach students and families on a different level, I think we could potentially change what our enrollment trends look like and potentially give students an opportunity to find something that they like.

Like Larry, other dual enrollment partners cited opportunity hoarding as one of the causes to racial disparities in dual enrollment participation. Members within a student's circle of influence

who are familiar with dual enrollment and its value may be more likely to encourage high school aged children to participate. Those members familiar with educational and career pathways and the value of dual enrollment are likely to pass this knowledge to high school aged children and advocate for their participation through guidance that tactfully navigates intricate education systems. In addition, students who have this knowledge, whether supplied by someone in their circle of influence or not, are more likely to participate in dual enrollment.

Opportunity hoarding emerged during interviews in two ways. Participants either explicitly used the term “opportunity hoarding,” like Larry, or spoke generally about dual enrollment knowledge with connections to terms like “first-generation” or “parent education.” Larry’s belief that White students are likely to be familiar with dual enrollment due to knowledge passed on by someone in their circle of influence was echoed among other interview participants. This belief connects to historical educational disparities and the state’s existing racial inequities in college credential attainment rates. Census data reveals that significant differences in educational attainment and college experience vary by race and ethnicity within the state where this study is situated (Chart 13). Asian, White, and populations that identify as Two or More Races are more likely to have some college experience or a college degree. While the data is not specific to parents of high school students in this study, it provides some foundational support to comments shared by dual enrollment partners that the passing of knowledge related to dual enrollment from one generation to the next is racialized.

Chart 13: State educational attainment rates by race (2020).

Anytown's befuddled approach to building awareness of dual enrollment through structures and expert staff may help to explain the high school's racial disproportionality in participation. Anytown High School has enacted its Advisory Period as an institutional structure to reach students with dual enrollment information, but several tensions may be leading to differences in student knowledge acquisition. The high school does not have consistent attendance in their Advisory Period. Instructors have varied experience and knowledge of dual enrollment and are not provided training to ensure continuity of instructional delivery across Advisory Period groups. The Advisory Period is a "one shot" experience each year; only one 30-minute dual enrollment Advisory Period lesson is delivered each year. Further, a bridge with staff support to take knowledge learned and turn it into a college and career plan is missing.

In the absence of institutional structures and expert staff to build awareness of dual enrollment, students are largely on their own to advocate for their place in dual enrollment spaces; both in seeking out valuable dual enrollment information and receiving institutional support to enroll. This may result in an academic environment that allows opportunity hoarding to flourish with underrepresented Students of Color being left out of dual enrollment. Student agency and resourcefulness has limits, especially in spaces where students are unfamiliar and have marginal guidance from their circle of influence that empowers them with dual enrollment knowledge. This is compounded by complex educational systems; a fact which illuminates the importance of reaching students with valuable dual enrollment information to inform future enrollment decisions. When institutions fail to reach students through dual enrollment outreach, students are left to seek out the opportunity on their own. Students may rely on their circle of influence to successfully guide them through academic systems to access dual enrollment. The reliance on passing generational knowledge about dual enrollment coupled with an absence of reaching students with information, may perpetuate generational social reproduction and disproportionately impact Students of Color to not enroll. This matters because the transformative effects of dual enrollment may be a lever to uplifting marginalized communities towards a path of upward social mobility. By failing to reach Students of Color with dual enrollment information, they might miss out on an opportunity. An opportunity that changes their trajectory and exposes them to capital which they can pass on to their peers and generations after.

Summary of Strand II (qual) Findings

Dual enrollment participation has grown across the state technical college system. Yet, disparities in participation exist by geographic location, race, and their intersections. Strand II

(qual) unearthed a series of themes that center policies and practices which may help to explain racial (dis)parities in dual enrollment participation.

Dual enrollment is an opportunity for students to explore college and careers, and dual enrollment partners are united in their belief that dual enrollment provides students advantages in navigating educational and career pathways. Students can acquire various forms of capital that fuel their upward social mobility and have a transformative impact on their college and career aspirations. Each dual enrollment partner aligned their policies with an open-access approach to participation. While the System, its technical colleges, and high school dual enrollment partners believe that anyone and everyone should participate in dual enrollment, significant differences exist in dual enrollment policy and practice supportive of student access.

The technical college System Office enacted the Commitment to Progress, which confirms the System's commitment to addressing racial inequity. Each of the 16 technical college President's affirmed their institution's commitment to ending systemic racism. Yet, this commitment is not systematically contextualized to dual enrollment access across the System. Some technical colleges were aware of racial disproportionality in dual enrollment, and some were not. Further, some technical colleges implemented dual enrollment policy and practice to intentionally address racial inequities in access. Enacting supportive policy and practice moves an institutional commitment to addressing racial inequity beyond a performative act by changing the ways the institution does business.

In the absence of a clear institutional commitment to racial equity, many dual enrollment partners took a largely race neutral approach to growing dual enrollment participation. As a result, policy and practice had been forged with a lack of intentionality towards racial equity.

This finding is particularly interesting, because all dual enrollment partners operate under an open access policy that does not consider eligibility requirements, which is a policy towards racial equity in dual enrollment access. Dual enrollment partners all acknowledged their open access approach to dual enrollment, but many were unable to convey how this shaped participation by race. For example, Falls High School was unable to articulate why their structured dual enrollment pathways and the ways they built awareness of dual enrollment were supportive of racial equity in dual enrollment access. As a result, the institution was unable to build connections between how their policy and practice are responsive to historical and societal racial inequities which create an uneven playing field for students. These findings were in clear contrast to Shouse College.

In the case of Shouse College, leadership publicly endorsed the importance of addressing racial disproportionality in dual enrollment participation through a published report. The institution also established measurable goals which seek to narrow racial disparities in dual enrollment participation. College staff actively engage their high school partners with dual enrollment participation data and implement strategies to grow equitable dual enrollment access. Shouse College's practices towards racial equity in dual enrollment access set the tone for the institution and their partners. Through these efforts, Shouse College has narrowed racial disparities in dual enrollment participation while growing dual enrollment programming among the suburban high schools they partner with.

Racial equity in dual enrollment access extends beyond how technical colleges collaborate with high school partners; it also relates to how institutions structure their dual enrollment offerings. Dual enrollment practitioners codified a belief that students who engage in

dual enrollment begin with varied aspirations for college and careers formed by their habitus. As such, dual enrollment partners should strive to offer a breadth and depth of programming to meet the diverse needs of high school students and structure their offerings into dual enrollment pathways. Through a dual enrollment pathway approach, students are provided a beginning, middle, and end of programming. Students know what dual enrollment courses to take and when to take them. Dual enrollment pathways stagger a series of related courses that build off each other, and lead to a specific college credential or career. Students do not have to muddle through a series of dual enrollment courses and wonder how they connect and which to take. Rather, students are provided a roadmap to their dual enrollment journey. A roadmap with building blocks of industry recognized curriculum provided by the technical college system.

Many dual enrollment partners across the state have developed articulated dual enrollment pathways. In the case of Falls High School, their Career Academies level the playing field by providing prescribed information that is advantageous to participation. The high school incorporates a series of staggered courses, including college-level courses and extracurricular activities, throughout high school for students to acquire capital that is valuable in navigating educational and career pathways tied to high demand fields. In contrast, some dual enrollment partners like Anytown High School, operate a cafeteria style approach to their dual enrollment offerings. High school students can enroll in dual enrollment, and taste-test multiple subjects, but the structured approach of defined dual enrollment pathways is nonexistent.

The ways institutions build awareness of their dual enrollment programming varied across dual enrollment partners. An active approach to dual enrollment outreach seeks to fill information voids about dual enrollment programming. The institution recognizes that not

everyone knows about dual enrollment, and they place the responsibility of building awareness of dual enrollment on themselves. A passive approach diverges and creates an environment where students and their families are responsible for seeking out dual enrollment information and advocating for student participation.

Many dual enrollment partners take an active approach to building awareness of dual enrollment. Data are being used to identify high schools and populations underrepresented in dual enrollment spaces. These data guides targeted outreach activities among specific communities. Dual enrollment partners are also developing multimodal materials responsive to the languages of the population within the community to strengthen awareness of dual enrollment programming. Some technical colleges are also integrating themselves within the community by attending multicultural events and forging relationships with families.

Dual enrollment partners shared many challenges to building awareness of dual enrollment. To strengthen awareness of dual enrollment and combat opportunity hoarding in high schools, some dual enrollment partners have created institutional structures to build awareness of dual enrollment and invested in knowledgeable staff to support these structures. In these instances, the institution has erected a system in which learning about dual enrollment is mandatory, not optional. For example, at Falls High School, all freshmen students are required to participate in a series of Career Academy informational sessions, and then meet with high school staff to develop college and career plans.

Dual enrollment partners across the technical college system are committed to growing dual enrollment participation. The policy and practice they implement to expand dual enrollment access, and how they prioritize racial equity in access varies significantly. Institutions further

along in prioritizing racial equity believe in the transformative nature of dual enrollment and have established an institutional commitment to racial equity in dual enrollment that extends beyond a performative act. Rather, they have enacted policies and practices that seek to level the playing field among students and families unfamiliar with dual enrollment or who have not navigated complex education systems.

Integrated Meta-Inferences

Through a mixed methods approach, I investigated racial (dis)parity in dual enrollment participation and how policies and practices might shape dual enrollment (in)equity in access. Connections to SRT brought deeper meaning to my findings and how they relate to upward social mobility. The four Strand II (qual) themes were examined against the Stand I (quan) data and compared across dual enrollment partners serving suburban communities to determine likeness. Through this process, commonalities emerged, such as the value of dual enrollment to navigating career and educational pathways and how capital acquired through dual enrollment curriculum shapes student habitus and propels upward social mobility. Differences also emerged, such as the ways dual enrollment partners package their dual enrollment programming and build awareness of dual enrollment. These differences were further analyzed to understand how they might moderate relationships between the four themes and dual enrollment participation. Collectively, this process solidified as a system of interconnected components that, together, make sense of racial (in)equity in dual enrollment access, its connection to dual enrollment policy and practice, and how this may influence upward social mobility.

Dual enrollment is an educational opportunity that exposes high school students to colleges and careers. High school students gain college credit and high school credit through enrollment in a single technical college course. The technical college curriculum connects dual

enrollment courses to various technical college credentials. Each technical college credential embodies the state's technical college mission of responsiveness to industry needs by aligning credentials with employment. The alignment of technical college curriculum to industry needs exposes dual enrollment to various careers and provides pathways towards upward social mobility.

The momentum dual enrollment provides towards upward social mobility stems from the advantages that dual enrollment offers high school students in navigating educational and career pathways. This concept is connected to SRT. Navigating the space of educational and career pathways is known as field within the context of SRT. Overwhelmingly, dual enrollment partners maintained a disposition that dual enrollment benefits students as they navigate the “field” of educational and career pathways. The fuel that propels these benefits comes from the cultural and social capital that students can acquire in dual enrollment’s industry-validated, technical college curriculum. In addition, these capital shape student habitus about what college and career options are viable.

Dual enrollment administrators maintained a unanimous belief that education and employer partners assign value to dual enrollment, and this value provides advantages to students in navigating educational and career pathways towards upward social mobility. The value of dual enrollment among employer stakeholders is connected to the employer-centric approach that the technical college System uses when developing course curriculum. Stated simply, the technical college system designs its curriculum and credentials with employment in mind and leverages the expertise of local employers to inform course competencies and learning outcomes. As a result of this collaborative approach to curriculum development, employers view dual enrollment as a pipeline of skilled labor to meet their workforce needs. In an ecosystem of racial

disproportionality in dual enrollment participation, this means that some students will not have direct access to this “pipeline” or a pathway to upward mobility.

The value of dual enrollment to the state’s technical colleges is connected to state legislation. Legislatively, the state technical college System is required to collaborate with local education entities, including high schools, to expand access to technical college education. The resulting expansion is the offering of high school dual enrollment, which is not only supportive of the System’s mission, but also acts as a recruitment pipeline by getting high school students on an educational pathway to college credentials.

Dual enrollment provides an opportunity for high school students to acquire various forms of capital. Cultural capital can be acquired in many forms, such as exposure to tools, equipment, and software that are used in industry. Given the connections between dual enrollment curriculum, industry, and technical college pathways, the acquiring of cultural capital provides advantages as high school students navigate current and future educational and career pathways towards upward social mobility.

Dual enrollment also provides high school students with opportunities to acquire social capital. Social capital through dual enrollment has many forms including relationships with instructors, employers, colleges, and fellow dual enrollment students. The various forms of social capital provide value to students in differing ways, but universally benefit students as they consider movement towards college and careers after high school.

Participation in dual enrollment may also benefit a student’s belief that they can be successful in college and in the labor force; a concept that relates to the transformative nature of dual enrollment and shaped habitus. The success that students find in dual enrollment fuels future aspirations towards college and careers, and stems from their experiences in industry-

relevant, college-level curriculum. As students acquire capital through dual enrollment, they also develop attitudes that they can find success while navigating educational and career pathways.

Dual enrollment is an opportunity for students to gain college credit and saves time and money. Discourse connected to time and money were often coupled together and were presented in dual enrollment marketing materials. Through dual enrollment, students acquire college credits and industry recognized credentials while in high school. This early entry to an educational or career pathway while in high school saves time. Early entry also saves students money. The tuition associated with college level courses that are taken in high school is neutral to the student and often referred to as “free” or “no cost” in dual enrollment materials. The concept of saving time and money while advancing along an educational or career pathway may be appealing to students and their families and provides advantages to college credential completion.

Racial disproportionality in dual enrollment participation varied across this study’s two high school research sites and technical colleges that partner with suburban high schools. Four themes emerged from Strand II (qual), which centers dual enrollment policy and practice, and helps to make sense of differences in participation by race.

A priority towards equitable dual enrollment access was palpable in System Office interviews and dual enrollment materials. This priority originated from the technical college System Office and is coined as the Commitment to Progress. The priority strives to eliminate systemic racism with a focus on equity in student access and success. Each of the technical colleges are supportive of the priority, as evidenced by college President letters of support, and benefit from the System’s levers of influence for change such as fiscal resources, policy, and

access to data. While each technical college has committed to racial equity, the ways they operationalize this commitment varies in the context of dual enrollment.

A commitment to racial equity that extends beyond a performative act influences the ways technical colleges engage with their high school dual enrollment partners. Shouse College is a technical college that has seen a narrowing of racial disproportionality in dual enrollment participation while simultaneously growing enrollment. The institution partners with a series of suburban high schools and serves the largest number of Black, Hispanic or Latino, and students who identify as more than one race in dual enrollment programming compared with the other 15 technical colleges. Shouse College's policies and practices, as well as high school collaborations, were dissected to better understand the extent to which they might relate to dual enrollment participation within their district. Together, these data reveal that an institutional commitment to racial equity, coupled with intentional practices such as communicating dual enrollment equity goals and engaging dual enrollment partners with dual enrollment equity data, may strengthen participation in dual enrollment and disrupt racial disproportionality in participation overtime.

All educational entities in this study operationalize an open-access approach to dual enrollment. The use of eligibility requirements in determining student ability to participate in dual enrollment was non-existent. This finding is in contrast with the high school tracking literature that suggests the use of high school GPA, student discipline, and standardized test scores in determining course placement disadvantages Black or African American and Hispanic/Latino students. The open-access approach to dual enrollment participation aligns with the state's technical college mission which strives to serve anyone, and everyone interested in a technical college education.

While dual enrollment partners maintain an open-access dual enrollment policy, the ways they package their dual enrollment offerings vary. In the case of Anytown and Falls High Schools, the majority of dual enrollment is offered at the high school, with less than five percent of all participation occurring at the local technical college. Offering dual enrollment at the high school has many benefits including mitigating the barrier of transportation to participate and offering instruction in a familiar environment to students. Each high school offers the same number of dual enrollment courses at the high school; 12 each. Students can enroll in the offerings as stand-alone courses at each high school. Diverging, though, is the intentional packaging of a series of interconnected dual enrollment courses that are coupled with contextualized, active learning opportunities including college and company visits and service learning. The scaffolding of a series of dual enrollment courses towards a college credential and career may help to explain the variance in racial disproportionality in participation between the two high schools.

Articulated dual enrollment pathways with a beginning, middle, and end clearly demonstrate which courses should be taken and when. In addition, structured dual enrollment pathways lead to something, a pathway towards high demand occupations. Falls High School's Academy approach to structured pathways may be especially impactful to supporting participation among Students of Color and help to make sense of similar rates of dual enrollment participation by race. Societal forces have historically marginalized Communities of Color, stifling their opportunity to acquire various forms of capital that are valuable to navigating education systems, including enrollment decision-making. In the absence of guided dual enrollment pathways, students are left to tap into their existing capital to support their course selection and enrollment decisions. This may disproportionately and negatively impact

marginalized communities, such as Students of Color, first-generation students, low-income students, and their intersections, leaving them confused and dismayed. No roadmap to dual enrollment pathways may lead Students of Color and other marginalized communities to not enroll all together or make less-than-ideal enrollment decisions. When marginalized communities disproportionately do not engage in dual enrollment, a system of social reproduction is perpetuated where some students acquire capital that is valuable to upward social mobility and others do not.

A potential cause of racial differences in dual enrollment participation is opportunity hoarding. Some interviewees used the term “opportunity hoarding” while others spoke more openly about student and family awareness of dual enrollment. One way to counteract opportunity hoarding is through strategic and responsive awareness building activities which place responsibility on dual enrollment partners to reach each student with dual enrollment information that empowers them to make enrollment decisions.

An active approach to building awareness of dual enrollment is a strategy towards equity in access. Institutions further along in prioritizing equitable dual enrollment policy and practice have enacted systems in which students cannot avoid learning about dual enrollment. Through this approach, college and career planning is mandatory, not optional. Dual enrollment practitioners reach each student with information about dual enrollment rather than expecting students to advocate for this information. To accomplish this feat, dual enrollment practitioners center students in all aspects of their outreach activities. Students are not expected to “know” about dual enrollment, rather, practitioners anticipate a lack of knowledge and seek to fill information voids. Targeted outreach is prioritized for underrepresented communities participating in dual enrollment, and data is used to inform these efforts. Practitioners seek to

permeate students' circle of influence and relay clear and concise messages about dual enrollment. These messages emphasize key information that will speak to audiences who are unfamiliar, such as the opportunity being free of cost, that participation is open-access, and that participation results in college credit for a credential tied to a career. Practitioners also strive for representation within outreach activities to convey authentic and inclusive messages that center student experiences.

In the case of Falls High School's Career Academies, students are not on their own in navigating dual enrollment pathways at the high school. Dual enrollment pathways exist, and the high school has erected systems in which learning about dual enrollment is mandatory. The high school actively builds awareness of dual enrollment and has invested resources in knowledgeable staff to support institutional structures that promote student participation. The juxtaposition of Falls High School's awareness building approaches, coupled with the institutions related dual enrollment participation, suggest that the ways institutions build awareness of dual enrollment may shape participation across race and ethnicity.

Within this section, I have incorporated and integrated quantitative and qualitative data from various sources to demonstrate how dual enrolment policy and practice comes to life through various common themes. The emergent themes from Strand II (qual) do not operate in isolation. Instead, the themes and related policies and practices intersect and interact with one another to influence Strand I (quan) dual enrollment participation and a pathway towards upward social mobility.

Chapter V: Discussion and Implications

My study set out to explore racial (dis)parity in dual enrollment participation and how dual enrollment policy and practice shapes participation in a midwestern, two-year technical college system. Through a mixed methods approach, my study analyzed dual enrollment participation rates by race across various suburban classifications. Dual enrollment documents were analyzed, and practitioner interviews were conducted to better understand dual enrollment policy and practice. These components came together to cultivate various integrated findings that illuminate racial (in)equity in dual enrollment access. Within this chapter, I present a discussion of the findings, implications for policy and practice, and directions for future research.

Discussion of the Findings

Within the following sections, I reflect more deeply on this study's findings in light of relevant research. I discuss how my findings resonated with, diverged from, or extended the existing body of two-year college dual enrollment inquiry.

Complexity to Dual Enrollment Participation in the Suburbs

The state technical college system has experienced a significant increase in the number of high school students participating in dual enrollment. This finding mirrors dual enrollment literature suggesting that participation across the nation has been on the rise (Fink et al., 2017, Marken et al., 2013). While dual enrollment participation has expanded in recent years, more descriptive findings from my study reveal that there is variation in where growth has occurred and for whom.

My study found significant variance in dual enrollment participation based on high school location. More specifically, high schools located in non-suburban regions contributed to the majority of the state's dual enrollment growth, while participation in suburban regions of the

state experienced sluggish growth. This finding resonates with the literature demonstrating that high schools located in suburban regions experience lower rates of dual enrollment participation in comparison with non-suburban regions (e.g., National Center of Education Statistics, 2019a; Pierson et al., 2017).

My findings also shed light on differences in dual enrollment participation based on suburb size. Namely, suburbs outside a principal city and inside an urbanized area with a population of 250,000 or more have significantly lower rates of dual enrollment participation compared with suburbs connected to urbanized areas with a smaller population. In addition, I found that the proportion of high schools offering dual enrollment in large and midsize suburban regions is less than high schools located in small suburban regions. These findings extend the literature's understanding of dual enrollment access within the suburbs. While the existing dual enrollment literature grouped all suburbs together (e.g., National Center of Education Statistics, 2019a; Pierson et al., 2017), my study unearthed more detailed findings demonstrating striking differences in participation and access across suburb size.

As dual enrollment participation trails in suburban regions of the state, so does participation among Students of Color. My findings revealed that Black, Hispanic or Latino, and students who identify as more than one race are less likely to engage in dual enrollment than their peers. This finding is consistent with the existing literature demonstrating racial disproportionality in dual enrollment participation and underrepresentation among Black and Hispanic or Latino students (e.g., Miller et al., 2017; Henneberger et al., 2015; National Center of Education Statistics, 2019a; Pierson et al., 2017; Pretlow & Wathington, 2013; Pretlow & Wathington, 2014).

My study also extended the body of dual enrollment access research by uncovering that as dual enrollment participation increased across the high schools within this study, so did the difference in participation rates between Students of Color and White students. This finding suggests high schools that have expanded dual enrollment access are increasingly racially segregated. Racial segregation not only leaves Students of Color out of dual enrollment spaces but disallows the potential positive effects of racial desegregation when true integration and institutional transformation towards racial equity has occurred.

My findings also revealed a permanence of racial disproportionality in dual enrollment participation among high schools located in suburban and non-suburban regions of the state. Exploring these intersections extends the fields understanding because they have yet to have been dissected in the research literature. Inquiry that bridges race and ethnicity to the suburban context is especially relevant due to striking growth in racial diversity occurring within the nation's suburbs (e.g., Frankenberg, et al., 2016; Frey, 2011; Lacy, 2016). It would be expected that as suburban high schools have diversified, so has the composition of students participating in dual enrollment. This matters given the value of dual enrollments uncovered within this study and across the existing dual enrollment literature spotlighting the academic benefits to participation (e.g., An, 2013a; An, 2013b; D'Amico et al., 2013; Karp et al., 2008; Kim & Bragg, 2008; Plasman & Gottfried, 2018; Speroni, 2011; Taylor, 2015; Wang et al., 2015).

My findings also spotlighted the existence of racial disparities in participation across three suburban classifications (i.e., large suburbs, midsize suburbs, and small suburbs). This finding demonstrates a complexity to dual enrollment access within the suburbs, which the existing dual enrollment literature had yet to explore and reveals a potential new line of inquiry to further unpack racial (in)equity in dual enrollment policy and practice. A deeper approach to

analyzing dual enrollment participation within various types of suburban communities would acknowledge the unique features of different suburb types rather than treating them as equal. An illustrative example of why this approach should be taken can be applied to large suburbs in this study and is supported through three findings: (1) in general, high schools situated in large suburban regions of the state experience lower rates of participation compared with other suburban and non-suburban classifications; (2) the existence of racial disproportionality in participation persists in large suburban regions; and (3) the population enrolled at a high school located in a large suburb is greater than the population connected to other suburb classifications and represents a more racially diverse high school student body.

Analyzing dual enrollment participation across various constructs is valuable to advancing the dual enrollment literature and to practitioners seeking to extend dual enrollment access. Quantitative means to identifying (dis)parity in dual enrollment access can serve as a mechanism to guide practitioners to where additional investigation might occur. As demonstrated in this study, a deeper understanding of a phenomenon can be uncovered when analysis recognizes unique features of students and the environments they navigate. This study echoed, extended and complicated the existing dual enrollment literature and illustrates an approach to how practitioners and scholars can leverage quantitative data to build a more robust understanding of dual enrollment access among different groups of students, high school geographic location, and their intersection.

Open-Access Isn't a Silver Bullet to Racial Parity in Dual Enrollment

My findings revealed the state technical college system's philosophy of education for employment, and how this philosophy guides the creation and maintenance of educational programming. This approach to two-year college education is codified in the state's legislature

and has resulted in meaningful employer relationships, strong employment outcomes for students, and immense value to the state's community, workforce, and economy. The reach of the technical college system's value proposition is multiplied by an open access mission common within the two-year college sector (Cohen et al., 2014). While an open access approach to two-year college education has supported enrollment of a comparatively more diverse student population to four-year institutions (Cohen et al., 2014), results from my study suggest additional policy and practice interplay with open access education to shape who engages in two-year college dual enrollment.

The state's technical college dual enrollment programming is comprised of the curriculum within the system's industry validated credentials. As high school students complete dual enrollment courses, they receive college credit within a technical college program. Access to dual enrollment is open to all students and does not consider the eligibility requirements that have historically caused racial disparities in AP and honors coursework (e.g., educator beliefs of student belonging, a history of student discipline, and standardized test results). The technical college systems open access approach to dual enrollment is unique given the majority of high schools offering dual enrollment across the nation have established eligibility requirements (Thomas et al., 2013) Yet, in the absence of dual enrollment eligibility criteria within the technical college system, Students of Color are underrepresented in dual enrollment courses. My findings uncovered three areas of policy and practice that may describe the cultivation of racial (dis)parity in dual enrollment participation. The three policy and practice domains include an institutional commitment to racial equity, articulated dual enrollment pathways, and building awareness of dual enrollment. It is important to note that these three areas do not operate in silo. Rather, they come together, intersecting, and compounding the effects of dual enrollment access.

An Institutional Commitment to Racial Equity

My findings demonstrate that dual enrollment partners are not systematic in bridging a commitment to racial equity which guides dual enrollment policy and practice. The state technical college System Office has documented its commitment to racial equity through a statewide priority known as the Commitment to Progress. This priority centers the state system's focus on racial equity which informs state policy and practice and builds on its rich history of serving and supporting historically marginalized communities. Each of the 16 technical college presidents affirmed their institution's commitment to ending systemic racism. Yet, discussions with technical college dual enrollment practitioners reveal that each institution's commitment to racial equity in dual enrollment varies. Some technical colleges have identified racial equity in dual enrollment access as a priority, while others more broadly support dual enrollment access for all.

It is important to note that a commitment to racial equity does not mean an institution isn't committed to its White students. Systemic and societal constructs have historically placed People of Color at a disadvantage in relation to their White counterparts. These forces have created an uneven playing field where some have the resources to successfully navigate complex education systems and others do not. This uneven playing field reinforces disparities forged from our history and perpetuates them from one generation to the next. A commitment to racial equity acknowledges the history that has shaped an uneven playing field and prioritizes policy and practice that aims to level the playing field and disrupt generational social reproduction.

It is also important to note that a grand and publicly displayed commitment to racial equity is not required to enact equitable policy and practice. Technical colleges and high schools

partnering to offer dual enrollment are implementing policy and practice that are equity-minded, some knowing they are equity-minded and some not. Rather, a commitment to racial equity acknowledges deep rooted history that has shaped the education system students must navigate. An acknowledgement of this history might be the first step in systematically and comprehensively reimagining how educational institutions do business. Through a lens that is responsive to a history of the uneven distribution of capital by race, practitioners can assess their existing policy and practice and craft anew which are receptive to how students holistically show up in the education system and how to support them in achieving their goals.

As my findings and others related to dual enrollment access suggest, educational disparities by race continue to manifest (e.g., Miller et al., 2017; Henneberger et al., 2015; National Center of Education Statistics, 2019a; Pierson et al., 2017; Pretlow & Wathington, 2013; Pretlow & Wathington, 2014). The work of pedagogical theorist, Gloria Ladson-Billings and her concept of educational debt makes sense of these disparities and reforms the concept of “racial achievement gaps” by situating historical, economic, sociopolitical, and moral issues as forces which have shaped racial experiences and educational disparities in access and outcomes (Ladson-Billings, 2006). To fully realize the institutional transformation that a commitment to racial equity seeks, staff must do the work necessary to form an equity mindset which acknowledges our deep-rooted history and how this history contributes to educational debt among Students of Color. Through an equity mindset, staff become more aware of how our nation’s history has led to uneven footing by race and how racial inequities in education persist today. Further, practitioners who undergo this transformation become keenly aware of how institutional policy and practice contribute to racial (in)equity, and how their own practices, behaviors, and biases influence the educational landscape students traverse.

My findings spotlight an opportunity and need for meaningful and responsive racial desegregation in dual enrollment spaces. Racial desegregation in schools is suggested to have positive effects among students such as a reduction in racial prejudice and stereotypes, an increase in friendships across racial groups, and an increased likelihood to live and work in more desegregated environments after high school (e.g., Braddock & McPartland, 1989; Pettigrew & Tropp, 2006; Tropp & Prenovost, 2008; Wells & Crain, 1994). It is important to note that logistic desegregation within schools isn't enough, though. True integration and institutional transformation towards equity inside and outside the classroom must occur. As recent research within the suburban context suggests, if these important steps are missed, desegregated schools may be plagued with overt and covert racism and lingering perceptions that Black and Hispanic or Latino students are expected of less, achieve less, and more likely to misbehave (Lewis & Diamond, 2015). These beliefs and subtle institutional culture lead to a self-fulfilling prophecy where Black and Hispanic or Latino students are placed into less academically advanced classes, experience racial microaggressions, and are disproportionately cited for misbehavior (Lewis & Diamond, 2015).

A commitment to racial equity coupled with an environment where some staff practice an equity mindset and others do not could lead to a lack of continuity in the student experience. A start and stop to racial equity in education may cause whiplash among Students of Color and lead to increasingly harmful educational experiences (Lewis & Diamond, 2015). This is why a true “all hands-on deck” approach to racial equity is necessary. To undergo full institutional transformation, all staff must do challenging, iterative, and ongoing reflective work which centers racial equity throughout educational spaces and guides institutional policy and practice.

Articulated Dual Enrollment Pathways with Value

My findings revealed that dual enrollment programming is structured in a variety of ways across dual enrollment partners. Dual enrollment practitioners leverage technical college credentials and curriculum as the building blocks of dual enrollment programming. These building blocks are used to create a breadth and depth of dual enrollment offerings. The structure of dual enrollment programming across the state varies by institution. Some dual enrollment partners offer articulated dual enrollment pathways that connect a series of related courses to promote depth of student learning while others offer a mix of courses across unrelated subjects to promote a breadth of student learning.

My findings suggest that the creation of articulated dual enrollment pathways responsive to industry needs may be an equity-minded practice. Defined pathways provide students with a start, middle, and end to their dual enrollment journey. Students know which courses they need to take and in what order. Further, they know what their courses lead to. The institution places responsibility on itself to provide students with a roadmap to their enrollment journey rather than expecting students to muddle through a mix of unconnected courses wondering the sequence of courses to enroll in and what they lead to.

While research on the equity implications of articulated dual enrollment pathways has yet to be explored prior to my study, research on structured higher education pathways as a way to catalyze degree completion rates exists in the domain of guided pathways. The guided pathways philosophy emerged from decades of research, pointing to educational structures and holistic student services as the key ingredients to strengthen two-year college degree completion (Bailey et al., 2015). Aligned with my study's finding on the importance of forming articulated dual enrollment pathways, the guided pathways philosophy suggests that institutions should evaluate

their degree offerings and reform them as clear curricular pathways to employment and further education. The guided pathways philosophy suggests that these structured offerings provide students with clarity on degree expectations and provide student service professionals with a prescribed degree map to advise from.

It is important to note that the guided pathways philosophy is largely structural based; as are my study's findings related to forming articulated dual enrollment pathways. While the creation of articulated dual enrollment pathways is a heavy lift that requires disciplined and intentional planning, it is only one piece of the puzzle. Missing from the equation, for example, is what happens in the classroom once students gain access to dual enrollment. If structured dual enrollment pathways are a lever supportive of racial parity in dual enrollment access, how is this momentum furthered by equity-minded teaching practices within the classroom? If continuity is lost between these concepts, institutions run the risk of doing more harm to marginalized communities by extending access to dual enrollment spaces while perpetuating inequities within the classroom.

My findings revealed that the state technical college system has developed a series of articulated dual enrollment pathways in partnership with area high schools and has coined them as Academies. The Academy model packages a sequence of courses along a career pathway that is aligned with "high demand jobs." The Academy models incorporate multiple college-level dual enrollment courses and extracurricular opportunities, such as employer and college visits, internships, and service-learning projects, to form an immersive experience where students acquire various forms of social and cultural capital. Academy models are intentionally packaged and staggered across a high school student's secondary education career to encompass a rich depth and breadth of college and career learning. My findings also discovered that dual

enrollment practitioners have incorporated student support within Academy models to provide spaces for student reflection in relation to their life aspirations. Further, these reflections, coupled with open access programming, allow students to determine the best fit of programming for their goals. Students can leave an Academy if it is not the right fit and enroll in other Academy options.

In comparison, a “cafeteria style” approach that offers a mix of unrelated dual enrollment courses allows students to engage in multiple career areas. Students can taste-test various industry aligned subjects while acquiring multiple forms of capital that are valuable to navigating educational and career pathways. In addition, the technical college system’s open access approach to dual enrollment allows students to enroll in various dual enrollment subjects and can help students match their interests with college and career options through rigorous college-level curriculum. Students can easily shift from one career area to another to form their aspirations about the future. While a cafeteria approach to dual enrollment offerings has its benefits, there are some limitations.

A mixture of unconnected dual enrollment courses lacks a start, middle, and end. Students are required to think about how one course relates to another and what those courses lead to. Reliance on students to build connections between dual enrollment courses and how they fit into a larger college and career pathway might stifle participation or lead to less-than-optimal enrollment decisions. An “a la carte” approach to dual enrollment programming leaves students to fend for themselves and map out which courses they should take and when; a concept that the guided pathways philosophy suggests increases student dropout in degree programs (Bailey et al., 2015). Students unfamiliar with the postsecondary system or who lack support in successfully navigating the postsecondary system may feel detracted from dual enrollment

participation when there are many course options and a lack of clear, structured dual enrollment pathways.

Structured dual enrollment pathways, or Academy models, might be a catalyst to increasing dual enrollment participation among marginalized communities. Systemic and societal forces have historically placed People of Color at a disadvantage in relation to their White counterparts. One of these disadvantages includes the opportunity to acquire capital that is valuable to navigating educational and career pathways. The result is an inequitable distribution of knowledge and social relationships that are generationally passed and prolonged over time. In the absence of clear dual enrollment pathways, students and their families are left to fend for themselves and use the tools they have at their disposal to make decisions. In relation to dual enrollment, these decisions are life changing. Dual enrollment is transformative and can shape student college and career trajectories. Students with knowledge or a social network familiar with the postsecondary system might be better able to make important dual enrollment decisions. In comparison, students with limited knowledge or no social connections familiar with dual enrollment are left to fend for themselves. These students may become confused, discouraged, and ultimately make less than desirable enrollment decisions or not participate at all. Prescribed dual enrollment pathways buffer this effect. Students know which courses they should take, when they should be taken, and what they lead to. Simply stated, articulated dual enrollment pathways connected to meaningful college and career outcomes level the playing field by providing a roadmap to upward social mobility.

Building Awareness of Dual Enrollment

“You don’t know what you don’t know.” My findings centered this sentiment as a potential cause of statewide racial disparities in dual enrollment participation. As the number of

students participating in dual enrollment has expanded in recent years, so have the differences in participation rates by race and ethnicity. My findings revealed that multiple strategies are being used across technical colleges and high schools to build student and family awareness of dual enrollment in hopes these efforts lead to future participation.

In general, an active and responsive approach to dual enrollment outreach places the onus on educational entities to build awareness of programming among students and their families. Practitioners acknowledge information voids about dual enrollment and actively seek to fill them so students and families can make an informed decision about future enrollment. In contrast, a passive approach places the responsibility of knowing about dual enrollment on the student and their family. High school students are expected to navigate the education system on their own to build their awareness of dual enrollment and ultimately enroll.

While it is noble to create and offer dual enrollment pathways, these offerings, and the benefits they transmit, are not fully realized when some students know about them, and others do not. High school and technical college interview participants shared that awareness of dual enrollment might be generationally and socially influenced. The reliance on passing generational knowledge about dual enrollment coupled with an absence of reaching students with information, may perpetuate generational social reproduction. Prior experience in education spaces provides first-hand insights into navigating education systems. Those familiar with complex education systems know what to ask, who to ask, and how to access educational opportunities, while those unfamiliar might not. Students left to their own devices may never learn about dual enrollment on their own. In the absence of dual enrollment outreach, students are required to rely on themselves or their circle of influence to successfully navigate education systems in hopes of acquiring dual enrollment information and eventually enrolling.

My findings uncovered that placing responsibility on students and families to advocate for dual enrollment access might fuel an environment where opportunity hoarding flourishes. Scholars have connected opportunity hoarding in suburban high schools to parenting practices that maximize their own children's opportunities and simultaneously limit others (e.g., Frankenberg et al., 2017; Lewis & Diamond, 2015; Lewis-McCoy, 2014). Further, scholars have found the act of opportunity hoarding is race and social class based, with privileged families using their social class and capital to successfully place their children in advanced educational spaces. Research has yet to bridge opportunity hoarding as a potential cause to racial disproportionality in dual enrollment. Nonetheless, research on placement in advanced educational tracks (e.g., AP and honors courses) has identified certain parental practices, such as advocating for access in advanced placement and honors courses and working to block educational policy that seeks to equalize access to these opportunities, that limit access to advanced educational spaces within demographically diverse schools (e.g., Frankenberg et al., 2017; Lewis & Diamond, 2015; Lewis-McCoy, 2014). Within this line of inquiry, researchers have found that racially desegregated schools are in fact racially segregated within the institution. This within school segregation creates schools within a school, and has been shown to disproportionately place low-income, Black, and Hispanic and Latino students in non-advanced educational tracks (e.g., Frankenberg et al., 2017; Mickelson, 2001; Oakes, 1985; Oakes et al., 2000; Welner & Oakes, 2005; Welton, 2013).

My findings revealed that reaching students and families with information about dual enrollment through systems where learning about it is mandatory may be a strategy to buffering opportunity hoarding. High school student agency and family resourcefulness has limits; especially in terrain where students are unfamiliar or have limited guidance from their circle of

influence. An active and responsive approach to dual enrollment outreach helps to level the playing field among students and families with varied experience and knowledge in traversing education systems. This matters because the transformative effects of dual enrollment may be a lever to uplifting marginalized communities towards a path of upward social mobility. By failing to reach students with dual enrollment information, they might miss out on an opportunity. An opportunity that has the potential to change their trajectory and expose them to capital which they can pass on to their peers and generations after.

A New Way to Think About the Student Benefits of Dual Enrollment

My findings offer a new way to think about the student benefits of dual enrollment. Namely, dual enrollment participation may advance upward social mobility. Students acquire cultural capital and social capital which shape student habitus about viability of college and career options and provide advantages as students traverse the field of educational and career pathways⁸. The transformative effects of dual enrollment participation may break the permanence of generational social reproduction formed by historical and systemic inequities which have disadvantaged People of Color, first-generation students, economically disadvantaged individuals, and their intersections. This culminating finding extends the existing dual enrollment student success literature which has suggested that student participation is associated with a higher likelihood of college entry without delay after high school graduation

⁸ Lareau (2011) uncovered nuance for scholars to consider in their research when using the construct of capital. Namely, the context in which capital is situated, how capital is activated among those who acquire it, and how institutions respond when acquired capital is activated. My findings suggest that acquired capital through dual enrollment, when activated, provides those who acquire the capital educational and career advantages. My study did not investigate the degree to which capital is activated and the variability of outcomes yielded from capital activation.

(Wang et al., 2015), as well as stronger college outcomes including GPA, persistence, credit accumulation, and degree completion (e.g., D'Amico et al., 2013; Karp et al., 2008; Kim & Bragg, 2008; Wang et al., 2015).

My study used SRT to better understand how dual enrollment participation propels upward social mobility and the implications in relation to race. Research has yet to make connections between dual enrollment and social mobility. My findings address a gap in the literature and respond to scholars calls to action that future dual enrollment research should apply theory to focus on issues of equity (An & Taylor, 2019). The existing dual enrollment literature exploring the positive effects of dual enrollment participation on educational outcomes alludes to dual enrollment as an opportunity to acquire capital but does not fully explore the types of capital students can acquire through participation and why acquiring capital through dual enrollment matters. Further, the existing literature does not explore how dual enrollment might transform student disposition towards college and careers. The use of SRT within my study fills a void in the literature by exploring each aspect of SRT (i.e., cultural capital, social capital, habitus, and field) in relation to dual enrollment participation and builds a bridge to the concept of social reproduction to detail why participation matters.

Bourdieu's (1986) concept of habitus within SRT suggests that there are a set of actions that seem viable for a person to take. My findings suggest that dual enrollment participation may expand the college and career decisions that students identified as possible, thus serving as a lever to breaking a cycle of generational social reproduction which perpetuates an uneven footing by race. Dual enrollment practitioners described a transformative quality to dual enrollment that: cultivates confidence in a student's ability to traverse college and careers, ignites a student's desire to pursue college and careers, and ultimately molds a student's perception of

college boundedness and career options. This concept is complex, intersecting with the different habitus students maintain at entry in dual enrollment spaces, and leads to varied outcomes. Simply stated, students bring who they are into the creation of their college and career aspirations and this disposition changes while participating in dual enrollment. Students acquire various forms of capital through dual enrollment and this capital has the potential to shape their habitus. For example, students who viewed themselves as college bound may reaffirm this belief through participation in dual enrollment, while students who never thought of themselves as “college material” now do. This may be one of the most powerful aspects of dual enrollment for students: a sense of clarity or inspiration of what the future might look like.

The four aspects of SRT come together to detail how dual enrollment participation propels upward social mobility. The connection between dual enrollment and upward social mobility is further reinforced by dual enrollment practitioners who revealed a series of personal stories about their own participation and who shared student stories detailing how dual enrollment advanced earnings potential, job prospects, and life trajectories. The relationship between upward social mobility and dual enrollment underscores the importance of equitable dual enrollment policy and practice which promotes access and builds a sense of urgency in addressing racial disproportionality in participation.

Implications for Policy & Practice

There are multiple implications associated with this study’s findings. These implications are associated with policy and practice for dual enrollment practitioners and can be contextualized in other education spaces and domains. It is important to note that these implications do not operate in silo. Instead, practitioners and policymakers should view these

implications as complex and intersecting concepts that come together to advance dual enrollment access.

Articulated, Industry-Validated & Credential Aligned Dual Enrollment Pathways

Dual enrollment must provide advantages to students as they navigate current and future educational and career pathways. To create programming that fully realizes the transformative effects of dual enrollment, practitioners must take a disciplined and intentional approach to crafting articulated and value-add dual enrollment that fuels upward social mobility. Strong partnership between education partners and employers is key to ensuring dual enrollment offerings are industry responsive and aligned with the curriculum of short-term credentials, associate degrees, and beyond.

Dual enrollment must provide students momentum in receiving industry-validated credentials. To create industry relevant dual enrollment, college practitioners should collaborate with employers to ensure their curriculum is providing training that builds student knowledge, skills, abilities, and competencies and adequately prepares them for employment in a specific career or industry. Further, employers should have a role in the modification of curriculum to ensure relevance in relation to the pace of change in the industry. Education practitioners should also collaborate within and across education institutions to ensure dual enrollment courses are aligned with college credentials and meet high school completion requirements. This vital step ensures that credit awarded through dual enrollment gets students on a pathway towards future education. By aligning dual enrollment programming with industry-validated credentials, students can acquire capital valued in the labor force and college credit in a degree while completing their high school graduation requirements.

As dual enrollment practitioners develop and maintain their programming, they should consider how the programming is structured and how it guides students to and through college and careers. Discrete dual enrollment courses offered in a cafeteria style model lack clarity in how courses align with a college and career pathway. This may cause confusion and lead to less-than-optimal enrollment decisions. Further, a cafeteria style model of dual enrollment course structure may negatively impact students unfamiliar with college and careers at a disproportionate rate. Instead, practitioners should prioritize articulating dual enrollment programming into a pathway which has a start, middle, and end. Articulated dual enrollment pathways structure a series of related dual enrollment courses and packages them in an organized sequence. Articulated pathways provide students with a roadmap detailing which dual enrollment courses they should take and in what order, and how the pathway leads to industry-validated credentials. Practitioners should also strive to integrate extracurricular activities, such as college and employer visits, internship opportunities, and service-learning projects, within their dual enrollment pathways so students can deepen their knowledge of college and careers outside the classroom.

Open Access Dual Enrollment that is Known

Dual enrollment must be offered without consideration of unnecessary eligibility requirements. To support student access, barriers such as placement tests should not be considered in admittance of dual enrollment programming. Eligibility requirements create hoops that high school students must jump through to gain access to dual enrollment spaces, and historically have been suggested to negatively impact Students of Color and other marginalized communities at a disproportionate rate. Ease of entry to dual enrollment programming will provide more students the ability to access dual enrollment and realize its benefits.

Institutions should also prioritize dual enrollment outreach that communicates messages related to access. To ensure all students receive information about programming, dual enrollment practitioners should erect systems in which receiving dual enrollment information is mandatory, not optional. Students and their families need to understand key features of dual enrollment, such as it being open-access, free of cost, and its value to college and careers. Dual enrollment outreach should demystify who belongs in dual enrollment spaces and ensure students and families have the information they need to make an informed decision about future participation. Placing responsibility on educational institutions to reach students and their families with dual enrollment information rather than on students levels the playing field. Students and their families are not required to advocate for dual enrollment information, rather they are provided information to support future enrollment decisions.

An All-Hands-on Deck Approach to Equity Reform

Dual enrollment practitioners must take an all-hands-on deck approach to supporting equity in dual enrollment policy and practice. Practitioners must buy into the common interest of everyone doing well while leveling the playing field so marginalized communities have equal footing. This work goes beyond a professional development workshop on diversity, equity, and inclusion. Practitioners should engage in challenging, deep thinking to unpack our nation's history of race relations, how this history has forged the unequal foundation our society and educational system is built on, and how current educational policy and practice relates to educational (in)equity.

A mind-set shift supportive of driving equity change is an individual practitioner journey. It requires deep reflection, learning, and unlearning in an iterative and sustained fashion. When practitioners have shifted towards an equity mind-set, they are keenly aware of racial inequities.

They question why institutional policy and practice operate in their current state. Further, they look inward to themselves. Practitioners with an equity-mindset critically examine their own practices, biases, and learned behaviors, and hold themselves accountable for the ways they “do business” in education spaces.

It is important to note that internal reflection towards an equity mindset must occur across all staff who impact the student experience. Not doing so can stifle true institutional transformation and create a start-and-stop educational experience for students. For example, if dual enrollment practitioners who establish policy and practice do the reflective work to form a mindset that seeks to address inequities, but faculty cultivating a learning environment inside the classroom do not, then there is a lack of continuity across staff which might do more harm to historically marginalized populations. If faculty pedagogy and instructional practices are not reflective of an equity mindset, then students who gained access to dual enrollment may be exposed to a learning environment that perpetuates historical education inequities.

Increased Dual Enrollment Data Availability

Dual enrollment practitioners must have the ability to access dual enrollment participation data and analyze these data to understand participation by location and student characteristics. To support the availability of dual enrollment participation data, education entities should standardize data collection procedures across partners and enact longitudinal data systems to store collected data. State systems should erect structures that support the collection, reporting, and storing of dual enrollment data across dual enrollment partners. Further, state systems should transform dual enrollment data into meaningful information through yearly reports, scorecards, or interactive dashboards. These data resources could be used by

practitioners to inform conversations related to dual enrollment access and participation across their institutions and broader state systems.

Implications for Future Research

The findings from this study illuminate a series of topics for future research. First, researchers should seek to further investigate dual enrollment situated in the nation's suburban high schools. The quantitative strand of this study revealed nuance to dual enrollment participation rates across suburban classification. Unpacking these differences by investigating the policy and practice across suburb classifications might help to provide clarity to differences and similarities in dual enrollment access.

A second area of future research should explore dual enrollment participation across various dual enrollment types. This study treated all dual enrollment as equal and did not account for where dual enrollment is delivered i.e., at a high school or at a college campus. Future research should assess differences in participation across these instructional locations and their intersection with student characteristics such as race and ethnicity, gender, and socioeconomic status. Further investigating differences in participation across these two spaces might spotlight a need to better understand policy and practice supportive of access at both physical locations, separately. In addition, exploring the types of capital students can acquire in these different spaces may spotlight a need to better understand how policy and practice contribute to student access.

A third area of future research should seek to understand (dis)parity in dual enrollment participation across various student intersections such as race and ethnicity, gender, and socioeconomic status and dual enrollment subjects. Accounting for these intersections could provide deeper meaning to (dis)parity in dual enrollment access and also elevate additional

policy and practice implications such as participation in dual enrollment associated with non-traditional occupations and participation in high wage or low wage pathways.

A fourth area of future research should build a more robust view of this study's findings by elevating student voices. For example, researchers might further investigate how dual enrollment participation shifts student habitus to aspiring for future college and career options or what institutional efforts helped to build student awareness of dual enrollment. Uncovering details about the student experience will provide practitioners with additional insights to inform a more student centric dual enrollment experience.

Conclusions

Dual enrollment provides students with an opportunity to explore college and careers. Students earn college credit and high school credit through enrollment in a single course. As students engage in dual enrollment curriculum, they are provided multiple opportunities to acquire social and cultural capital that are valuable as they navigate the field of educational and career pathways. Further, dual enrollment has a transformative effect on college-going aspirations. Student habitus related to college and career boundness changes and students view themselves in college or careers as a result of participating in dual enrollment. The copious benefits of dual enrollment participation culminate to form a life changing opportunity for students. Student trajectories are changed towards upward social mobility. The state technical college system dual enrollment partners believe in the value proposition of dual enrollment and have implemented multiple strategies to enhance student access. These resulting efforts have led to over 57,000 high school students participating in dual enrollment during the 2021-22 academic year. Yet, as dual enrollment participation has grown, so have racial disparities in participation.

Addressing racial disproportionality in dual enrollment participation is key to ensuring the transformative effects of dual enrollment are realized across the state technical college system. This is especially relevant in the state's suburban regions, which have experienced heightened growth in racial and socioeconomic diversity. Results from this study suggest racial disproportionality in dual enrollment access is prevalent across the state's suburban high schools, with Black, Hispanic or Latino, and students who identify as more than one race underrepresented in programming.

The positive effects of dual enrollment are significant among Students of Color. History wrought with economic and societal inequities has forged an unequal footing in People of Color's momentum to achieve upward social mobility. Dual enrollment may be a mechanism to catalyze upward social mobility and a lever to leveling the playing field among historically disenfranchised communities. Institutions which exhibited parity in dual enrollment participation by race are making strides to disrupt racialized social reproduction. Yet, in a global sense, racial disparities in participation at the state level and within suburban communities suggest that dual enrollment may be contributing to social reproduction which perpetuates racial inequities.

To advance racial equity in dual enrollment spaces, dual enrollment partners must undergo institutional transformation. Practitioners must engage in deep reflection to understand the implications of racial inequities throughout history and how these have shaped educational inequities today. They must also look at their own practices and the institution's policies to identify inequities and actively work to resolve them. This study spotlighted some policy and practice areas that are only pieces of a larger puzzle. A puzzle that must come together to ensure the benefits of dual enrollment are transmitted to students through equity-minded policy and practice.

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Appendix A: High School Partner Semi-Structured Interview Protocol

First Interview

Date/Time/Location:

Name (pseudonym):

Interviewer Note: Remind interview participant that all provided information will remain confidential. Any provided names will be transcribed as pseudonyms. Individual responses will not be tied to the participant in any reporting. Participants should be open and candid.

1. Describe how your role intersects with dual enrollment?
2. What do you believe is the purpose of dual enrollment?
3. To your knowledge, describe how dual enrollment curriculum is created? Who designs the curriculum and what is considered when the curriculum is created?
4. How do you think employers and education partners value dual enrollment?
5. How do you think dual enrollment students view themselves as a result of participating in dual enrollment courses? Do you think they feel more prepared or empowered to engage in educational or career pathways? How so? Any personal stories? *[discuss definition of educational and career pathways]*
6. Does this high school have a goal related to dual enrollment? If so, what is it?
 - a. *If the participant does not discuss equity in participation, probe with the following questions:*
 - i. *Does this high school have a goal related to equity in dual enrollment participation? [discuss definition of equity in dual enrollment participation]*
 - ii. *If so, are explicit goals established across student groups such as race/ethnicity, gender, socioeconomic status, etc.?*
 - iii. *If equity goals are established, how are they identified?*
7. I want you to think about the dual enrollment courses offered at this high school.
 - a. Describe the social networks that students in dual enrollment courses acquire? Can you think of specific networks that are formed in current dual enrollment offerings?
 - b. Do students receive any type of physical items (e.g., tools, equipment, books, etc.) as a part of participating in dual enrollment courses? What advantages do these provide students?
 - c. Describe some of the occupational knowledge, skills, abilities, competencies, or credentials that students acquire as a result of participating in dual enrollment. What advantages do these provide?

- d. Describe some of the life-skills that students build as a result of participating in dual enrollment. How do these life-skills benefit students?
- e. Do dual enrollment students have advantages when entering the labor market or higher education landscape? If so, what are they and why do you think they are advantages?

8. To your knowledge, do you know who at your high school is more or less likely to participate in dual enrollment courses? How do you know this?

- a. *Share with the participant the high school's dual enrollment participation rate data disaggregated across student groups and ask the following questions.*
 - i. *Is there anything in the data that surprises you or confirms any existing beliefs? If so, please describe.*
 - ii. *Have you seen data like this before? If yes, describe when and how it was used. If no, why might it be valuable and how could it be used?*
 - iii. *What high school dual enrollment policies and practices do you believe are contributing to the trends in dual enrollment participation rates at your high school?*
 - iv. *Any general comments about the data?*

9. Is there anything you would like to revisit that we discussed today or anything else you would like to share?

Interview Note: Thank the participant for engaging in conversation. Let them know that you may contact them if deeper meaning is needed from the information they provided. Also, let them know that they can contact you with any questions. Prompt the interviewee to complete the participant questionnaire. Also, request any written dual enrollment documents that relate to eligibility in participation.

Second Interview

Date/Time/Location:

Name (pseudonym):

Interviewer Note: Remind interview participant that all provided information will remain confidential. Any provided names will be transcribed as pseudonyms. Individual responses will not be tied to the participant in any reporting. Participants should be open and candid.

1. In our previous interview, we discussed the purpose, goals, and value of dual enrollment. During this interview we will focus more on dual enrollment policy and practice. How does your institution assess if dual enrollment has been successful? What is the process and what criteria are used to determine success? What data are used to assess dual enrollment success?

- a. *If the participant does not discuss data disaggregation or a focused assessment across student groups, probe with the following questions.*
 - i. *Does the high school analyze dual enrollment participation rates across student groups such as race/ethnicity, gender, socioeconomic status, etc.? If so, describe this process.*

- ii. *Does the high school use student voices, including those who participate and those who do not participate in dual enrollment, to identify barriers or supports to dual enrollment participation? If so, describe this process.*
2. How are students made aware of dual enrollment and what is communicated in these efforts? To what extent does the high school reach out to students and their families to build awareness of dual enrollment? Is the value of dual enrollment communicated in these awareness building efforts? If so, please describe.
 - a. *If the participant does not discuss any intentional efforts to reach minoritized communities, probe with the following question.*
 - i. *Does the high school make targeted efforts to build awareness of dual enrollment across student groups such as race/ethnicity, gender, socioeconomic status, etc.? If so, please describe these efforts.*
3. What is considered when determining which subject areas of dual enrollment will be offered?
 - a. *If the participant does not discuss intentional efforts to understand student interests, probe with the following question.*
 - i. *Does the high school communicate with students and student families to understand dual enrollment subject area interests? If so, please describe the process.*
4. Describe the institutional policies that exist related to participation in dual enrollment such as eligibility criteria and application requirements? From your perspective, how do these policies support or hinder dual enrollment participation? What supports are provided to students to encourage participation (e.g., advising, alternatives if placement tests are a requirement, transportation, reduced costs related to participation, etc.)?
5. Is there a type of student that belongs in dual enrollment? Please describe the student.
6. Do you believe that the high school's dual enrollment policies might be creating barriers for some students to participate? If yes, can you describe these students? Conversely, are policies benefiting some students? If yes, can you describe these students?
7. *Interviewer asks any questions about the reviewed dual enrollment documents received from interview #1.*
8. Describe how you think the institution could advance participation in dual enrollment.
9. Is there anything you would like to revisit that we discussed today or anything else you would like to share?

Interview Note: Thank the participant for engaging in conversation. Let them know that you may contact them if deeper meaning is needed from the information they provided. Also, let them know that they can contact you with any questions.

Appendix B: Semi-Structured Interview Participant Questionnaire

1. Please indicate your race/ethnicity:
2. Please indicate your gender:
3. Please indicate your age:
4. Have you or a family member participated in dual enrollment programming?
 - a. Myself
 - b. Family member
 - c. Both
 - d. Neither
5. For how many years has your work intersected with dual enrollment programming?
 - a. During employment at this organization _____
 - b. During employment at other organizations _____

Appendix C: Technical College System Partner Semi-Structured Interview Protocol

Date/Time/Location:

Name (pseudonym):

Interviewer Note: Remind interview participant that all provided information will remain confidential. Any provided names will be transcribed as pseudonyms. Individual responses will not be tied to the participant in any reporting. Participants should be open and candid.

1. Describe how your role intersects with dual enrollment?
2. What do you believe is the purpose of dual enrollment?
3. How do you think employers and education partners value dual enrollment?
4. How do you think dual enrollment students view themselves as a result of participating in dual enrollment courses? Do you think they feel more prepared or empowered to engage in educational or career pathways? How so? Any personal stories? [discuss definition of educational and career pathways]
5. Does the (college/System) have a goal related to dual enrollment? If so, what is it?
 - a. *If the participant does not discuss equity in participation, probe with the following questions:*
 - i. *Does this (college/System) have a goal related to equity in dual enrollment participation? [discuss definition of equity in dual enrollment participation]*
 - ii. *If so, are explicit goals established across student groups such as race/ethnicity, gender, socioeconomic status, etc.?*
 - iii. *If equity goals are established, how are they identified?*
6. I want you to think about the dual enrollment courses coordinated (through this college/across the System).
 - a. Describe the social networks that students in dual enrollment courses acquire? Can you think of specific networks that are formed in current dual enrollment offerings?
 - b. Do students receive any type of physical items (e.g., tools, equipment, books, etc.) as a part of participating in dual enrollment courses? What advantages do these provide students?
 - c. Describe some of the occupational knowledge, skills, abilities, competencies, or credentials that students acquire as a result of participating in dual enrollment. What advantages do these provide?
 - d. Describe some of the life-skills that students build as a result of participating in the course. How do these life-skills benefit students?

- e. Do dual enrollment students have advantages when entering the labor market or higher education landscape? If so, what are they and why do you think they are advantages?
7. To your knowledge, do you know who (within your college district/across the System) is more or less likely to participate in dual enrollment courses? How do you know this?
 - a. *Share with the participant the college district or System dual enrollment participation rate data disaggregated across student groups and ask the following questions.*
 - i. *Is there anything in the data that surprises you or confirms any existing beliefs? If so, please describe.*
 - ii. *Have you seen data like this before? If yes, describe when and how it was used. If no, why might it be valuable and how could it be used?*
 - iii. *What dual enrollment policies and practices do you believe are contributing to the trends in dual enrollment participation rates?*
 - iv. *Any general comments about the data?*
8. What are some of the supports or resources that the (college/System) provides to promote dual enrollment participation? How do these relate to equity in dual enrollment participation across student groups including gender, race/ethnicity, socioeconomic status, etc.? Have some been more or less effective than others?
9. Is there anything you would like to revisit that we discussed today or anything else you would like to share?

Interview Note: Thank the participant for engaging in conversation. Let them know that you may contact them if deeper meaning is needed from the information they provided. Also, let them know that they can contact you with any questions. Prompt the interviewee to complete the participant questionnaire.

Appendix D: Technical College System Partner Semi-Structured Interview Protocol

Date/Time/Location:

Name (pseudonym):

Interviewer Note: Remind interview participant that all provided information will remain confidential. Any provided names will be transcribed as pseudonyms. Individual responses will not be tied to the participant in any reporting. Participants should be open and candid.

1. Describe how your role intersects with dual enrollment?
2. What do you believe is the purpose of dual enrollment?
3. What advantages, if any, in navigating educational and career pathways do students acquire through dual enrollment?
4. Is there a type of student that belongs in dual enrollment? Please describe that student.
5. Building upon the various types of students mentioned in questions 4. How can practitioners best align their dual enrollment programming to meet various types of students' needs?
6. How are students made aware of dual enrollment and what is communicated in these efforts? To what extent does the high school reach out to students and their families to build awareness of dual enrollment? Is the value of dual enrollment communicated in these awareness building efforts? If so, please describe.
 - a. *If the participant does not discuss any intentional efforts to reach minoritized communities, probe with the following question.*
 - i. *Does the high school make targeted efforts to build awareness of dual enrollment across student groups such as race/ethnicity, gender, socioeconomic status, etc.? If so, please describe these efforts and why they matter.*
7. Describe how you think the college/high school/System could advance participation in dual enrollment?
8. Is there anything you would like to revisit that we discussed today or anything else you would like to share?

Appendix E: Interview Consent Form

Participation in Suburban High School Dual Enrollment

Date:

Thank you for volunteering to participate in a study related to high school dual enrollment. Your participation in the study will contribute to better understanding ways to support student participation in dual enrollment programming. You are free to contact Ben Konruff with any questions or concerns about this study by email konruff@wisc.edu or by phone 608-471-8389.

Participation in an audio-recorded interview will take approximately 60 to 90 minutes of your time. The conversation is intended to be enjoyable. Risks to participation are minimal (e.g., you will be asked to reveal personal, sensitive, or identifiable information when responding to open-ended questions). There will be no financial cost to participation, and you will not directly benefit from your participation.

Your name and place of employment will be kept via a pseudonym that you identify. Pseudonyms will support anonymity in your participation, but also support data tracking in this research. Only approved researchers and transcription personnel will have access to the data. All identifying information will be removed from the final dataset. Please note your pseudonym information below:

Pseudonym Name: _____

Pseudonym Place of Employment: _____

Your participation is completely voluntary. You may decline to answer any questions and you have the right to completely withdraw from participation at any time. If you do not want to continue participation during the interview, simply let the interviewer know.

If you are not satisfied with response of research team, have more questions, or want to talk with someone about your rights as a research participant, you should contact the Education and Social/Behavioral Science IRB Office at 608-265-4312

Please provide the below information including your signature if you agree to participate.

Name (please print): _____

Signature: _____ **Date:** _____

Appendix F: Recruitment Email

Participation in Suburban High School Dual Enrollment

Date:

Hello –

My name is Ben Konruff and I am currently a Ph.D. candidate at the University of Wisconsin-Madison. I am collecting data for my dissertation focused on understanding dual enrollment participation within suburban public high schools.

I am contacting you to solicit your participation in an audio-recorded interview that will take approximately 60 to 90 minutes of your time. The conversation is intended to be enjoyable. Risks to participation are minimal (e.g., you will be asked to reveal personal, sensitive, or identifiable information when responding to open-ended questions). There will be no financial cost to participation, and you will not directly benefit from your participation.

Your name and place of employment will be kept via a pseudonym that you identify. Pseudonyms will support anonymity in your participation, but also support data tracking in this research. Only the primary researcher will have access to the data during collection. All identifying information will be removed from the final dataset.

Your ongoing participation will be completely voluntary. You may decline to answer any questions and you have the right to completely withdraw from participation at any time.

Additionally, if you are not satisfied with response of research team, have more questions, or want to talk with someone about your rights as a research participant, you can contact the Education and Social/Behavioral Science IRB Office at 608-265-4312

Please let me know if you are interested in participating!

Ben Konruff