Supporting the Early Academic Momentum of Community College Students: Examining the Impact of Incorporating GPA into Course Placement

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Abstract

Placing community college students into their first math or English course is a critical decision with significant implications. Students placed into coursework that is too challenging may struggle to persist, while those placed into unnecessary developmental coursework may experience reduced academic momentum, delayed graduation, and increased costs. Recent research has found that using multiple measures for placement, like high school GPA alongside standardized test scores, can improve placement accuracy and student's academic outcomes. This study assesses the impact of a new multiple measure placement policy at City Colleges of Chicago, which "boosts" students with a high school GPA of 3.0 or above into higher math and English course levels, reducing their need for developmental education. In practice, the math and English placement boost applied to fewer than 5 percent and 8 percent of students, respectively, with even fewer students taking advantage of the boosted placement. Despite the small number of affected students, using a difference in regression discontinuity design we find that access to a placement boost in math or English courses decreased the number of developmental courses taken by students without affecting overall academic performance or persistence. However, it also led to delayed course-taking for these required math and English courses. Qualitative findings from interviews with students revealed a lack of awareness about the policy, suggesting a need for better communication and easier transcript sharing between Chicago Public Schools and City Colleges to maximize policy benefits.

Introduction

Research shows that early academic momentum, including taking and passing key gateway courses[1] during the first year of college, is associated with higher rates of degree completion (Attewell et. al, 2012; Wang, 2017). Yet more than two-thirds of community college students are required to take at least one developmental education course before enrolling in introductory, college-level math and English, and many never complete these courses (Chen, 2016). To explain this, some point to inadequate academic preparation at the secondary level (Bettinger et al., 2013; Scott-Clayton, 2011), while others focus on course placement policies that limit direct access to college-level coursework (Belfield & Crosta, 2012). Our country's history of racial and economic segregation, coupled with unequal funding of secondary and post-secondary education, mean that both barriers disproportionately impact Black and Latine students and students from low-income households, contributing to disparities in degree attainment.

There has been a growing effort nationally to improve course placement policies to ensure that these courses are targeted only to students who are most likely to benefit from them. Central to these efforts has been examining whether additional measures – e.g., writing assessments, self-evaluation or self-placement, and grade point average (GPA) – can portend a student's readiness for college-level coursework better than standardized tests alone. Early research has found that high school transcript information, such as courses completed, grades, and overall GPA, can be more accurate in placing students into appropriate coursework (Scott-Clayton et al., 2014; Barnett et al., 2018; Woods et al., 2018; Ganga & Mazzariello, 2019). Some argue that GPA should play a central role in placement because it acts as an aggregate measure of performance over multiple years, providing relevant insight into students' content knowledge and other behaviors, such as attendance and participation (Rutschow et al., 2019). Consistent with this line of reasoning, Bahr et al.'s recent (2019) study found that cumulative high school GPA is the most consistently useful predictor of students' performance across differing levels of math and English coursework.

[1] Gateway courses are the first credit-bearing courses in the math and English, which are required to access higher level courses across many disciplines.

Multiple measure placement policies have now been adopted by more than half of community colleges in the country and several systems have mandated them (Rutschow et al., 2019). Some states have gone even further. In 2017, California passed a law preventing colleges from using placement test for developmental education placement and prohibited placement in these courses unless a student was deemed, "highly unlikely to succeed in credit bearing coursework." A 2012 Florida law went even further, exempting all students who entered a public high school after 2002 from college placement tests and developmental coursework.

Consistent with these trends nationally, City Colleges of Chicago (CCC) has made increasing early academic momentum a central component of the district's broader efforts to increase completion and decrease the degree divide. Part of this effort has been to rethink how students are placed into developmental coursework. Traditionally placement tests were the primary tool for determining a students' first English and math course. After a comprehensive process engaging faculty and staff input and data on student performance, CCC adopted a new placement policy for entering students in February 2022. The new policy incorporated high school grade point average (GPA) with the existing placement measures to provide entry to the next level of placement for all students who have a cumulative unweighted high school GPA of 3.0 or higher based on at least seven semesters of high school coursework.

This paper employs a difference-in-regression discontinuity design to examine the effect of the new placement policy on students' math and English course taking and performance as well as overall GPA and persistence in college. We find that a significant number of students who could have been eligible for the boost (high school GPA of 3.0+) were not either because their GPA expired[2] or they did not submit their transcript to CCC. Compared to other groups, Black students were less likely to have a high school GPA of 3.0 or higher and unexpired GPAs and/or submitted transcripts. However, a higher proportion of Black students who did meet those criteria had their placement changed than any other racial or ethnic group.

[2] GPA is considered valid for 36 months after high school graduation for English and 18 months for Math

When examining course performance, we found that the policy change increased the average level of English course boosted students took. However, boosted students were significantly less likely to take any math course in their first year in college and less likely to pass college-level math in their first two years of college. There were no other changes in math course-taking or performance. There were no significant changes in students' fall-to-spring or year-to-year persistence or overall GPA.

To contextualize these findings, we interviewed students and faculty and administered a survey to all students enrolled in developmental or gateway coursework. Lack of clarity about the district's placement policy was common among both students and faculty. Students generally did not understand how they were placed into their English and math courses but were generally satisfied with their placement. Some of the faculty interviewed held misperceptions about how the policy was being implemented, with many believing incorrectly that high school GPA was the sole factor in placement under the new policy. Taken as a whole, the study results suggest that changes in placement policy alone may not be enough to change student performance, especially if such efforts are not coupled with communication about the policy and advising focused on taking development and gateway courses early on.

The paper proceeds as follows: We begin by situating the current study in the literature around academic momentum and efforts to improve dev ed placement. We then provide a more detailed description of the context at CCC and the policy change we are studying. Next, we provide an overview of the data and analytical strategy employed. We conclude by presenting the study findings and discussing their policy implications.

Literature Review

Early academic momentum refers to a student's progress completing credit-bearing courses, particularly gateway courses in math and English, within their first year of college. Research consistently shows that successfully passing these foundational courses significantly boosts the likelihood of degree completion (Attewell et al., 2012; Wang, 2017). Beyond improving graduation odds, early completion of

these courses helps students accumulate essential credits and establishes a strong foundation for continued academic success (Adelman, 1999, 2006). As a result, academic momentum in the first year serves as a powerful predictor of long-term educational attainment (Clovis & Chang, 2021).

Despite its importance, many students, particularly those attending community colleges and other open-access institutions, face obstacles to achieving early academic momentum. More than two-thirds of community college students are required to complete at least one developmental education course before enrolling in credit-bearing coursework, significantly delaying progress toward degree completion and contributing to attrition (Chen, 2016). Many students who enroll in developmental coursework struggle to advance to and succeed in college-level courses, often resulting in prolonged time in school, increased financial burdens, and lower completion rates (Belfield & Crosta, 2012).

A key contributor to these challenges is the widespread requirement for students to complete non-credit-bearing developmental courses before they can enroll in gateway math and English courses required for most degree programs (Scott-Clayton, 2011). While these requirements are intended to provide academic support, they often act as barriers to degree attainment. Because developmental courses do not count toward degree requirements, they extend students' time in college, increase financial strain, and delay completion (Burdman, 2012). Research on the effectiveness of developmental education presents mixed findings—some studies suggest these courses offer necessary support, while others indicate they discourage persistence and lower completion rates (Cullinan et al., 2018).

Traditional placement policies often rely on standardized test scores such as the SAT or ACT or institution-specific assessments, which research has shown to be poor predictors of student success in gateway courses (Bahr 2016). Single standardized tests fail to capture students' full academic potential and frequently result in under placement, where students who could succeed in college-level courses are instead assigned to developmental education (Belfield and Crosta 2012; Scott-Clayton 2021). Traditional placement policies disproportionately impact Black, Latine, and students from low-income households, perpetuating existing educational disparities (Rutschow et al. 2019). To address these issues, an increasing

number of institutions are adopting multiple measures for placement, incorporating high school GPA, coursework, and writing assessments alongside standardized test scores (Scott-Clayton et al. 2014; Barnett et al. 2018).

Recent research has found that high school transcript information can be more accurate in placing students into appropriate coursework than standardized tests (Scott-Clayton et al., 2014; Barnett et al., 2018; Woods et al., 2018; Ganga & Mazzariello, 2019). In particular, cumulative high school GPA has been found to be a strong predictor of student readiness for college-level work (Bahr et al., 2019). However, some simulations have suggested that using high school GPA alone as a placement measure instead of in combination with test scores might decrease college level placement for Black students in urban areas (Scott-Clayton and Stacey, 2015). Recent experiments which randomized the use of only test scores or combination of test scores and high school GPA to place students into math and English courses found that using multiple placement measures improves academic performance when it allows students to bypass a developmental course they otherwise would have been required to take (Litschwartz et al., 2024). However, using multiple measures had a negative impact on academic performance when it imposed a developmental course requirement on students who would otherwise have been placed directly into a college-level course. This trend was even true for students with high school GPAs below 3.0. This research suggests that using high school GPA in placement decisions in a manner that allows higher GPA students to bypass developmental coursework without imposing developmental coursework on lower GPA students whose test scores alone were high enough to place them into college level coursework, might increase academic performance for students within an urban community college system like Chicago's.

Developmental Placement at City Colleges of Chicago

With most new students entering CCC required to take developmental courses in English (65%) and math (62%), CCC has increasingly made early academic momentum a core component of district efforts to increase completion and eliminate the degree gap. Prior to the fall of 2018, course placement policies differed across the seven colleges in the CCC system. To streamline placement for students (many

of whom take courses at multiple colleges during their time at CCC), the district adopted a standardized approach to course placement. Beginning in the fall of 2018 through the Spring of 2024 (the period we evaluate), all students in the district with a math SAT score below 530 take the ALEKS Placement, Preparation, and Learning (ALEKS PPL) assessment to determine their first math course. In parallel, CCC English faculty developed a homegrown holistic placement model (known as the Read to Write or RtW) that aims to combat biases inherent in standardized tests through student self-assessment, adaptations for English language learners, and culturally relevant reading passages. All students with an English SAT score below 540 took the RtW to determine their first English course. Around this time, the district established a key performance indicator (KPI) tracking rates of taking and passing college-level English and math.

Building on these early efforts, in 2019, CCC convened a cross-functional committee of faculty and staff to identify changes to policy and practice that could increase early academic momentum. One of the committee's core recommendations was to develop a placement profile that integrates multiple measures of student aptitude to pilot and consider for use district wide. The committee expressed a particular desire to better understand the power of high school GPA in the Chicago context to predict student performance in gateway math and English.

At the same time, policymakers at the state level started to focus on supporting early academic momentum and developmental education placement. In March 2021, Governor Pritzker signed the Developmental Education Reform Act (DERA) into law. As a part of a broader set of reforms aimed at addressing inequities in degree completion by race and income status and instituting evidenced-based practices for placement and delivery of developmental education, the Act mandated the use of multiple measures for developmental education placement for the first time in Illinois. Specifically, the Act states, “On or before May 1, 2022, a community college shall use each of the following measures, as appropriate, to determine the placement of a student in introductory college-level English language or mathematics coursework: (1) A student's cumulative high school grade point average; (2) A student's successful completion of an appropriate high school transition course in mathematics or English; (3) A student's

successful completion of an appropriate developmental education or introductory college-level English language or mathematics course at another regionally accredited postsecondary educational institution" (Illinois General Assembly, 2022).

The recommendations of the cross-functional CCC committee combined with this mandate from the state legislation provided the impetus for CCC to reevaluate its developmental placement policy with specific attention paid to the incorporation of high school GPA. To that end, the district partnered with the Inclusive Economy Lab (IEL) to examine the predictive power of GPA and explore the role it might play in a revised placement profile. Following results from the analysis on the predictive power of GPA, CCC developed and implemented a new boost policy that incorporated high school grade point average (GPA) with the existing placement measures. The new placement policy went into effect in Fall 2022.

Before and after implementation of the new policy, a subset of CCC matriculants are directly placed into gateway coursework based on successfully completing transitional coursework in high school, scores on college placement exams (e.g ACT or SAT), or having qualifying transfer credits from another higher education institution. All other new students are required to take the ALEKS and RTW placement exams. Based on their scores on these assessments, students are placed into one of four levels:

- Foundational Studies (FS): Foundational Studies constitutes a sequence of several courses in math, reading, and writing intended for students who may not yet possess the academic skills to succeed in college-level courses. The courses in this sequence are pass/fail. Successful completion of all of the courses in the math or English FS and developmental education sequence is required to move on to college-level coursework.
- Developmental Education (Dev Ed): Like Foundational Studies, these are courses intended for students who may not yet possess the academic skills to successfully complete college-level coursework. However, successful completion of only a single, graded course is required to move on to college-level coursework.

- Advanced Developmental Education (math) & College-Level with Supports (English): Students who may be ready to complete college-level coursework with the help of additional support are placed in this level. These students can enroll in college-level math or English course but also must enroll in a one-credit (math) or three-credit (English) co-requisite course.
- College-Level: Students with qualifying assessment scores are directly placed into gateway coursework and are immediately eligible to earn college credits for completion. Gateway courses are college level, credit bearing courses that are necessary to pass before moving on to upper-level college coursework.

Starting with the Fall 2022 cohort, students entering CCC with an unweighted high school GPA of 3.0 or higher in either their 7th or final semester were placed one level higher than they would have been under the previous policy, unless they placed into Foundational Studies. This was determined separately for each of math and English—that is, a student with a qualifying GPA could be boosted in one subject but not the other depending on their scores in each of the ALEKS and RTW. The placement of students who do not qualify for this boost remained unchanged. One important element of this policy to note is that students could not receive the boost unless they elected to submit their high school transcript to CCC, which is not required for enrollment. In addition, their GPA could "expire" after a given amount of time, rendering them ineligible to receive the boost. For math, this was 18 months, while for English, it was three years. The time frame for GPA expiration was determined by each respective department. The reasoning behind GPA expiration is that the further a student is from high school graduation, the less predictive their GPA becomes of future academic success.

Methodology

Our analytic approach takes advantage of the fact that new multiple measure placement policy incorporates a strict 3.0 cumulative high school GPA cutoff to provide access to a placement boost. Specifically, we compare students who are just above and just below the 3.0 GPA cutoff, before and after policy implementation in a difference-in-regression discontinuity framework. This strategy allows us to

isolate the causal effect of being boosted up a placement level for students near the 3.0 GPA cutoff from the effect of other opportunities that are available to students attending the City Colleges of Chicago with a 3.0 GPA or higher, such as the Star Scholarship.

We draw on administrative data from Chicago Public Schools (CPS) and the City Colleges of Chicago (CCC). By linking these administrative datasets together, we observe demographic information, cumulative high school GPA, standardized test scores, as well as course-level enrollment and academic performance at CCC. Our full sample includes students who graduated from CPS between Spring 2009 and Spring 2023 and enrolled in an associate degree-granting program at CCC between Fall 2018 and Spring 2024. This includes students who were both new to college and those who transferred from other post-secondary institutions. In total, we observe 29,044 students, of which 19,988 matriculated prior to the new policy (between Fall 2018 and Spring 2022) and 9,056 matriculated following the start of the new policy (between Fall 2022 and Spring 2024). Our analytic sample for the difference-in-discontinuity design only includes students whose placement could have been changed by the new multiple measure placement, whether they enrolled before or after its introduction. For example, this means that a student who would have placed into both college-level math and English under both the original policy and the new policy would have been excluded from our sample, as there would have been no way for the boost to affect their placement. We also focus on students for whom we can observe for at least two semesters post matriculation. Note that this sample includes students who did not take math or English courses to allow us to see whether higher placement due to the boost influenced students' course-taking.

Our outcomes of interest include math and English course enrollment, completion, and performance at CCC as well as persistence and overall degree attainment. We model outcome Y_{ijt} for student i who graduated from CPS high school j and enrolled at CCC in term t as (1).

$$Y_{ijt} = \beta_1\left(D_{ijt} \times Post_{ijt}\right) + \beta_2 GPA_{ijt} + \beta_3 D_{ijt} + \beta_4 Post_{ijt} + \beta_5\left(GPA_{ijt} \times D_{ijt}\right) + \beta_6\left(GPA_{ijt} \times Post_{ijt}\right) + \beta_7\left(GPA_{ijt} \times D_{ijt} \times Post_{ijt}\right) + Start\_Term_{ijt} + \delta_j + \varepsilon_{ijt}$$

Where D_{ijt} is a dummy variable which indicates whether student i is above the 3.0 cumulative high school GPA cutoff, $Post_{ijt}$is a dummy variable indicating whether a student's first semester in CCC was after the new placement policy was implemented, δ_j indicates whether a student's first term at CCC was in the Fall/Spring/Summer, and finally GPA_{ijt} is a student's unweighted high school GPA from their second to last semester in high school centered around 3.0.

We limit our data to students who are near the 3.0 GPA cutoff. In particular we use a 0.5 GPA bandwidth around the cutoff. In Appendix Figures 2-4, we show that our analysis is robust to other choices of bandwidth. Assuming that potential outcomes are smooth across the 3.0 GPA threshold, $\beta_1$identifies the effect of being boosted up a placement level for students near the 3.0 cumulative high school GPA cutoff under a multiple measures placement policy. Importantly, it is the combined effect for students who are boosted from a pre-requisite developmental course into a co-requisite developmental course and students who are boosted from a co-requisite developmental course into a college level course.

To test whether students are able to manipulate their cumulative high school GPA to gain access to the policy (which would violate our necessary assumption that potential outcomes are smooth across the threshold), we examine whether the density of the running variable is smooth across the threshold (Appendix Figure 5). We see a sharp discontinuity in the density of students right above versus right below the 3.0 GPA cutoff. However, we also see similar discontinuities at all GPA values that are multiples of 0.25. This is because CPS assigns whole letter grades (no +/- grades), making those GPA values more common. Since we see a similar sized discontinuity in the density of the running variable at the cutoff before and after policy was implemented, we take this as evidence that students are not manipulating their GPA to be just over the threshold to be eligible for the placement boost in response to this new multiple measure placement policy. We also see no change in discontinuities of demographics for students near the cutoff before and after the policy (Appendix Table 1), which we take as further evidence that students are not sorting themselves on either side of the cutoff in response to the policy.

We also utilize qualitative research methods by conducting and analyzing interviews with those grounded in the experiences of those directly impacted by the policy: college faculty, instructors, and students. Specifically, we conducted interviews with 14 purposively selected CCC students who represented all seven CCC colleges and placed into different courses in the developmental education sequence. The research team also interviewed 14 CCC instructors who teach math and English courses in the developmental education sequence across the seven CCC college. All the interviews were recorded (with permission) and transcribed. The research team employed an inductive and deductive approach to coding the interview responses to identify key themes and lessons that could inform the developmental education policy moving forward. Specific attention was paid to where responses triangulate and differ across respondent type, CCC college, and entry point into the development educational sequence.

The in-depth interviews were supplemented by an online survey administered to students enrolled in developmental education or college level coursework in Fall 2022 and Spring 2023. In total, there were 1,408 student responses to the survey, with 874 who were enrolled in Fall 2022 and 534 who were enrolled in Spring 2023. However, only about 75%, or 1,066, of the respondents were able to be linked to CCC administrative data since some students inputted faulty Student IDs in the survey and some students in the administrative data set were not a part of our sample. For all respondents, we are able to see the level of the first math or English course that they enrolled in, though this is only true for 1273 out of the total 1408 students, since the other 135 students did not indicate that they were in a gateway sequence course. For the respondents that were able to be linked to the CCC administrative dataset, we are able to see their race/ethnicity and their CCC home college. Some students responded to the survey both in the Fall and the Spring, and their responses were not dropped since both sets of answers are relevant to our research.

In Table 1 below, we see the total number and proportion of respondents by race/ethnicity, CCC home college, and the level of first math or English course a student enrolled in.

Table 1: Full Sample and Online Survey Sample Descriptives

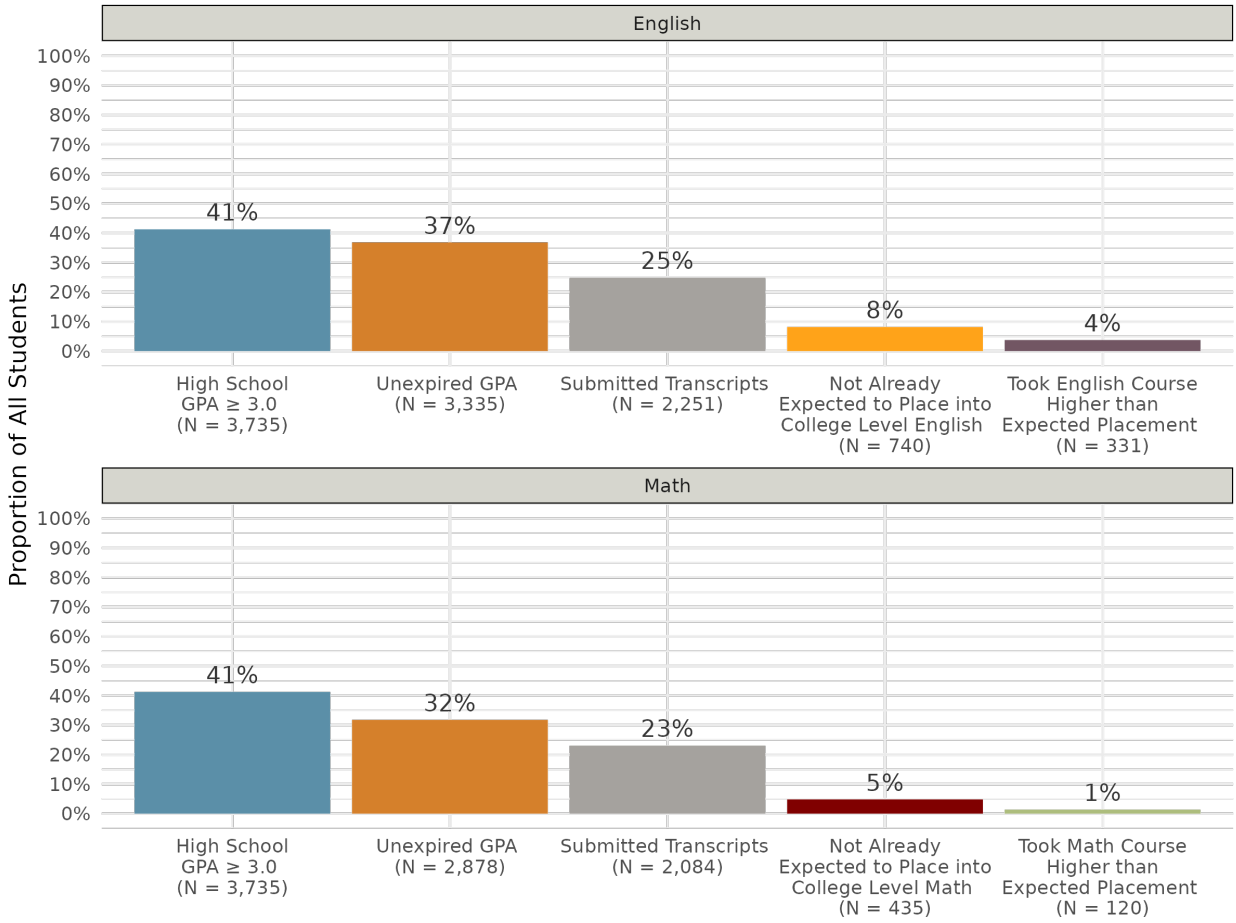
	Study Sample		Survey Sample	
	N	Percent	N	Percent
Race/Ethnicity				
Asian	1,204	4.1%	80	7.5%
Black	7,415	25.5%	293	27.5%
Hispanic	17,623	60.7%	567	53.2%
Other	858	3.0%	33	3.1%
White	1,944	6.7%	93	8.7%
CCC Home College				
Harold Washington	6,335	21.8%	239	22.4%
Harry S Truman	2,345	8.1%	129	12.1%
Kennedy-King	1,468	5.1%	51	4.8%
Malcolm X	6,923	23.8%	320	30.0%
Olive-Harvey	1,424	4.9%	53	5.0%
Richard J. Daley	3,686	12.7%	94	8.8%
Wilbur Wright	6,863	23.6%	180	16.9%
Total	29,044	100%	1066	100%
English Course Level				
College Level	8,034	27.7%	349	27.4%
College Level With Supports	4,313	14.8%	242	19%
Dev-Ed	4,800	16.5%	137	10.8%
Foundational Studies	797	2.7%	31	2.4%
Not Enrolled in English	11,100	38.2%	514	40.4%
Math Course Level				
College Level	6,868	23.6%	302	23.7%
Dev-Ed (Advanced)	3,255	11.2%	119	9.3%
Dev-Ed (Traditional)	1,444	5.0%	61	4.8%
Foundational Studies	898	3.1%	32	2.5%
Not Enrolled in Math	16,579	57.1%	759	59.7%
Total	29,044	100%	1273	100%

Results

We begin with a descriptive picture of how student placement changed across the developmental education sequence under the new multiple measure placement policy. Specifically, we estimate which students were eligible for the boost, which students received the boost, which levels these students were being boosted into and from; and whether the boost appeared to disparately apply to some groups more than others. First, we examine the proportion of students in our sample that graduated from a CPS high school with a cumulative GPA of 3.0 or higher.

In Figure 1, we see that approximately 41 percent of students who enrolled in CCC after the multiple measure placement policy was implemented had a cumulative high school GPA high enough to qualify for the placement boost. In Appendix Figure 1, we see that Asian students were most likely to qualify for the placement boost and Black students were least likely, mirroring findings from other studies which found that relying solely on GPA for placement could decrease college level placement for Black students in urban areas (Scott-Clayton and Stacey, 2015). However, just because students had a high enough GPA, does not mean their placement was boosted; students also needed to submit their transcripts to CCC and their GPA needed to be unexpired. Approximately two-thirds of students with high school GPAs of 3.0 or higher submitted their transcripts (Figure 1). This suggests that some students who may have been eligible for the boost could not be considered because they did not provide their transcripts. Focusing only on students with GPAs above the cutoff who submitted their transcripts, we then constructed an indicator for whether a students' GPA was expired. This indicator varies by subject since GPAs expire for the purposes of an English boost after 3 years and expire for the purposes of a Math boost after 18 months. The majority of students who submitted their transcripts had an unexpired GPA (Figure 1).

Figure 1: Proportion of Students That Meet Each Boost Requirement by Subject



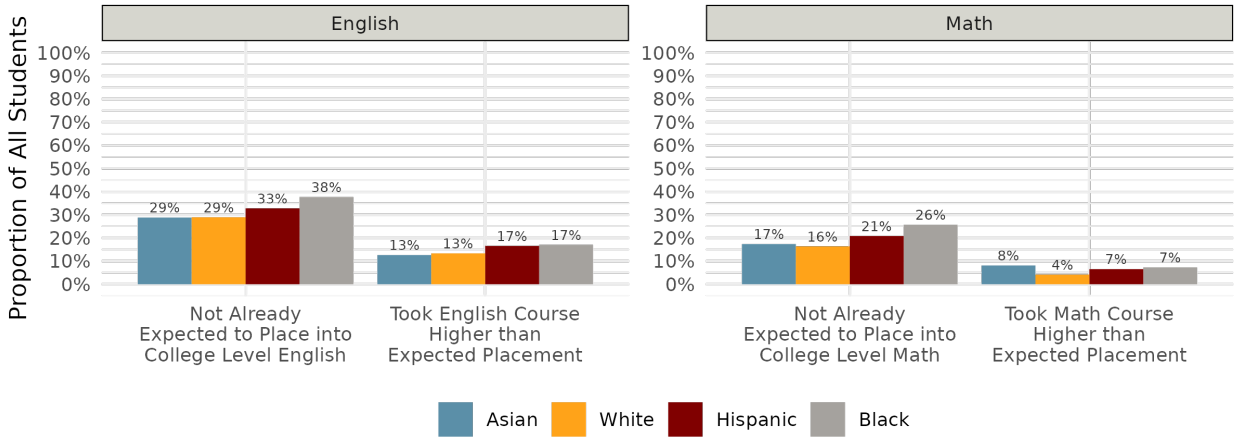
Note: The sample of students in this figure includes all students who enrolled in CCC after the new multiple measure placement policy was implemented. We estimate whether a student's GPA is expired at the time of enrollment using a students high school graduation date and the term that they first enrolled in CCC. When estimating the proportion of students who had an unexpired GPA above 3.0 and submitted their transcript, we use information from their actual submitted GPA to calculate expiration and whether they were above the 3.0 GPA threshold. We estimate students' expected placement (without a boost) based off of standardized test scores and transfer credits. Each category is a subset of the previous category (e.g. submitted transcripts contains all students whose high school GPA ≥ 3.0 and they submitted their transcripts.

Finally, just a because a student is boost eligible (meaning they have an unexpired high school GPA of 3.0 or higher and they submitted their transcripts to CCC) does not mean the boost would apply to them if they would have already placed into college level courses. We construct a variable containing a student's expected math and English placement under the original policy using their standardized test scores to determine which students were boost applicable, meaning they would not have placed directly into college level coursework without being boosted. Finally, we combined their expected placement and observed course-taking to determine which of these boost applicable students actually took a class that was a higher

level than expected and therefore likely received a boost. We estimate that 8 percent of students that matriculated following the start of the boost policy were eligible and could have benefited from an English boost (e.g. boost applicable), but only 4 percent enrolled in an English course that was greater than their predicted placement without the boost. Similarly, only 5 percent of students were eligible and could have benefited from a math boost, but only 1 percent were likely to have been boosted. Students that were boost applicable but did not enroll in a course greater than their predicted placement either enrolled in their original placement or did not enroll in a math or English course. Among those who likely received the boost, most of them were boosted out of co-requisite or advanced Dev-Ed courses and into college level courses and the remainder were boosted out of pre-requisite or traditional Dev-Ed courses and into co-requisite or advanced Dev-Ed courses (Appendix Figure 6).

Because traditional placement policies that don't account for GPA have led to placement into lower-level courses for Black and Latine students, we investigated the degree to which the boost changed the placement of students of different ethnic and racial backgrounds. We found that Black students were much less likely to have a qualifying GPA and were also less likely to have submitted an unexpired GPA (Appendix Figure 1). However, conditional on boost eligibility, they received the boost at a higher rate than students from other racial and ethnic groups (Figure 2): that is, a higher proportion of Black students thatwould have placed into Dev Ed or Advanced Dev Ed/College Level with Supports were placed into a level higher, since they were less likely to otherwise qualify for college-level coursework.

Figure 2: Proportion of Students That were Boost Applicable or Likely Boosted Conditional on Boost Eligibility by Race/Ethnicity



Note: The sample of students in this figure includes all students who were eligible for the boost (e.g. have an unexpired high school GPA greater than or equal to 3.0 and submitted their transcripts to CCC) and who enrolled in CCC after the new multiple measure placement policy was implemented. We estimate students' expected placement based off of standardized test scores and transfer credits. Boost eligible students who were not already expected to place into college level courses without the boost are considered boost applicable and students who took a course higher than their expected placement are considered likely to have been boosted.

Next, we present results from our causal analysis which uses a difference-in-regression discontinuity design to estimate the impact of being boosted up a placement level for boost applicable students near the 3.0 cumulative high school GPA cutoff. The outcomes we focus on include course enrollment, completion and performance at CCC as well as likelihood of taking and passing college level math and English in the first year of enrollment, persistence to a second year in college, and degree attainment. We start by estimating whether being above the boost cutoff had any causal effect on the first math or English course a student enrolls in. To do this, we assigned each course a placement level number, from zero for Foundational Studies up to three for college-level, and used estimated Equation (1) to test whether a student just above the 3.0 GPA threshold took, on average, a higher-level first math or English course. We found that on average, boost applicable students just above the threshold who enrolled in a math or English course saw a statistically significant increase in the level of their first English course. (Figure 4a, Table 2), but no statistically significant increase in the level of those students' first math course (Figure 4b, Table 3). This is expected given the very small number of students we estimated to have received a math boost in Figure 1.

Figure 4a: Discontinuity in English Course Level Before and After New Placement Policy

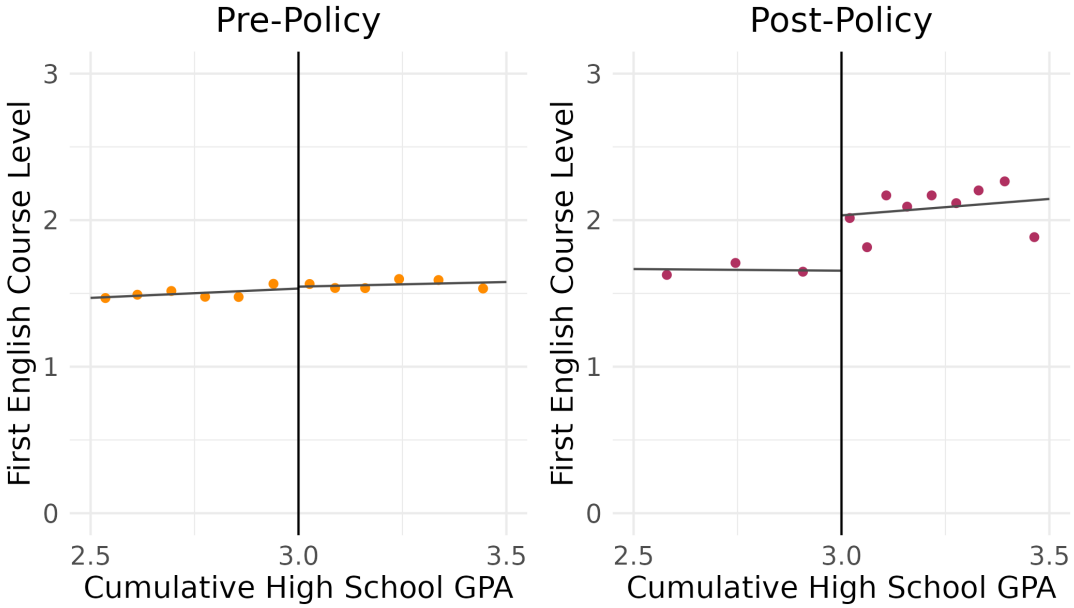
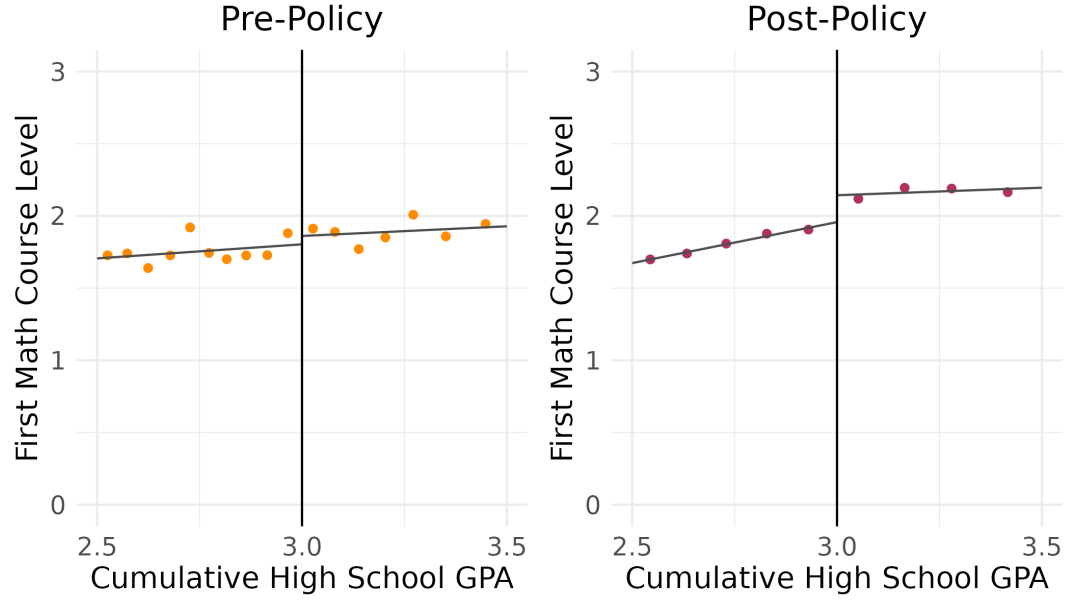


Figure 4b: Discontinuity in Math Course Level Before and After New Placement Policy



Note: This figure shows the average discontinuity in the level of the first math or English course, for boost applicable students just below versus just above the 3.0 cumulative high school GPA cutoff, before and after the policy was implemented. Foundational courses are leveled as 0, Traditional Dev-Ed courses are leveled as 1, Advanced Dev-Ed and College Level with Supports are leveled as 2, finally College Level courses are leveled as 3.

Having access to an English placement boost slightly decreased the likelihood that a student takes their first English course within a year of enrolling in CCC, but otherwise had no observable impact whether positive or negative on their successful completion of their first English course, conditional on enrolling

and completing, their ability to take or pass college-level English within their first year or their first two years, or in their academic performance in any of their English courses (Table 2).

Table 2: Impact of Access to English Placement Boost on College English Outcomes

Outcome	Estimate	Std. Error	P-Value	Sample Size
First English Course Level	0.319***	0.091	0.001	4,958
Enrolled in Any English Course First Year	-0.091*	0.055	0.097	7,886
Passed First English Course First Year	-0.011	0.056	0.850	7,886
Enrolled in College Level English First Year	0.054	0.045	0.228	7,886
Enrolled in College Level English First Year	0.022	0.051	0.673	7,886
Enrolled in English Course within Two Years	-0.088	0.069	0.202	6,664
Grade in First English Course	0.240	0.231	0.302	4,519
First Year GPA in College Level English Courses	-0.103	0.189	0.588	3,942
Grade in First Gateway English Course	0.602	0.410	0.145	1,126

Note: This table shows difference in discontinuity estimates of the effect of having access to an English placement boost on a variety of outcomes related to taking and passing English coursework at CCC.
**** p<0.01; ** p<0.05; * p<0.1*

Similarly, access to a math placement boost decreased the likelihood of students enrolling in any math courses within their first two years at CCC, but did not impact their academic performance in any math courses, conditional on enrolling (Table 3).

Table 3: Impact of Access to Math Placement Boost on College Math Outcomes

Outcome	Estimate	Std. Error	P-Value	Sample Size
First Math Course Level	0.092	0.142	0.515	2,751
Enrolled in Any Math Course First Year	-0.141**	0.066	0.035	6,034
Passed First Math Course First Year	-0.066	0.049	0.185	6,034
Enrolled in College Level Math First Year	-0.046	0.064	0.468	6,034
Passed College Level Math First Year	-0.082	0.050	0.104	6,034
Passed Math Course within Two Years	-0.161**	0.071	0.024	5,107
Grade in First Math Course	0.281	0.247	0.256	2,708
First Year GPA in College-Level Math Courses	-0.188	0.299	0.531	1,893
Grade in First Gateway Math Course	0.258	1.460	0.861	110

Note: This table shows difference in discontinuity estimates of the effect of having access to a math placement boost on a variety of outcomes related to taking and passing math coursework at CCC.
**** p<0.01; ** p<0.05; * p<0.1*

These findings suggest that when students are boosted out of developmental coursework, they may be more likely to delay their first English or math course. This could be because students who place into higher levels need to complete only one course or one course with a co-requisite rather than a sequence of multiple classes, so feel less urgency to take a math or English course right away. This effect is stronger for math courses than English courses and may be more costly as seen in the reduction in the portion of students taking and passing college-level math within two years of matriculating.

Access to placement boosts in both math and English courses also had no observable impact on overall measures of student success such as college GPA, persistence into their second semester, or persistence into their second year (Table 4). However, we do see a statistically significant decrease in the number of Dev-Ed courses a student enrolled in and earned.

Table 4: Impact of Access to a Math or English Placement Boost on General College Outcomes

Outcome	Estimate	Std. Error	P-Value	Sample Size
Persistence to Second Semester	-0.008	0.045	0.850	10,046
Persistence to Second Year	-0.081	0.050	0.107	8,772
Enrolled College Level Course First Year	0.001	0.041	0.979	10,046
First Year Overall College GPA	0.180	0.134	0.180	8,416
First Year Non-Gateway College GPA	-0.003	0.175	0.986	7,549
Number of College Level Credits Enrolled First Year	0.265	0.641	0.680	10,046
Number of College Level Credits Enrolled & Completed First Year	0.324	0.684	0.636	10,046
Number of Dev-Ed Credits Enrolled First Year	-1.495***	0.454	0.001	10,046
Number of Dev-Ed Credits Enrolled & Completed First Year	-0.740*	0.383	0.055	10,046

Note: This table shows difference in discontinuity estimates of the effect of having access to a math and English placement boost on a variety of general college outcomes at CCC.
**** p<0.01; ** p<0.05; * p<0.1*

Interviews with students reveal that students were not sure why or how they placed into their courses. In fact, many students were unfamiliar with the new policy and were often unaware that factors other than GPA influenced their course selection. In addition, interviewed students often reported having conversations with faculty or their advisor about their placement, but these discussions left students without a clear understanding of the rationale behind their placement, or the process involved. A few students recalled being asked for their high school transcripts, but not one student acknowledged or could make the connection between their course placement and the new boost policy. As one student from Daley College explained *"*It was just, you're taking this course or put this course into your cart and add it and that's it. There's no explanation.*"*

Even though most students were unsure as to why they were placed in certain courses, students overwhelmingly felt their placement suited their expectations and academic needs. Students frequently

reported that they felt that their skill set was most appropriate in the course they placed into. The few students that did report initial skepticism of their placement often changed their minds as they progressed through their course. As one student from Daley College recalled "I think it was the right course to place me in because again, I struggle with math. I struggle remembering anything about math.*"*

The survey results further corroborate this finding, as the vast majority of students either agreed or strongly agreed that they were placed at the appropriate level and that the process was fair. These feelings around placement did not differ based on math level, but for English, a larger share of students that were placed in "Foundational Studies/Other" reported disagreeing that they were placed at the appropriate level and that the placement process was fair.

Interviews from faculty revealed varying impressions of the policy upon witnessing it in action. Overall, faculty felt that high school GPA was an important variable to consider. However, some faculty felt that high school success was too inconsistent of a measurement for course placement while others believed that the policy could open doors for students who would otherwise be misplaced in their courses. As one English faculty member from Malcolm X remarked, *"*My initial concerns came from my experience teaching in high school and CPS because grades are treated really differently school to school... so 3.0s don't all mean exactly the same thing*."*

Negative faculty impressions of the policy were often driven by a misunderstanding that the new policy *only* used GPA for placement. Although numerous faculty members discussed their active involvement in the placement testing process, there was inconsistency in their comprehension of the new policy. As one math faculty member from Harold Washington College pointed out *"*whether it's the college placement or standardized test scores, it's always good to use different measures for placing the students and not just the GPA." This quote demonstrates that some faculty members believed that the new policy used GPA as the singular measure by which students were placed into their courses.

Given the new policy, many faculty felt that many students were being misplaced. However, from the time that the policy was implemented to when faculty were being interviewed, course switching occurred very infrequently. In English, a diagnostic test is given in the first week of each course, and based on those results, faculty may engage in conversations with students about course switching. However, faculty often stated that when they initiated these conversations with students, those students would either be too anxious to switch or unable to given the limited availability in other courses. As one English faculty member from Malcolm X recalled *"*I'm going to tell you right now, I have had zero luck moving any students... once the student has already formed a relationship with a teacher, even on day one, they don't want to start over with someone new sometimes.*"*

This strong relationship with instructors was also observed in student interviews. Students found their instructors to be supportive in the courses they were placed in. One student from Olive-Harvey stated regarding their instructors "they were always patient with me. They always give me the answers I needed, the support I needed. I actually got 100% support from my instructors.*"*

Conclusion and Policy Impact

Overall, our findings suggest that although the boost policy affected only a small number of students, those affected by the boost experienced fewer required developmental education courses without a decline in overall academic performance or persistence. However, we also find evidence that the policy caused some students to delay their English and math course taking, which are often prerequisites for upper-level classes. Our results underline the importance of ensuring students take these courses as early as they can to progress efficiently through their academic programs. Finally, the low transcript submission rates and lack of understanding surrounding placement policies revealed in student interviews highlight the importance of increasing awareness of the placement policies and simplifying the transcript sharing process between Chicago Public Schools and City Colleges of Chicago. This would help more students benefit from the placement boost, thereby reducing unnecessary developmental coursework.

This project was the result of CCC's ongoing commitment to context-informed and data-driven policy making. The new multiple measures placement policy evaluated in this study was devised based on previous analysis of the predictive value of CPS high school GPA in explaining academic performance in Dev-Ed and college level coursework at CCC. These insights, shared with a 13-member research advisory committee from CCC's faculty and administrative staff, led to the recommendation of a multi-measure placement policy. Upon its adoption, the provost committed to evaluating its impact, aiming to continuously refine policies to better serve students. This approach has the potential to serve as a template for future efforts building research practice partnerships that lead to policy changes and set the stage for continued learning and improvement. The CCC placement policy continues to evolve in response to both in-district learning and changes in state policy. As of Fall 2024 students who have an unexpired 3.0 GPA are automatically placed into gateway coursework.

References

Adelman, C. (1999). Answer in the toolbox: Academic intensity, attendance patterns, and bachelor's degree attainment. Available at http://www.ed.gov/pubs/Toolbox/toolbox.html.

Adelman, C. (2006). The toolbox revisited: Paths to degree completion from high school through college. Washington, DC: U.S. Department of Education. Available at http://www2.ed.gov/rschstat/research/pubs/toolboxrevisit/toolbox.pdf.

Attewell, P., Heil, S. & Reisel, L. (2012). What is academic momentum? And does it matter? Educational Evaluation and Policy Analysis, 34, 1, 27-44.

Bahr, P. R., Fagioli, L. P., Hetts, J., Hayward, C., Willett, T., Lamoree, D., & Baker, R. B. (2019). Improving placement accuracy in California's community colleges using multiple measures of high school achievement. Community College Review, 47(2), 178-211.

Barnett, E. A., Chavarín, O., & Griffin, S. (2018). Math Transition Courses in Context: Preparing Students for College Success. CCRC Research Brief. Community College Research Center, Teachers College, Columbia University.

Barnett, E.A., Kopko, E., Cullinan, D., & Belfield, C.R. (2020). Who Should Take College Level Courses? Impact Findings from an Evaluation of a Multiple Measures Assessment Strategy. New York: The Center for the Analysis of Postsecondary Research.

Bailey, T. Jaggars, S.S., & Jenkins, D. (2015). Redesigning America's Community Colleges: A Clearer Path to Student Success. Cambridge, MA: Harvard University Press.

Belfield, C. R., & Crosta, P. M. (2012). Predicting Success in College: The Importance of Placement Tests and High School Transcripts. CCRC Working Paper No. 42. Community College Research Center, Columbia University.

Belfield, C., Jenkins, P. D., & Lahr, H. E. (2016). Is corequisite remediation cost-effective? Early findings from Tennessee (CCRC Research Brief 62). Columbia university, Teachers College, Community College Research Center.

Bettinger, E. P., Boatman, A., & Long, B. T. (2013). Student supports: Developmental education and other academic programs. The Future of Children, 23(1), 93–115.

Bugler, D. (2014). Exploring the use of multiple measures for placement into college-level courses: Seeking alternatives or improvements to the use of a single standardized test. WestEd. https://www.wested.org/wp-content/uploads/2016/11/1397164696product55812B-3.pdf

Burdman, P. (2012). Where to begin? The evolving role of placement exams for students starting college. Washington, DC: Jobs for the Future. Retrieved from http://www.achievingthedream.org/sites/default/files/resources/Where_to_Begin.pdf.

Charles, C. Z. (2003). The Dynamics of Racial Residential Segregation. Annual Review of Sociology, 29(1), 167–207. https://doi.org/10.1146/annurev.soc.29.010202.100002.

Chen, X. (2016). Remedial course taking at U.S. Public 2- and 4-year institutions: Scope, experiences, and outcomes (NCES 2016-405). U.S. Department of Education, National Center for Education Statistics. http://nces.ed.gov/pubsearch.

Clovis, M.A. & Chang, M. (2021). Effects of momentum on degree attainment for students beginning college at 2-year institutions. Journal of College Student Retention, 23(2), 322- 336.

Cullinan, D., Barnett, E., Ratledge, A., Welbeck, R., Belfield, C., & Lopez, A. (2018). Toward Better College Course Placement: A Guide to Launching a Multiple Measures Assessment System. MDRC.

Duncan, G. J., & Murnane, R. J. (2011). Whither opportunity? Rising inequality, schools, and children's life chances. New York, NY: Russell Sage Foundation.

Ganga, E.C., & Mazzariello, A. N. (2019). Modernizing College Course Placement by Using Multiple Measures.

Illinois General Assembly. (2022). Illinois Compiled Statutes Chapter 110, Act 175, Section 100 15. Retrieved from https://www.ilga.gov/ftp/ILCS/Ch%200110/Act%200175/011001750K100-15.html.

Kozol, J. (1991). Savage Inequalities: Children in America's Schools. New York, NY: Broadway Paperbacks.

Lareau, A., & Goyette, K. (Eds.). (2014). Choosing Homes, Choosing Schools. Russell Sage Foundation.

Lichtenberger, E. & Wilson, N. (2019a). Remediation data in Illinois' higher education system. PowerPoint presentation for SJR 41 on September 9, 2019 at Harold Washington College.

Lichtenberger, E., & Wilson, N. (2019b). Developmental education data in Illinois' higher education system: Focus on equity. PowerPoint presentation for SJR 41 on November 1, 2019 at Governors State University.

Litschwartz, S., Cullinan, D., & Hill, C. (2024). College Course Placement Based on Multiple Measures Assessment: A Synthesis of Two Experimental Evaluations. Report. Center for the Analysis of Postsecondary Readiness.

Ragsdale, T. L., Akin, R., & Warren, G. (2021). Co-requisite redesign leads to increased college algebra success and college completion. Journal of Access, Retention, and Inclusion in Higher Education, 4(1), 5.

Rutschow, E.Z. & Mayer, A.K. (2018). Early Findings from a National Survey of Developmental Education Practices. New York: Center for the Analysis of Postsecondary Readiness.

Rutschow, E. Z., Cormier, M. S., Dukes, D., & Zamora, D. E. C. (2019). The changing landscape of developmental education practices: Findings from a national survey and interviews with postsecondary institutions. Center for the Analysis of Postsecondary Readiness.

Scott-Clayton, J. (2011). On money and motivation: A quasi-experimental analysis of financial incentives for college achievement. Journal of Human resources, 46(3), 614-646.

Scott-Clayton, J., Crosta, P. M., & Belfield, C. (2014). Improving the targeting of treatment: Evidence from college remediation. Educational Evaluation and Policy Analysis, 36(3), 371– 393.

Scott-Clayton, J., & Stacey, G. W. (2015). Improving the accuracy of remedial placement. New York, NY: Columbia University, Teachers College, Community College Research Center.

Scott-Clayton, J. (2021). The shapeless river: Does a lack of structure inhibit students' progress at community colleges? (CCRC Working Paper No. 25). Assessment of Evidence Series, Community College Research Center, Columbia University.

Vigdor, J. L., & Ludwig, J. (2008). Segregation and the Test Score Gap. In K. Magnuson & J.

Waldfogel (Series Ed.), Steady Gains and Stalled Progress: Inequality and the Black-White Test Score Gap (pp. 181–211). Russell Sage Foundation.

Wang, X. (2017). Toward a holistic theoretical model of momentum for community college student success. In M. B. Paulsen (Ed.), Higher education: Handbook of Theory and Research (pp. 259–308). Springer.

Woods, C. S., Park, T., Hu, S., & Betrand Jones, T. (2018). How high school coursework predicts introductory college-level course success. Community College Review, 46(2), 176-196.

Appendix

Appendix Table 1: Difference in Discontinuity of Demographics

Outcome	Estimate	Std. Error	P-Value	Sample Size
Female	0.032	0.048	0.503	10,046
Asian	0.008	0.012	0.479	10,046
Black	0.025	0.028	0.376	10,046
Hispanic	-0.054*	0.032	0.096	10,046
White	0.018	0.02	0.361	10,046
Ever Free or Reduced Lunch in High School	-0.003	0.023	0.894	10,046
Ever ESL Student in High School	-0.004	0.039	0.929	10,046
Star Scholar	0.01	0.044	0.825	10,046

*Note: This table shows the estimated difference in discontinuity of demographics for students who are just above vs. just below the 3.0 high school GPA cutoff. *** p<0.01; ** p<0.05; * p<0.1*

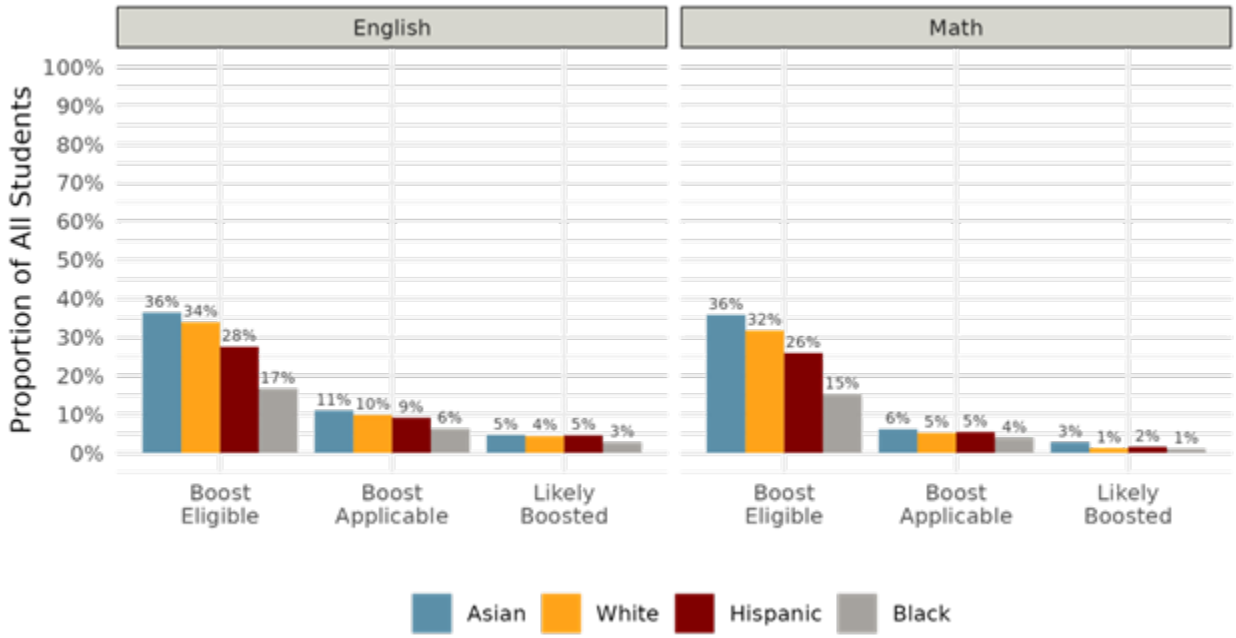
Appendix Table 2: English/Math Outcomes Codebook

Outcomes	
First English/Math Course Level	The level of the first English/Math courses a student enrolls in. Foundational courses are leveled as 0, Traditional Dev-Ed courses are leveled as 1, Advanced Dev-Ed and College Level with Supports are leveled as 2, finally College Level courses are leveled as 3. Conditional on enrolling in an English/Math course in the developmental or gateway sequence within a student's first year and on being able to observe a student for at least one fall and one spring semester.
Enrolled in Any English/Math Course First Year	Whether or not a student enrolls in and completes an English/Math course even if they don't pass. If a student withdraws from a class, they are not counted as enrolled. Conditional on being able to observe a student for at least one fall and one spring semester.
Passed First English/Math Course First Year	Whether or not a student enrolls in and passes their first English/Math course within their first year. Conditional on being able to observe a student for at least one fall and one spring semester.
Enrolled in College Level English/Math First Year	Whether or not a student enrolls in and completes a college level English/Math course even if they do not pass within their first year. If a student withdraws from a class, they are not counted as enrolled. Conditional on being able to observe a student for at least one fall and one spring semester.
Passed College Level English/Math First Year	Whether or not a student enrolls in and passes a college level English/Math course within their first year. Conditional on being able to observe a student for at least one fall and one spring semester.
Passed English/Math Course within Two Years	Whether or not a student enrolls in and passes any English/Math course within their first two years. Conditional on being able to observe a student for at least two fall and two spring semesters.
Grade in First English/Math Course	Grade in a student's first English/Math course. A=4, B=3, C=2, D=1, F=0. Conditional on enrolling in an English/Math course within a student's first year and on being able to observe a student for at least one fall and one spring semester.
First Year GPA in College-Level English/Math Courses	GPA for college level courses completed. Conditional on being able to observe a student for at least one fall and one spring semester.
Grade in First Gateway English/Math Course	Grade in a student's first Gateway English/Math course. A=4, B=3, C=2, D=1, F=0. Conditional on enrolling in an English/Math course within a student's first year and on being able to observe a student for at least one fall and one spring semester.

Appendix Table 3: General College Outcomes Codebook

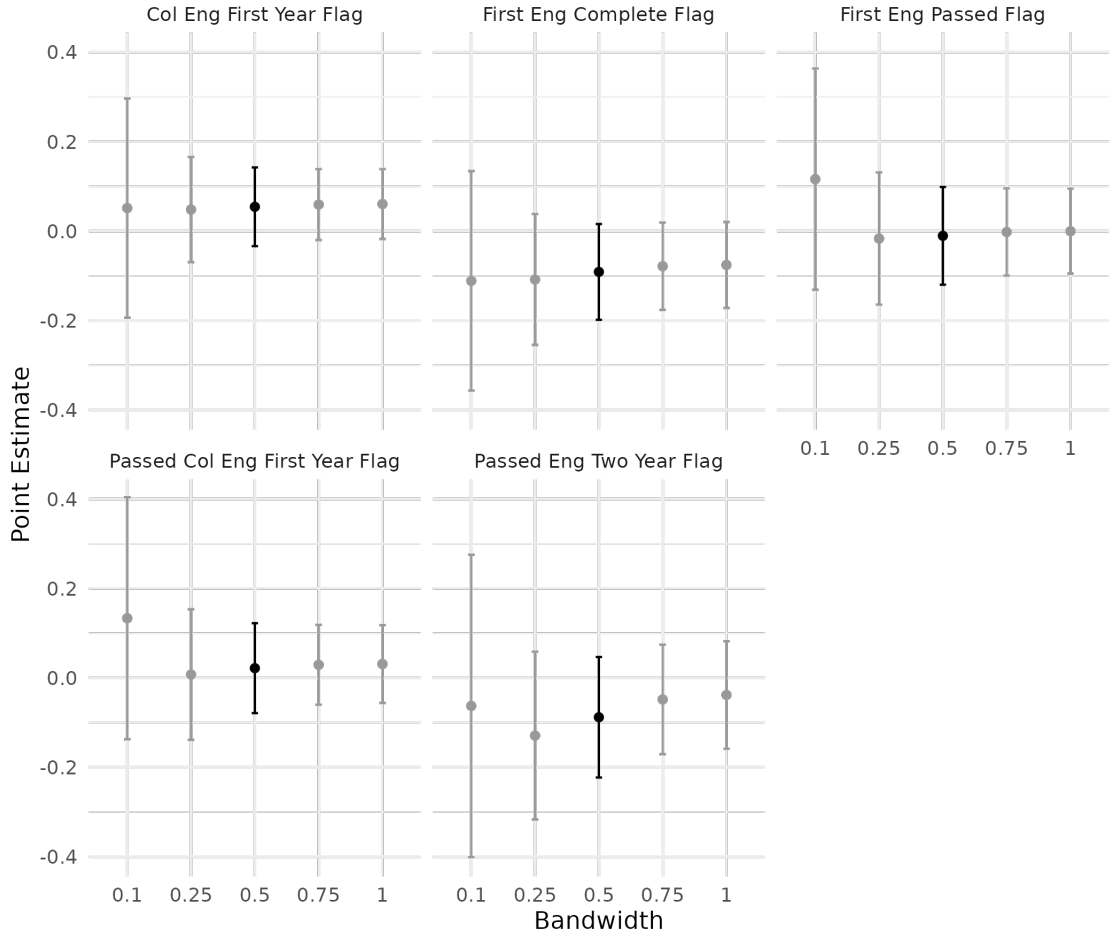
Outcomes	
Persistence to Second Semester	Whether or not a student enrolled in a second semester. Conditional on being able to observe a student for at least one fall and one spring semester.
Persistence to Second Year	Whether or not a student enrolled in a second year. Conditional on being able to observe a student for at least three fall or spring semesters
Enrolled College Level Course First Year	Whether or not a student enrolled in a college level course within their first year of college. If a student withdraws from a class, they are not counted as enrolled. Conditional on being able to observe a student for at least one fall and one spring semester.
First Year Overall College GPA	GPA for all college level courses completed. Conditional on being able to observe a student for at least one fall and one spring semester.
First Year Non-Gateway College GPA	GPA for all college level courses completed, excluding gateway courses. Conditional on being able to observe a student for at least one fall and one spring semester.
Number of College Level Credits Enrolled First Year	Number of credits a student enrolls in even if they eventually withdrew from those credits. Conditional on being able to observe a student for at least one fall and one spring semester.
Number of College Level Credits Enrolled & Completed First Year	Number of college level credits a student enrolls in and completes. Conditional on being able to observe a student for at least one fall and one spring semester.
Number of Dev-Ed Credits Enrolled First Year	Number of Dev-Ed credits a student enrolls in even if they eventually withdrew from those credits. Conditional on being able to observe a student for at least one fall and one spring semester.
Number of Dev-Ed Credits Enrolled & Completed First Year	Number of Dev-Ed credits a student enrolls in and completes Conditional on being able to observe a student for at least one fall and one spring semester.

Appendix Figure 1: Proportion of Students that are Boost Eligible/Applicable and Likely Boosted by Subject and by Race/Ethnicity



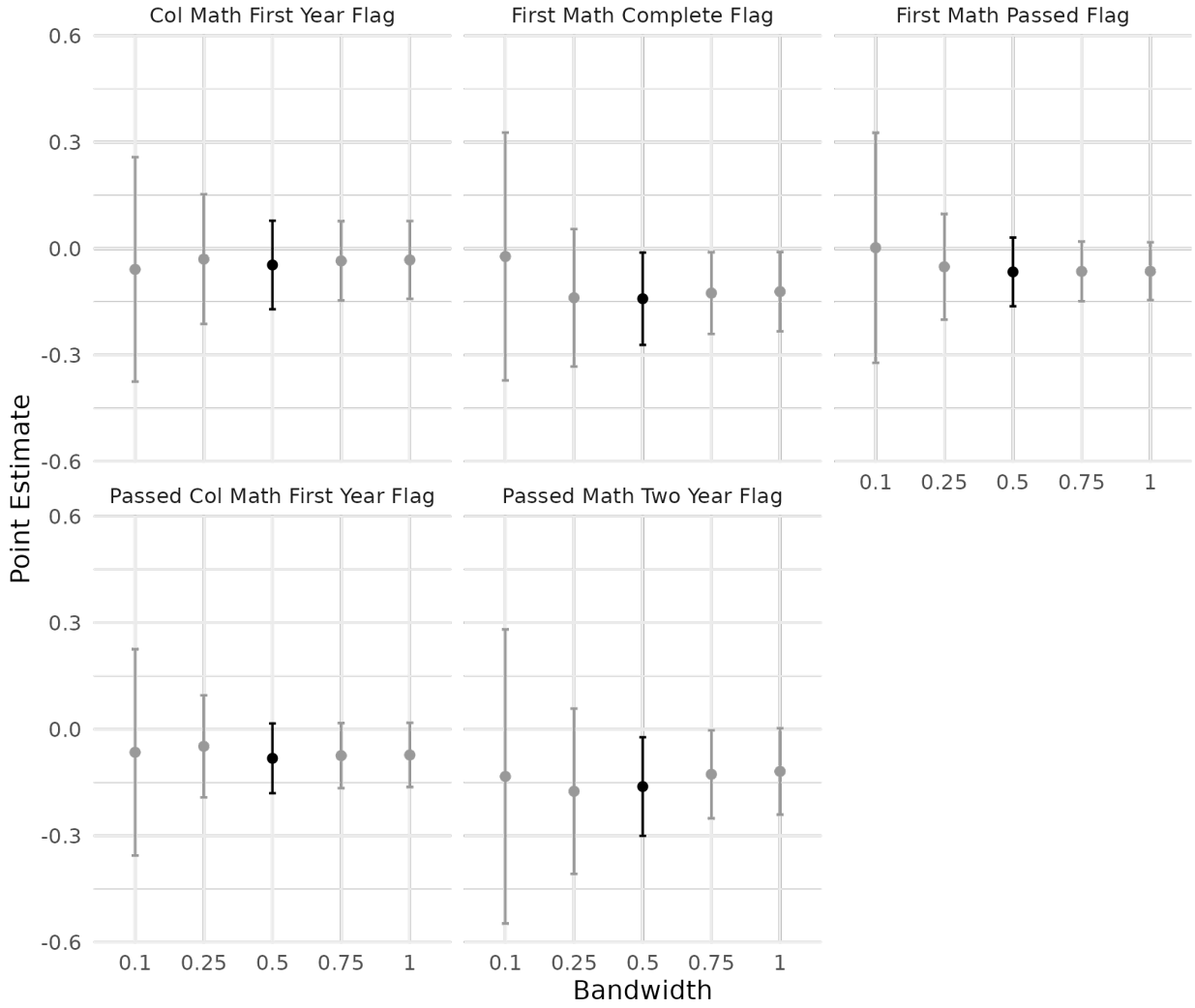
Note: The sample of students in this figure includes all students who enrolled in CCC after the new multiple measure placement policy was implemented. Students are boost eligible if they have an un-expired high school GPA of at least 3.0 and shared their high school transcripts with CCC. Students are boost applicable if they are boost eligible and would not have already been placed in college level courses without a placement boost. Students are likely to have been boosted if they were boost applicable and they enrolled in a course that was a higher level than the course level than their predicted placement based off of standardized test scores and transfer credits. Here we show the proportion of students in each racial category that are boost eligible, boost applicable, and likely boosted.

Appendix Figure 2: Robustness of Estimated Effect of Boost on English Outcomes to Different Bandwidth Specifications



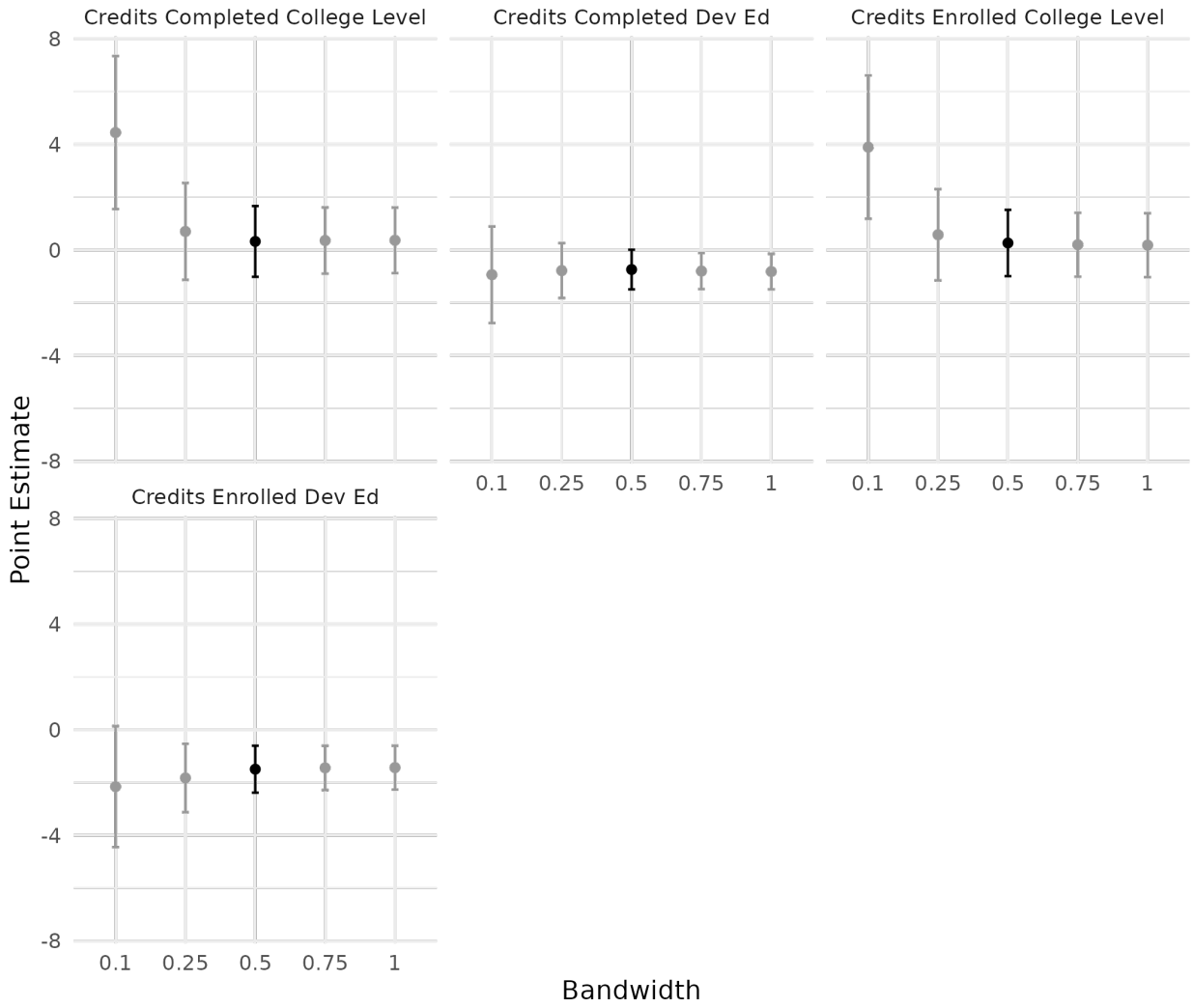
Note: This figure plots the difference in discontinuity estimates of the effect of having access to an English placement boost on a variety of outcomes related to taking and passing English coursework at CCC. We show these estimates for difference choices of bandwidths to demonstrate that our main results are robust to our choice of a bandwidth size of 0.5 on either side of the cutoff.

Appendix Figure 3: Robustness of Estimated Effect of Boost on Math Outcomes to Different Bandwidth Specifications



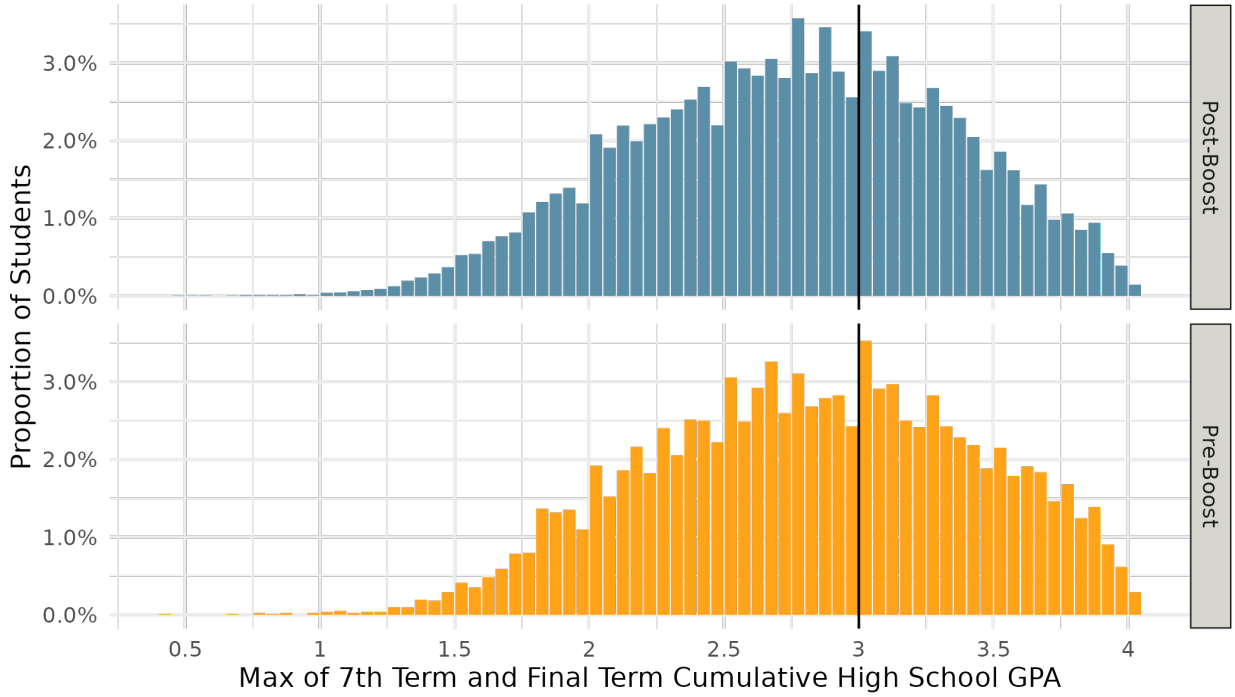
Note: This figure plots the difference in discontinuity estimates of the effect of having access to an Math placement boost on a variety of outcomes related to taking and passing Math coursework at CCC. We show these estimates for difference choices of bandwidths to demonstrate that our main results are robust to our choice of a bandwidth size of 0.5 on either side of the cutoff.

Appendix Figure 4: Robustness of Estimated Effect of Boost on Overall College Outcomes to Different Bandwidth Specifications



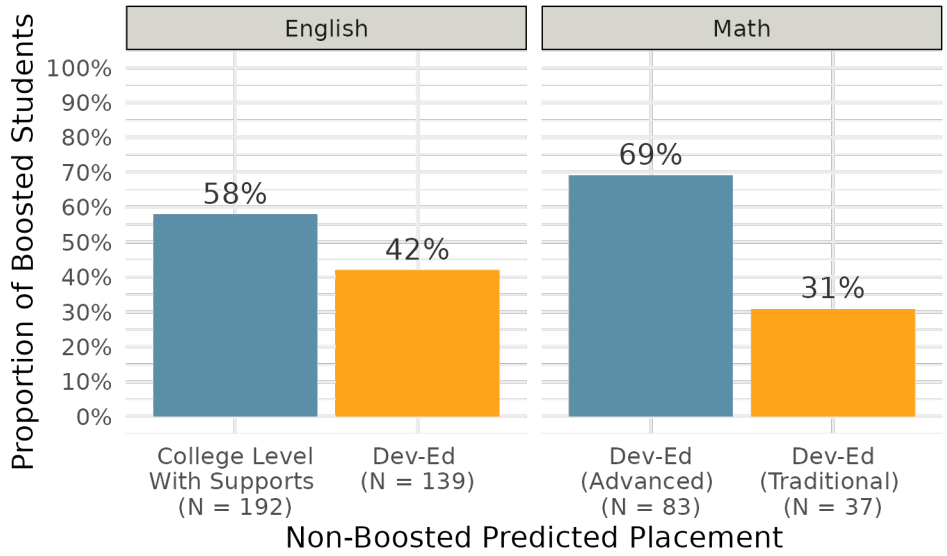
Note: This figure plots the difference in discontinuity estimates of the effect of having access to an English and Math placement boost on a variety of outcomes related to academic success at CCC. We show these estimates for difference choices of bandwidths to demonstrate that our main results are robust to our choice of a bandwidth size of 0.5 on either side of the cutoff.

Appendix Figure 5: Density of Binned Running Variable Pre & Post Boost Implementation



Note: This figure shows the distribution of our running variable around the 3.0 high school GPA boost eligibility cutoff. If there is a discontinuity at the cutoff, this is usually taken as evidence that individuals could be sorting into treatment by manipulating their running variable to be just above or just below the cutoff. In our setting, there is a discontinuity at the cutoff before the policy due to the nature of the ways grades are assigned at CPS (In CPS, students only receive whole letter grades, no B+ or C-, etc). So we test to see if the discontinuity at the cutoff is larger after the policy than before the policy. We find no significant differences in the density change at the cutoff before and after the boost policy was implemented.

Appendix Figure 6: Predicted Non-Boosted Placement for Students who were Likely Boosted



Note: This figure shows the proportion of all students likely to have been boosted whose predicted placement was in College Level with supports/Advanced Dev-ed or Traditional Dev-ed. This figure shows that most of the students who were boosted, were boosted out of College Level with Supports into College Level. (This is because most of the Advanced Dev-ed Math courses are College Level courses with Supports).