

Can state policies reduce racial disparities in the time-to-degree? Examining the interconnected role of statewide articulation agreements with dual enrollment

Executive summary

As more students, particularly those from racially minoritized backgrounds, struggle to complete the baccalaureate within the conventional four years, it has become increasingly important to consider ways to improve student trajectories through higher education. Dual enrollment is touted by proponents as a key efficiency and college affordability mechanism, allowing students to earn collegiate credit while still in high school, potentially lowering a student's time-to-degree. Dual enrollment's accessibility is partly related to community partnerships between high schools and local postsecondary institutions. This decentralization means that students may take courses through two-year or four-year institutions and in the public or private sector. The concern, however, is the ability to retain credits earned through dual enrollment if students enroll at a different institution as first-year students. The issue of credit acceptance is often especially challenging for students who take classes at a two-year college and later enroll at four-year institutions. In this study, we explore statewide articulation agreements as a promising solution, where all public institutions in a state are mandated to accept a slate of courses. Using data from Georgia, this study examines the impact of articulation on postsecondary outcomes for students enrolled at four-year colleges and universities who took dual enrollment coursework at two-year colleges. The analysis also emphasizes differences in the effect by race to understand whether the policy can be an effective mechanism to improve racial disparities in the time-to-degree.

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Key findings and implications

- We generally find that there is a positive effect of articulation implementation on the timely bachelor's degree completion of dual enrollment participants.
- The policy effect is conditional on race, however, as there is no statistically significant effect of the articulation agreement for Black students. We find that there are differences by race based on where students take dual enrollment courses and the types of courses they take.
- States seeking to enhance their graduation rates through dual enrollment may benefit from statewide articulation agreements, but additional support and advising may be needed for Black students to choose dual enrollment courses suited to their goals.

Introduction

While a bachelor's degree may be considered a four-year degree, many students take considerably longer, averaging over six years (National Center for Education Statistics [NCES], 2021). This extended *time-to-degree* is financially worrisome as students take on direct costs through additional tuition and fees and postpone their entry into the workforce. These effects are particularly burdensome for Black students, as they, on average, take longer to graduate, nearly eight years, and are more likely to accrue debt to attend college (Addo et al., 2016; Baum, 2019; NCES, 2021). Policymakers have proposed many steps to decrease the time-to-degree by increasing the speed of college credit accumulation, often called *academic momentum* (Adelman, 2006). Common measures of academic momentum include beginning college directly in the fall after graduating high school and enrolling in at least 15 credits a semester in the first year. Unfortunately, studies have shown that compared to their White peers, Black students struggle to accrue academic momentum as they are found to accumulate fewer credits per semester (Attewell et al., 2012; Attewell & Monaghan, 2016).

One promising way to enhance academic momentum is dual enrollment, sometimes called dual credit or concurrent enrollment, where high school students can earn college credit while completing their high school requirements. This opportunity can be an excellent way to ramp up early academic momentum. However, the benefit of this early college opportunity is only realized if the student's subsequent institution accepts the credits for the coursework completed for dual enrollment. Students who take classes at two-year colleges for dual enrollment and later attend a four-year college may lose their credits unless there are articulation agreements in place to facilitate credit transfer.

Dual enrollment

Dual enrollment has substantially increased in access and participation in recent decades. It is estimated that dual enrollment programs are now offered in nearly 70% of high schools nationwide, and approximately 33% of high school students have taken some number of courses in the program, which can be offered across various postsecondary contexts including both two- and four-year institutions (Spencer & Maldonado, 2021). While dual enrollment participants are largely female, higher income, and White, participation by racially minoritized students has increased substantially over the past two decades (Thomas et al., 2013; Waits et al., 2005; Xu et al., 2021). Increasing access to dual enrollment participation has been a keen interest of policymakers as most states now have some policies governing various aspects of the program (Borden et al., 2013). Some states have worked to increase dual enrollment access by providing financial assistance, including tuition waiver programs, paying for materials, and offering multiple options for where to take classes (An & Taylor, 2019).

Students who participate in dual enrollment are found to benefit from early exposure to higher education as they are more likely to enroll in college, they are better prepared for the rigor of college, and they are able to earn postsecondary credits while simultaneously earning credits to graduate from high school. However, students taking dual enrollment classes at two-year colleges may have difficulty with later transferring the credits for their courses to a four-year college due to differences in academic rigor and course numbering systems. This can have a significant impact as 20% of students transferring from a community college lose all their credits, and, on average, they lose 8.2 credits (Simone, 2014). Losing credits can devastate students: research shows that credit loss is associated with a lower likelihood of graduating (Monaghan & Attewell, 2015; Spencer, 2022). For these reasons, students may not fully benefit from participating in dual enrollment if the credits for these courses are not accepted by the college or university where they later matriculate.

Dual enrollment and statewide articulation in Georgia

In Georgia, nearly 10% of high school students—over 52,000—participated in dual enrollment in 2019 (Georgia Department of Education, 2019; Lee, 2019). This was an increase in participation precipitated by significant investments to decrease the financial burden and reduce common enrollment barriers by the Georgia legislature. While students in Georgia can enroll in classes at eligible private

colleges, most dual enrollment students take classes at public institutions. Georgia has two higher education systems, one governing four-year institutions, the University System of Georgia (USG), and one governing two-year colleges, the Technical College System of Georgia (TCSG). Much of the dual enrollment participation happens at TCSG, partly due to less stringent admissions standards than USG institutions, including not having a minimum GPA and not requiring an SAT/ACT score, though students may need to take placement tests (Griffin & McGuire, 2018). While enrolling at a TCSG institution for dual enrollment may be easier, for students who intend to enroll as a first-year student at a USG institution, the concern is the acceptance of their credits.

Statewide articulation agreements are a promising way to facilitate credit transfer between institutions by ensuring that credits for college-level courses are accepted across all public institutions within a state. In 2012, Georgia's Board of Regents approved the Complete College Georgia Articulation Agreement, a statewide articulation agreement, to facilitate the seamless transfer of general education courses for students who completed coursework at TCSG colleges and later move to a USG institution (USG Academic Affairs Division, 2023). Table 1 presents examples of courses that transfer from TCSG to USG under the articulation agreement.

Analysis

Given the guarantee of credit acceptance, Georgia's articulation agreement may facilitate academic momentum for students who participated in dual enrollment at TCSG colleges. As such, this study investigates whether the 2012 statewide articulation agreement in Georgia improved rates of on-time bachelor's degree completion for these students. To do so, our analysis uses student-level data from Georgia's Academic and Workforce Analysis and Research Data System (GA•AWARDS), which includes data on where students who went to high school or college in Georgia attended school, what courses they took, their grades, graduation and degree status, and student demographic information. Our full sample includes 25,337 students who enrolled at a USG institution as first-year students between 2008 and 2015 and took dual enrollment classes at either a TCSG or USG institution during high school.

This analysis uses difference-in-differences (DID), a quasi-experimental approach where we compare the graduation rates of USG students who took TCSG-based dual enrollment classes before and after a statewide articulation agreement was introduced in 2012, and we use a second group of students who participated in dual enrollment at USG institutions during the

same period as a way to account for changes that may affect all dual enrollment students across the state. We first look at estimates for all students from two-year institutions who took any dual enrollment classes; however, some dual enrollment classes, such as technical or vocational classes, are not eligible for transfer under the statewide articulation agreement. For this reason, we additionally estimate the direct effect of articulation policies on students who took at least one TCSG dual enrollment class covered by the agreement. Across both sets of estimations, we produce results for the entire sample, and to see if the policy effects vary by race, we estimate the results for White and Black students, who comprise 54% and 29% of Georgia dual enrollment participants, respectively. We cannot estimate other racial subgroups due to small sample size.

Findings

Several salient themes emerged from the descriptive results. First, most dual enrollment participants in Georgia identify as White and female, and relatively few come from low-income backgrounds. Second, there are also some differences in participation. In part owing to differential admissions requirements, a larger proportion of Black and low-income students participate in dual enrollment at TCSG institutions than at USG institutions. Also, while nearly all USG dual enrollment participants took general education courses (98%), only 32% of TCSG students took dual enrollment courses in general education subjects, which are those likely to be treated by the statewide articulation agreement. This is particularly important given the finding from our regression analyses, which we present in Figure 1 using predicted probabilities. Using a sample of only students who participated in dual enrollment at two-year colleges, the figure shows that for both Black and White students, accumulating a greater number of credits from treated dual enrollment coursework is associated with a higher probability of graduating, net of other factors. The figure also suggests that treated coursework is especially important for Black students as the associated probability of graduating is slightly higher than for White students who earned a similar number of credit hours for dual enrollment coursework.

Turning to the results from our DID analysis, Table 2 presents the estimated effect of the statewide articulation agreement on four-year bachelor's degree completion for students who took dual enrollment courses at a TCSG institution and subsequently enrolled at a USG institution. We present estimates for the full sample in the first column and then the breakout by racial subgroup in subsequent columns. We also

distinguish results for all students who participated in dual enrollment at TCSG colleges in Panel A, and in Panel B we present results for the reduced sample of only those who took at least one general education course treated by the policy. We present only the direction of the statistically significant results in the table, and further, we also only present the results for the models that control for underlying demographic and academic characteristics. For full results, please refer to the accompanying *Research Dialogue* report.

Overall, introducing a statewide articulation policy increased four-year bachelor's degree completion rates, suggesting that the agreement facilitated the transfer of credits from TCSG to USG institutions and increased students' academic momentum. However, the positive effects are primarily concentrated among White students. When controlling for high school GPA and sociodemographic characteristics, Black students did not have a statistically significant increase in degree completion after policy implementation. After reducing the sample to students who had taken a general education course, these findings hold: the effect of statewide articulation on degree completion is positive, but mainly for White students.

Implications

As dual enrollment becomes an increasingly popular option for high school students, touted as a more accessible form of advanced coursework, it is of critical importance to understand the mechanisms that promote positive student outcomes. Our analysis suggests that dual enrollment in the absence of articulation agreements may be inadequate in reducing racial disparities in postsecondary outcomes. Our analysis suggests that articulation agreements serve to protect college-level credits earned through dual enrollment, thereby increasing graduation outcomes. However, a key finding of this study was that there was no significant increase in rates of degree completion among Black students. This is due, in

part, to the fact that Black students were less likely to take classes treated by the articulation agreement. We found that White students earned two times as many credits in classes treated by the articulation agreement than Black students. While it is possible that nontreated courses may still transfer to a USG institution, because they are not a part of the general education requirements, students would only be transferring elective credit and not making specific progress toward degree completion.

This study highlights the importance of advising students, especially those from marginalized backgrounds, in selecting courses that will meet their goals. Indeed, our results show that taking coursework treated by the policy is associated with a high probability of graduating on time, and this is consistent for both White and Black students. Therefore, students must select the correct dual enrollment courses, effectively opting in, for them to be assisted by the statewide articulation agreement. Our investigation also points to the importance of considering credit transfer when studying dual enrollment's effects on collegiate outcomes. Further, we find a critical need for understanding how students choose to participate in dual enrollment, which dual enrollment courses to take, and if they understand how their credits may or may not transfer.

In sum, our findings suggest that articulation agreements may serve as an effective mechanism to facilitate transferring dual enrollment credits and promoting subsequent academic success. However, states, postsecondary institutions, and high schools must work to affirm that students can access dual enrollment courses and that the courses taken will transfer if they choose to enroll at a four-year college or university. These steps will be especially important to better support racially minoritized students and to leverage dual enrollment as a pathway to reduce racial disparities in timely degree completion.

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Table 1. Example descriptions of transferable general education coursework at the Technical College System of Georgia (TCSG), according to the 2012 Statewide Articulation Agreement

USG Core Curriculum Area	TCSG Course
Area A1: Communication Skills	English Composition I
	English Composition II
Area A2: Quantitative Skills	Calculus
	Math Modeling: Intro
	Quantitative Skills & Reasoning
Area C: Humanities, Fine Arts, & Ethics	American Literature
	Art Appreciation
	Public Speaking
Area D: Natural Sciences, Math, & Technology	Biology Introduction I
	Chemistry I (Intro)
	Physics I (Intro)
	Statistics (Intro)
Area E: Social Sciences	American Government
	Economics (Macro)
	Sociology (Intro)
	US History I

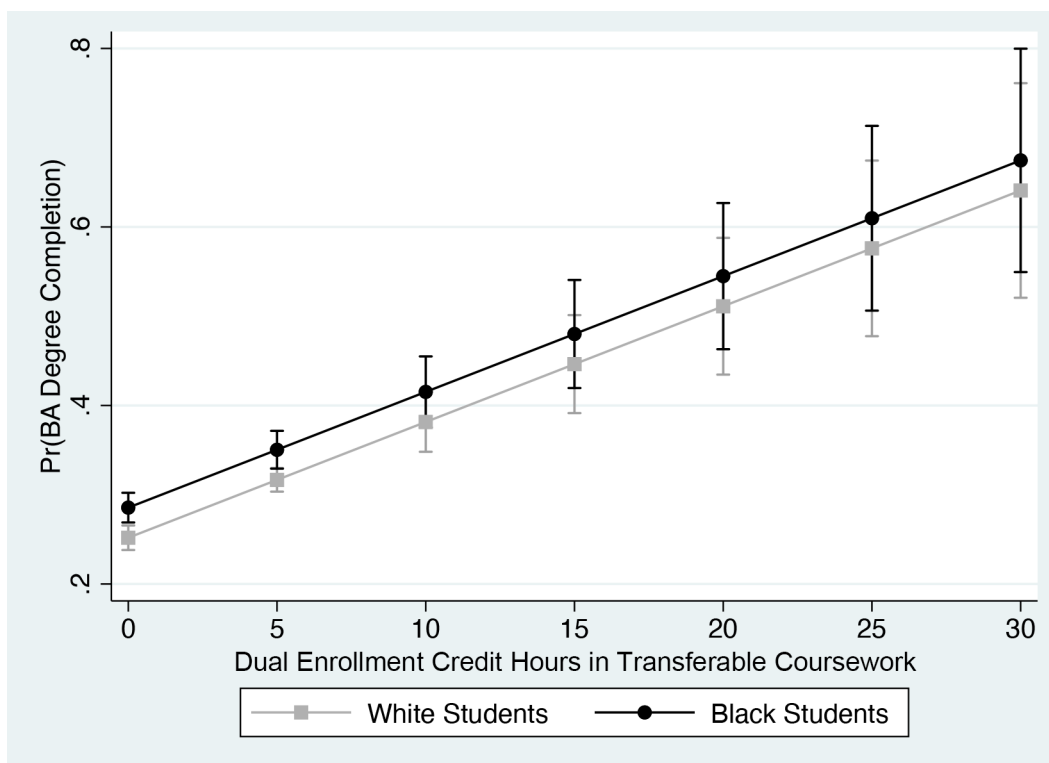
Note. The articulation agreement was effective in January 2012 (USG Academic Affairs, 2023; USG Board of Regents, 2023). Derived from: https://www.usg.edu/academic_affairs_handbook/assets/academic_affairs_handbook/docs/TCSGUSGTransfer.pdf

Table 2. Effects of the 2012 Statewide Articulation Agreement on four-year degree completion of dual enrollment participants

	Full Sample	White Students	Black Students
Panel A. Any Dual Enrollment Classes Completed at Two-Year Colleges			
Policy Effect	Positive	Positive	Not Significant
Observations	25,337	16,275	6,109
Panel B. General Education Classes Completed for Dual Enrollment at Two-Year Colleges			
Policy Effect	Positive	Positive	Not Significant
Observations	16,869	12,281	2,417

Note: All positive results were significant at $p < .001$

Figure 1. Credit hours earned for dual enrollment courses and the predicted probability of bachelor's degree completion among participants at two-year colleges (2012-2015 cohorts), by race



Note. Presented at average marginal effects with 95% confidence intervals derived from regression models of all the reduced sample that includes students enrolled at four-year public colleges in Georgia in 2012-2015 who participated in dual enrollment at a TCSG institution in high school ($n = 7,019$).

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