RESEARCH FOR ACTION

TEXAS Education
The University of Texas at Austin
College of Education

The Implementation, Impact, and Cost Effectiveness of Developmental Education Reform in California's Community Colleges

Final Report - June 2026

Executive Summary

Introduction, Context, and Study Methodology

Many students entering community colleges are assessed unprepared for college-level math and English courses, and required to enroll in developmental education (DE) courses designed to improve their academic preparedness for college-level standards. However, a large body of evidence has emerged suggesting that DE requirements more often serve as a barrier to students' degree completion. Students placed in DE commonly spend several semesters working through DE courses that are not credit-bearing (Ganga et al., 2018), which is both costly and detrimental to timely degree completion. Research shows that students placed into DE are less likely to complete college-level courses or earn a degree/credential, relative to students who are not placed into DE (Bailey et al, 2010; Boatman & Long, 2018; Clotfelter et al., 2015). Further, research has indicated significant racial disparities in both students' assignment to and successful completion of DE courses. Widespread use of standardized placement tests, often criticized for racial bias and as poor predictors of college success, likely contributes to the overrepresentation of Black, Latine, and Indigenous students in DE (Chen & Simone, 2016), creating opportunity gaps between those students and their White and Asian peers.

In response to this research highlighting the harmful and racialized impacts of DE, many states have introduced reforms that modify DE placement policies, loosen DE requirements, and/or alter curriculum and pedagogy. For example, Florida's 2014 reform required the state's community colleges to make DE coursework optional, with entering students exempt from placement testing (Park-Gaghan et al., 2020). In Texas, a 2017 reform required community colleges to implement and scale up corequisite models to support students (Meiselman & Schudde, 2022). Similar DE reform models were introduced in Tennessee in 2015 (Ran & Lin, 2022) and in Louisiana in 2022 (Louisiana Board of Regents, 2022).

Since 2017, California, with the largest and most diverse community college system in the country, has seen legislative efforts to reform developmental education within its community college system, specifically through Assembly Bills (AB) 705 and 1705. AB 705 required institutions to revise placement approaches to increase the likelihood that students would enter and complete transfer-level math and English in their first year. AB 1705 furthered these efforts by requiring institutions to eliminate all DE and limit the preparatory pathways to Calculus. Together, they represent a comprehensive effort to transform California's community college system and improve student outcomes across various demographic groups.

Research for Action, in partnership with Lauren Schudde and colleagues at the University of Texas at Austin, have been studying these reforms since 2021, and summarize the findings of our five-year study in our final report. This summary of that report[hyperlinked] outlines high-level learnings from our implementation, impact, and cost effectiveness studies of these reforms.

Implementation Study

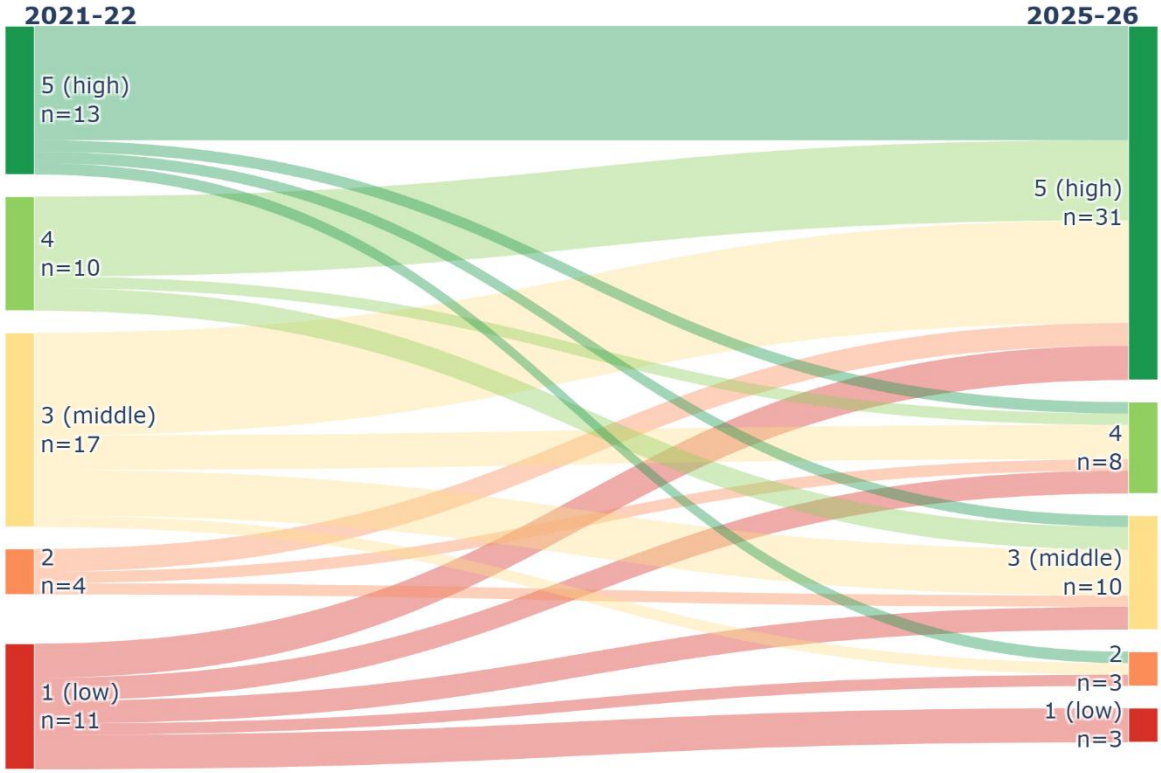
Our implementation research was focused on four research questions aimed at understanding **what** implementation has looked like, **who** has been implementing these reforms, and **how** these reforms have been experienced and vary across institutions. More specifically, the research questions on implementation are as follows:

- RQ1. How are California community colleges **implementing curricular reforms**? How do institutional policies and practices regarding curricular reform **vary across colleges**?
- RQ2. How does **institutional capacity** affect institutional adoption and implementation of curricular reforms?
- RQ3. How do **policies and practices** in math and English departments vary within colleges?
- RQ4. How does **faculty buy-in** vary between math and English departments? Why?

Institutional Implementation

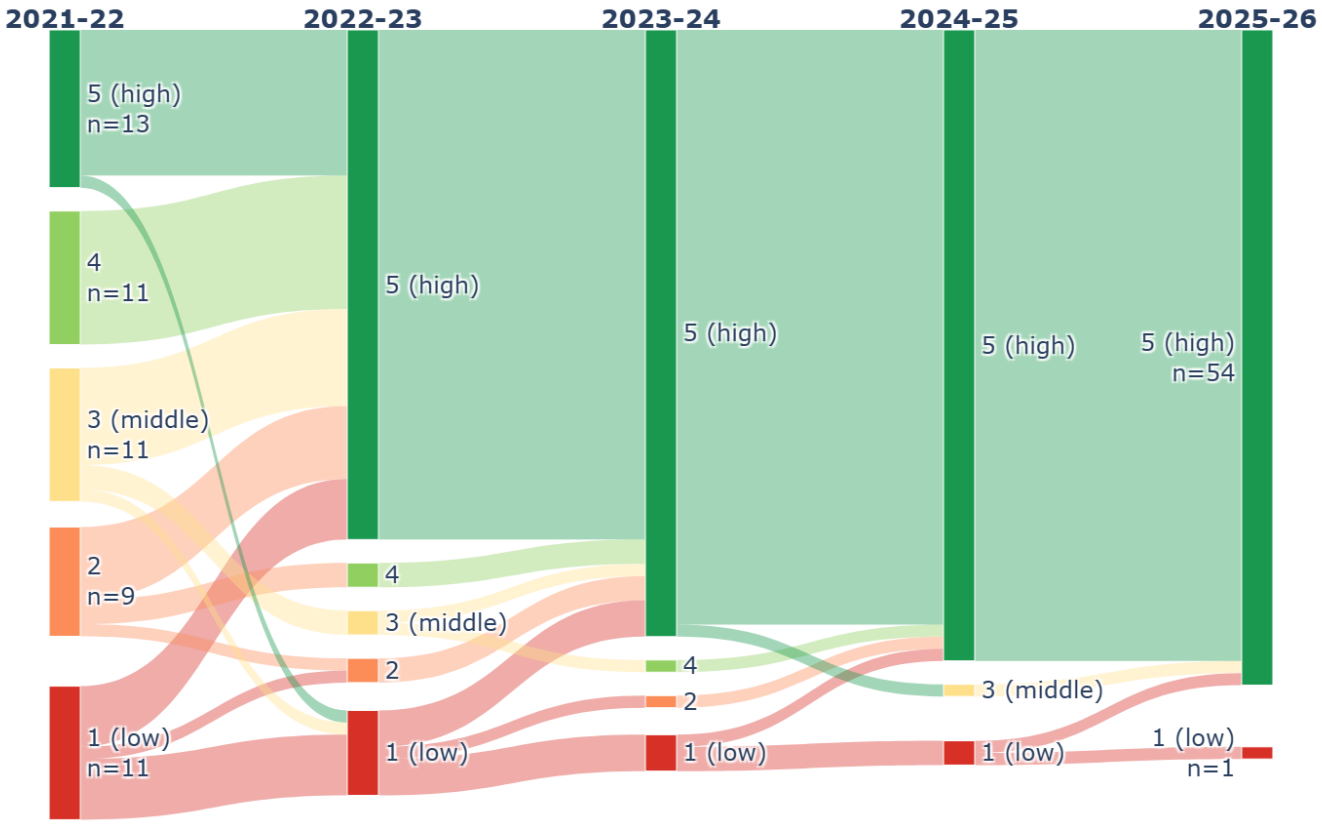
In answering part one of RQ1 (i.e., *How are California community colleges implementing curricular reforms?*) our first research activity was classifying each institution on a Scale of Implementation developed by our research team. Following other research which used the percent of introductory courses offered at transfer-level as an indication of implementation strength (Hern et al., 2020), we used this metric as well as several others that we believed would serve to identify meaningful variation in implementation. We evaluated colleges on this Scale in year 1 of the study and again in year 5 to assess change over time in institutional implementation.

Figure 1. 5-year change in college rankings on the Scale of Implementation (n=55 colleges), 2021-22 to 2025-26



However, when we look just at how colleges changed in terms of Indicator 1, the percent of introductory math courses offered at transfer-level—perhaps the most direct measure of implementation of AB 705—we see a much clearer pattern of improvement over the course of the study, as shown in Figure 2 below.

Figure 2. 5-year change in percent of introductory math courses offered at transfer-level (n=55 colleges), 2021-22 to 2025-26



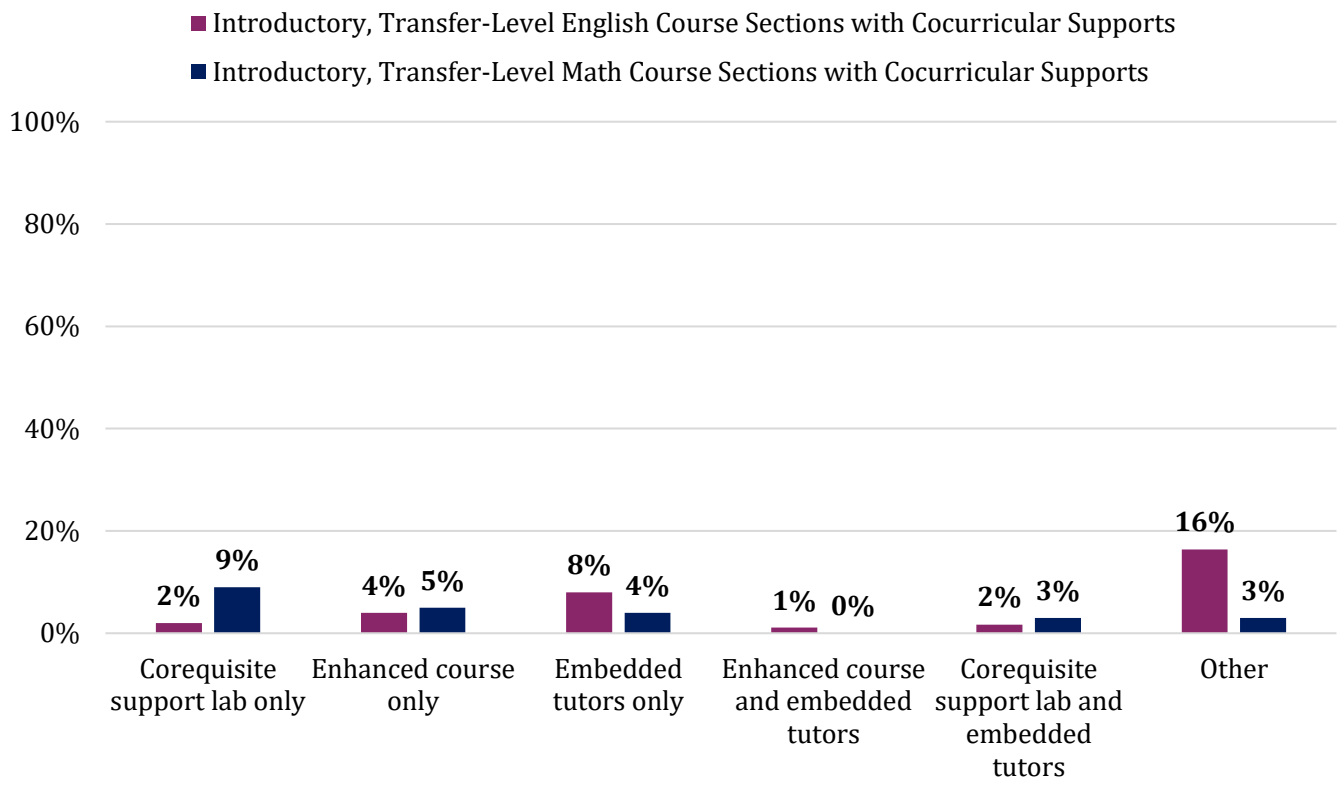
These figures serve to illustrate that despite the challenge of COVID and responding to other policies during the study period, colleges across the California system have worked diligently to reform their introductory course placement to maximize access to transfer-level coursework for all students.

Implementation of Cocurricular Supports and Instructional Strategies

In order to explore part two of RQ1 (i.e., *How do institutional policies and practices regarding curricular reform vary across colleges?*), the study focused on the adoption and implementation of cocurricular reforms. As colleges have been required to place all students directly into transfer-level math and English coursework, they have been encouraged to offer cocurricular supports to help students succeed.

Nearly all colleges in our sample offer at least one section of introductory, transfer-level English and math courses with some form of cocurricular supports (only two institutions out of 42 did not offer any English sections with cocurricular supports; all institutions in our math sample offered at least one section with supports). However, if you look at the share of total course sections with cocurricular supports across our sample, few have any cocurricular supports (33% of English course sections, 24% of math sections), therefore access to these supports is limited. Figure 3 below shows the frequency with which each of these supports were used during the 2025-26 academic year (AY) among colleges who provided these data.

Figure 3. Most frequently used cocurricular supports in introductory, transfer-level English and math course sections during the 2025-26 AY (n= 42 community colleges for English, 41 community colleges for math)



Note: "Other" includes different support configurations, such as a standard course with both embedded and outside tutors or only outside tutors and a standard course with a learning community and a required corequisite with embedded tutors and counselors, among others.

We've seen the use of corequisites and enhanced courses decline over the course of the study. Despite the growing literature supporting this model, administrative challenges, inconsistent implementation, and lack of student success have led many California community colleges to reduce these offerings. As can be seen in Figure 3 above, among the community colleges that provided data for the 2025-26 academic year, the corequisite model was offered as the only cocurricular model in 2% of English and 9% of math introductory, transfer-level course sections, decreases in both subjects from the previous year. It is worth noting that at least two-thirds of introductory-level course sections in English (67%) and math (76%) did not offer any cocurricular supports. Our report highlights key learnings about the variation and challenges of these concurrent support strategies.

Institutional Capacity

In response to RQ2 (i.e., *How does institutional capacity affect institutional adoption and implementation of curricular reforms?),* we operationalize institutional capacity as the financial, technological, curricular, and/or human resources leveraged to support implementation of reforms. Our site visit colleges were sampled using our Scale of Implementation to maximize variation across levels of implementation, so that we could evaluate differences in institutional capacity.

Institutional capacity to implement AB 705 and 1705 varied between low and high implementer colleges. Although math and English faculty were the drivers of implementation, institutional capacity to implement was related to support provided by administration. In colleges identified as high implementers

according to the Scale of Implementation, faculty reported a high level of support from administration, and experienced productive intradepartmental collaboration and support. Faculty also reported more agency in determining what professional development support they need, as well as how they would be compensated by the institution for working on reforms. In contrast, at low implementing colleges faculty felt persistent conflict and tension with administrators, a lack of intradepartmental collaboration and support, and agency. Given that high implementing colleges were associated with high levels of support from administration, institutional capacity seems to be determined at the institutional level with implications becoming visible at the departmental level (Burkander & Stenley, 2026).

Comparing implementation in math and English departments

To address RQ3 (*How do policies and practices in math and English departments vary within colleges?)*, we consider how departments responded to the requirements associated with AB 705 and AB 1705, including their adoption of new placement approaches, elimination of developmental coursework, and instructional support strategies.

Placement and below-transfer-level coursework

In many cases, placement testing had been eliminated prior to the passage of AB 705. None of the study colleges reported requiring placement testing to determine course placement.

- **In English, either official or self-reported high school GPA is the most common measure.** Incoming students typically only take introductory English courses, such as English 101 or English 1. Colleges most often use high school GPA to determine whether to recommend introductory English with or without support.
- **In math, high school coursework completed and/or grades in individual high school math courses are the most common placement measures.** Nearly all of the sample colleges reported using high school math courses completed and/or grades in specific high school courses to make recommendations for math placement.
- **Most sample colleges did not require any students to enroll in a course section with cocurricular support,** leaving students wide latitude on the course enrollments**.** This means that many students who might benefit from these supports are not enrolling in them, and students who do not need this additional support are often the ones choosing them.
- **Most, but not all, institutions in our sample (9 of 13) eliminated below transfer-level math and English courses by spring 2023;** all site visit colleges had eliminated these courses by spring 2026. Colleges retaining below-transfer offerings often reported that they offered these options for students in the interest of being student-centered.

Equity-Minded Instructional Support Strategies

In response to the changing needs of students in introductory, transfer-level courses, faculty were also implementing many equity-minded instructional strategies to support student success, both in standalone courses and those with concurrent support. While strategies were more frequently used in English than in math, overall, the findings suggest a commitment among faculty to applying instructional practices that foster inclusion, responsiveness, and formative feedback, with ongoing opportunities to increase adoption across math departments.

Comparing faculty buy-in and mindsets between math and English departments

Lastly, in response to RQ4 (*How does faculty buy-in vary between math and English departments? Why?*), we highlight findings from our interviews as well as our faculty survey. While both math and English departments were subject to reforms associated with AB 705 and 1705, **English faculty were generally**

more supportive of the changes than math faculty. This is likely due to some of the ways in which the reforms were experienced differently, such as:

- **English faculty were commonly more engaged in pre-reform momentum than math faculty.** In 2010, years before AB 705 became law, the California Acceleration Project (CAP) began offering workshops for faculty, presenting professional development on the harmful effects of developmental education and providing training on just-in-time remediation and acceleration practices, where colleges were encouraged to consolidate their extensive developmental sequences. Implementation of AB 705 placement reforms;
- **English departments often absorbed Reading and Writing faculty with experience teaching diverse skill levels.** Math departments typically lost part-time faculty with experience teaching this population and charged full-time faculty with offering introductory coursework. This often created conflict in math departments, with full-time faculty resisting this change.
- **Math and English faculty expressed different perceptions of the effectiveness of these reforms, based on their experiences of the students in their courses.** We heard in site visits that while English faculty generally observed students being successful in their courses, math faculty experienced persistent struggles. Math faculty perspectives often differed between STEM and SLAM pathways, with SLAM faculty experiencing more student success in their courses than STEM faculty.
- **Math and English departmental faculty commonly experienced AB 1705 differently**. In our conversations with faculty in math and English departments, we commonly heard the perception from English faculty that AB 1705 did not require any additional work from their departments. In contrast, math faculty expressed shock and outrage about the proposed reduction in preparatory courses before Calculus, indicating that this would have dire consequences for students.

Impact Study

Our impact study utilized two different quasi-experimental methods to understand the impact of the reforms on student outcomes. These analyses address the following research questions:

- RQ5. What is the impact of transfer-level placement, compared with placement into a prerequisite DE math or English course, on both short- and long-term student outcomes?
- RQ6: What is the overall impact of the AB 705 policy on student outcomes (e.g., transfer-level math passing rate in the first year)?
    - RQ6a: Does the effect of AB 705 vary across students with high, middle, and low high school achievement?
    - RQ6b: Does the overall policy effect vary across different socio-demographic student groups?

This section of the report will answer each of these research questions in order, highlighting key findings from the individual analyses.

Data Sources

We used multiple administrative data sources to construct analytic samples for both analyses. Our core dataset came from the California Community Colleges Chancellor's Office Management Information System (COMIS), which includes information about college enrollment, demographic characteristics, course-taking, and degree outcomes. We supplemented with two additional sources: (a) CCCApply, which provides self-reported high school GPAs from college applications; and (b) the California Department of Education (CDE), which has data about high school course enrollment records and California Assessment of Student Performance and Progress (CAASPP) and California Longitudinal Pupil Achievement Data System (CALPADS) test scores. We also used student identifiers—Social Security numbers, names, and birthdates—available in

the CDE dataset to link the CDE and COMIS data, thereby generating an anonymized, integrated dataset for analysis.

IPWRA analysis

To examine which student characteristics predicted enrollment in transfer-level math and English courses during the early roll out of the policy and estimate the relationship between transfer-level course enrollment and subsequent student outcomes (RQ5), we applied an inverse probability weighted regression adjustment (IPWRA) approach using the first cohort after the policy passed. We addressed the following sub-questions:

> RQ5a: Which student characteristics predicted enrollment in transfer-level math and English courses during their first semester of college?
>
> RQ5b: What are the associations between transfer-level course enrollment and short- and longer-term outcomes—including course success, degree attainment, and vertical transfer?

To address these RQs using IPWRA, we focused on the transition cohort (fall 2018), when colleges varied substantially in their placement practices and continued to offer both transfer-level and below-transfer-level courses. This allowed us to examine which student characteristics predicted enrollment in transfer-level math and English courses during students' first semester of college (RQ5a), at a time when students could feasibly be placed in either developmental or transfer-level coursework. We used descriptive statistics and logistic regression models to estimate how student academic preparation and demographic characteristics predicted first-term enrollment in transfer-level coursework. Then we adjusted for the observable differences between students who enrolled in transfer-level courses and those who did not using IPWRA—outcome regression models that use the propensity scores from the prior stage (the logistic regressions estimating the probability of student enrollment in transfer-level math or English) as regression weights. This approach allows us to estimate the association between transfer-level enrollment and outcomes while accounting for observed differences in student characteristics. Although we do not directly observe institutional placement decisions, we account for institutional context by including college fixed effects and defining students' primary institution based on their first-term enrollment patterns.

IPWRA Analysis

To understand which students were more likely to enroll in transfer-level math or English courses in their first semester (RQ5a), we used descriptive statistics and logistic regression models. We modeled the probability of enrolling in a transfer-level course (which we refer to as the selection model), separately for math and English, for student *i* at college *c* as follows:

$$Logit(p_{ic}) \;=\; ln(\frac{p_{ic}}{1 \;-\; p_{ic}}) \;= \beta_0 + \sum_{n=1}^{N} \beta_n X_{nic} + \lambda_c \;+\; \varepsilon_{ic}$$

where p_{ic} is the probability of enrolling in a transfer-level course (as opposed to enrolling only in below-transfer-level); β_0 is the intercept; $X_{1ic}, \ldots, X_{Nic}$ are covariates representing student demographic and pre-college academic measures; $\beta_1, \ldots, \beta_N$ are regression coefficients; λ_c is college fixed effects; and ε_{ic} is the residual term. To address variability in transfer-level course offering and experiences across colleges, we included college fixed effects based on each student's primary institution, which we operationalized as the college where the student attempted the most credits in the first term.

For RQ5b, which examines the associations between first-semester transfer-level course enrollment and student outcomes, we used IPWRA. The logit regression models described above were used to estimate the probability of transfer-level course enrollment in math and English for every student in each of the corresponding samples. These predicted probabilities were then used to calculate inverse probability weights (W_{ic}) to balance differences between students who enrolled in a transfer-level math (or English) course—the treatment group—and those who enrolled only in a below-transfer-level math (or English) course—the control group. We then ran weighted linear regressions—which we refer to as the outcome

model—to predict treatment-specific outcomes for each student, separately by treatment condition (treated versus control), subject (transfer-level math versus English), and outcome.

The outcome regression model was specified as:

$$Y_{ict} = \beta_{0t} + \sum_{n=1}^{N} \beta_t X_{ict} + \lambda_c + \varepsilon_{ict}, \text{with weights } W_{ic} = \begin{cases} \dfrac{1}{p(T_{ic} = 1|X_{ic})}, if\ T_{ic} = 1 \\ \dfrac{1}{1 - P(T_{ic} = 1|X_{ic})}, if\ T_{ic} = 0 \end{cases}$$

where, for each student i in college c under treatment condition t, Y_{ict} represents the outcome of interest, T_{ic} indicates their treatment status ($T_{ic} = 1$ if enrolled in a transfer-level course), X_{ict} denotes covariates, and λ_c represents college fixed effects implemented as a full set of college indicator (dummy) variables. Students were weighted by the inverse of their predicted probability of transfer-level course enrollment. The model included covariates from the propensity score model that did not meet baseline equivalence but were acceptable under What Works Clearinghouse [WWC] (2022) standards, including one covariate slightly exceeding the WWC equivalence threshold. We also added college-level variables—such as first-semester full-time status, GPA, and credits attempted—to control for early academic performance and included college fixed effects to account for institutional differences. The average treatment effect (ATE) was computed as the mean difference in predicted outcomes under each condition. We assessed covariate balance using standardized mean differences (SMDs); results showed substantial improvement after weighting (Tables B1 and B2 in Appendix B).

IPWRA Analyses Results

Predictors of Transfer-Level Course Enrollment (RQ5a)

- **Demographic characteristics such as gender, race/ethnicity, and Pell Grant recipient status significantly predicted transfer-level enrollment in the first semester, with variation by subject.** For example, identifying as a woman (compared to a man) was associated with a 3-percentage-point higher probability of enrolling in transfer-level math (*AME* = .030, *SE* = .006, *p* < .0001). In English, identifying as Black, Hispanic/Latine, or "other race" (relative to White) predicted lower probabilities of transfer-level enrollment, with Hispanic/Latine students showing the largest negative association. Pell Grant receipt was negatively associated with English enrollment but not math.
- **Students' academic backgrounds were also important predictors.** In math, each higher tier of high school course enrollment was associated with greater probability of transfer-level enrollment, while course tier was not significant for English. Students with goals other than transferring to a university—including personal development, earning a community college degree, or undecided/unknown goals—were less likely to enroll in transfer-level courses.

Transfer-Level Math & English Course Enrollment and Student Outcomes (RQ5b)

- **First-term transfer-level math enrollment was associated with both short- and long-term outcomes.** Within 1 year, taking transfer-level math—compared with below-transfer-level—was associated with a 36-percentage-point increase in the probability of passing transfer-level math (*ATE* = .357, *SE* = .018, *p* < .0001), alongside improved math progress and reduced below-transfer-level credits. By year five, initial enrollment in transfer-level math, instead of below-transfer, was correlated with an average increase of 4.5 transfer-level credits and a decrease of 6.5 below-transfer-level credits (*ATE* = 4.467, *SE* = .228, *p* < .0001; *ATE* = -6.484, *SE* = .134, *p* < .0001).
- Transfer-level math enrollment was associated with **higher GPAs** at both 1 and 5 years. Although no association emerged for credential attainment in the first year, by year five it was associated with a 3.7-percentage-point increase in **certificate attainment** and a 6.4-percentage-point increase in **associate degree attainment** (ATE = .037, *SE* = .011, *p* = .0001; *ATE* = .064, *SE* = .011, *p* < .0001). It was also positively associated with **vertical transfer**, with increases of 0.8 percentage points in year

one and 8.4 percentage points in year five (ATE = .008, SE = .003, p = .008; ATE = .084, SE = .013, p < .0001).

- **Similar patterns emerged for English.** As with math, transfer-level English enrollment significantly predicted passing a transfer-level English course within 1 year, and this advantage persisted through year five. Academic progress outcomes, such as GPA, credential attainment, and vertical transfer, also showed positive associations in both the short and the long term.

Interrupted Time Series analysis

We utilize an interrupted time series (ITS) analysis to address the other impact study research questions:

- RQ6: What is the overall impact of the AB 705 policy on student outcomes (e.g., transfer-level math passing rate in the first year)? Does the effect of AB 705 vary across students with high, middle, and low high school achievement?
- RQ6a: Does the overall policy effect vary across different socio-demographic student groups?

Sample

We initially constructed a sample of eleven first-time-in-college (FTIC) student cohorts who entered California public community colleges between fall 2014 and fall 2024. This sample includes four pre-AB 705 cohorts (fall 2014–2017), one rollout cohort (fall 2018), and six post-AB 705 cohorts (fall 2019–2024). Students in the sample were enrolled in at least one credit during their first fall semester; those attending the three quarter-system colleges were excluded. Each analysis draws its analytic sample from different segments of this full cohort.

Variables

Treatment and Outcome Measures for ITS Analysis

We examine enrollment in and successful completion of transfer-level math and English courses within one and two academic years of initial college entry. For each cohort, the first academic year includes the fall term of entry, winter intersession, spring term, and the subsequent summer term. The second academic year includes the analogous sequence of terms in the following year.

Baseline Covariates

We use students' 11th grade state math and ELA assessment scores as measures of baseline academic achievement and college readiness prior to initial college entry. In addition to these assessment measures, we include a set of baseline demographic and socioeconomic covariates. These include race and ethnicity (Black/African American, Hispanic/Latine, Asian, White, and other), gender, age at entry, first-year Pell Grant receipt, principal educational goal at entry, and highest parental education level. While demographic characteristics are fully observed, several socioeconomic variables contain missing values. To preserve sample size and avoid listwise deletion, we include indicator variables for missing categories in the interrupted time series models.

ITS Analysis

We estimated the overall impact of the DE reform on the enrollment and completion of transfer-level math and English courses within the first academic year for student i at college j in year (cohort) t using the following linear probability model:

$$Y_{ijt} = \beta_0 + \beta_1 Time_t + \beta_2 P_{18-19} + \beta_3 P_{19-20} + \beta_4 P_{20-21} + \beta_5 P_{23-24} + \beta_6 P_{24-25} + \beta_7 X_{ijt} + C_j + \varepsilon_{ijt}$$

where:

Y_{ijt} = first-year outcome for a FTIC student ***i***, enrolled in college ***j***, in the fall of academic year ***t***,
$Time_t$ = a continuous variable which indicates the time (i.e., academic year),
P_{18-19} = 1 for student ***i*** in the fall 2018 (AB 705 roll-out year) cohort, 0 otherwise

P_{19-20} = 1 for student ***i*** in the fall 2019 (AB 705 full implementation year 1) cohort, 0 otherwise

P_{20-21} = 1 for student ***i*** in the fall 2020 (AB 705 full implementation year 2) cohort, 0 otherwise

P_{23-24} = 1 for student ***i*** in the fall 2023 (AB 705 full implementation year 6) cohort, 0 otherwise

X_{ijt} = a vector of student background variables for a first-time college student ***i***, enrolled in college ***j***, in the fall of academic year ***t***

C_j = college fixed effects

ε_{ijt} = random errors

In this model, β_0 and β_1 represents the intercept and slope of pre-policy trend line (i.e., baseline trend), and β_2, β_3, β_4, β_5, and β_6 capture deviations from the baseline trend, estimates of the overall policy impact on the outcomes of the AB705 roll-out cohort (fall 2018 cohort) and four follow-up cohorts (fall 2019, 2021, 2023, and 2024 cohorts), respectively. β_7 captures the effects of a vector of student background variables.

ITS Findings

- After accounting for baseline trends and student composition, **AB 705 was associated with substantial increases in transfer-level enrollment within the first academic year**. In the roll-out year, fall 2018, transfer-level math enrollment increased by 5.3 percentage points and English enrollment increased by 6.8 percentage points relative to projected baseline trends. Impacts grew considerably in the first post-implementation cohort, fall 2019, with math enrollment increasing by 18.7 percentage points and English enrollment by 13.4 percentage points.
- **AB 705 was also associated with meaningful improvements in transfer-level course completion within the first academic year**, although completion gains were smaller than enrollment gains. In the fall 2018 roll-out year, transfer-level math completion increased by 2.8 percentage points and English completion increased by 4.1 percentage points relative to projected baseline trends. In fall 2019, completion gains increased to 8.1 percentage points in math and 5.4 percentage points in English.

Differential Reform Impacts by Race/Ethnicity

- Altogether, **access improved broadly across groups, but results do not show consistent narrowing of enrollment gaps across post-reform cohorts**. The subgroup results provide limited evidence that enrollment gains were consistently larger for Black/African American, Hispanic/Latine, Asian, or "other" race and ethnicity students than for White students.
- However, **access alone was not enough to ensure equally strong completion outcomes across racial and ethnic groups.** Additional academic and institutional supports may be needed to help ensure that increased access to transfer level coursework leads to more equitable completion outcomes, particularly in math.

Differential Reform Impacts by Gender

- For math enrollment, male students experienced larger gains than female students in some post reform cohorts. However, because female students already had lower math enrollment rates before the reform, these results suggest that **AB 705 did not narrow the pre-reform gender gap in math enrollment and may have widened it in some cohorts.**
- For math completion, male students experienced larger gains than female students in selected post reform cohorts. Because male and female students had similar math completion rates prior to the reform, these results suggest that **male students experienced somewhat larger improvements in math completion in some cohorts,** particularly in the later post reform period.

- For English enrollment, differences between male and female students were smaller and less consistent. None of the male versus female interaction terms were statistically significant, indicating that the evidence indicates that **English enrollment gains did not differ meaningfully by gender**.
- For English completion, male students' gains were generally similar to those of female students. Because female students had higher English completion rates before the reform, the absence of consistent gender differences in post reform gains suggests that **the pre-reform advantage for female students in English completion largely persisted**.

Differential Reform Impacts Based on Prior Academic Preparation

- Overall, the subgroup-specific ITS results show that **AB 705 increased transfer-level course enrollment and completion across high, middle, and low prior achievement groups**. The magnitude and consistency of the effects varied by prior academic preparation, with the strongest gains generally observed among students in the middle achievement group.

Cost Effectiveness Study

While community colleges have increasingly replaced traditional developmental education with direct placement into introductory, transfer-level coursework, little is known about the cost-effectiveness of these reforms or the relative value of alternative support models. This component of the study examines the cost-effectiveness of institutional reforms in response to AB 705. Using linked administrative, survey, and cost data, the research team explored whether transfer-level placement was more cost-effective than traditional developmental education and how the three most common cocurricular models (i.e., embedded tutoring, enhanced courses, and corequisites courses) compared with standalone transfer-level courses. Additional details about the approach and findings are available in our year 4 report (Burkander et al., 2025), but we summarize high-level findings here.

Data and Methods

Costs were estimated using an ingredients-based approach (Levin et al., 2018) and effects using 1) inverse probability weighted regression adjustment for transfer-level placement versus developmental education and 2) propensity score matching for cocurricular support model comparisons. Incremental costs and incremental effects were also combined using the incremental cost-effectiveness ratio (ICER):

$$ICER = \frac{Cost_{Alternative} - Cost_{Comparison}}{Effect_{Alternative} - Effect_{Comparison}}$$

Findings

- **In both math and English, transfer-level placement was associated with lower estimated per-student costs and better outcomes than developmental education.** In math, total measured per-student costs were $180 for transfer-level placement versus $1,521 for developmental education; in English, the corresponding costs were $163 and $1,452. These higher developmental education totals reflect both the multi-course structure of prerequisite pathways and the cost burden associated with them.
- **Cocurricular support models generally cost more than standalone transfer-level courses.** In 2023 dollars, standalone transfer-level courses had the lowest per-student institutional costs in both math and English, partly because they served substantially more students and distributed fixed implementation costs more broadly. Cocurricular support models had higher per-student costs because they served fewer students and required additional resources such as support personnel, instructional time, or linked support courses. Among support models, corequisites had the lowest total per-student cost in both subjects. Personnel-heavy models, such as embedded tutoring in

English, had higher resource demands, and the high per-student cost for enhanced math sections should be interpreted cautiously given the small number of students served (N = 88).

- Overall, there is **limited evidence that support models consistently improved completion** relative to standalone courses. This may be partially related to the fact that faculty were implementing equity-minded practices in both standalone and concurrently supported courses, and because students needing additional support were commonly not enrolling in the concurrently supported sections (RP Group, 2026). However, the cost differences across models remain informative. Standalone courses were least costly, and corequisites had the lowest incremental cost among supports. Because most incremental effects were small and rarely distinguishable from zero, separate cost and effect estimates are more useful than ICERs for these comparisons.

Conclusion

AB 705 and 1705 have fundamentally transformed academic pathways for students in the largest and most diverse community college system in the country. All students now have access to transfer-level math and English upon entry and enrollment in transfer-level courses has increased substantially. Before the reform, roughly 17% of first-time students enrolled in transfer-level math within their first year. By fall 2024, that figure was 46.9%. Transfer-level English enrollment rose from approximately 46% to 63.3% over the same period. This represents a near-tripling of math access and a substantial expansion of English access across the largest community college system in the country, achieved within a decade.

Transfer-level enrollment also delivered long-term benefits for many students who experienced it. After adjusting for observable background characteristics, first-term transfer-level math enrollment was associated with a 36 percentage point higher probability of passing a transfer-level math course within one year, 4.5 additional transfer-level credits by year five, and 6.5 fewer below-transfer-level credits. By year five, transfer-level math enrollment was associated with a 6.4 percentage point increase in associate degree attainment and an 8.4 percentage point increase in transfer to a four-year institution. English outcomes followed a comparable pattern.

The completion picture is more complicated. Enrollment gains across the post-reform period consistently and substantially exceeded completion gains. For example, by fall 2023, two-year math enrollment was 29.8 percentage points above baseline, while two-year completion was 17.6 percentage points above baseline.

Our implementation work has highlighted the work that California community colleges have done in response to these reforms, reshaping their placement practices and instructional strategies. Many colleges have also concurrently undertaken equity initiatives, from classroom-based reforms to campus-wide engagement, to provide better support to their racially minoritized students. AB 705 and 1705 are part of a larger culture change happening across the California community college system. Indeed, while many colleges have reduced the number of course sections with concurrent support, faculty have commonly embraced growth mindsets and equity-minded instructional practices which are applied in standalone courses as well as those with concurrent support, particularly in English. These changes may be contributing to the gains in enrollment and completion that we observe in later years of the study, particularly among racially minoritized and low-prior-achievement students.

Our cost study provides additional support for the benefit of direct enrollment in transfer-level coursework; this approach is far more cost effective than developmental education. The autonomy of individual system colleges has meant that implementation has varied widely, which makes it difficult for us to measure cost-effectiveness of cocurricular support strategies. More research is needed to identify the impact of the various concurrent support approaches, although we have suggestive evidence that corequisites with embedded tutors can be beneficial in math courses.

Developmental reforms in California, like those in other states, were prompted by equity concerns regarding access to transferable coursework for racially minoritized students, particularly Black and Latine students in the California context. Our analyses suggest that these reforms have helped to narrow racial gaps in enrollment in transfer-level math and English, as well as those in English completion, but that Black and Latine students and those with lower prior academic preparation may need additional support to narrow racial completion gaps, particularly in math. Our implementation study highlights the role that faculty instructional practices have played in promoting student success. Recognizing the diversity of math pathways, and the ways in which these reforms have been experienced differently between English and math departments, future research should explore how, if at all, these reforms have influenced students' major choices. The field also needs additional guidance regarding how variations in cocurricular support are implemented and how they impact student outcomes.

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