



Still Getting There

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How California's AB 705 is (and is not) Transforming Community College Remediation and What Needs to Come Next

ACKNOWLEDGEMENTS

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EXECUTIVE SUMMARY

In 2017, the California Legislature unanimously passed Assembly Bill 705, landmark legislation overhauling community college placement and remediation in English and math. AB 705 requires colleges to rely on students' high school grades for placement, restricts colleges from requiring students to enroll in remedial courses, and establishes the legal requirement that colleges place students into courses where they have the greatest likelihood of completing the English and math required for a bachelor's degree. In the language of the law, colleges must "maximize the probability that a student will enter and complete transfer-level coursework in English and mathematics within a one-year time frame."¹ Because research has not identified any student groups who can be excluded from transfer-level courses under this standard, virtually all students have the right to enroll in transfer-level courses under statewide default placement rules.²

Still Getting There looks at the second year of AB 705 implementation in English and math at California community colleges. Examining fall 2020 course schedules, we find that progress implementing AB 705 changes has slowed and remains uneven and racially inequitable across the state.

- Statewide, transferable, college-level courses ("transfer-level") constituted 93% of the introductory English sections in fall course schedules, remedial courses 7%. In math, 75% of introductory sections were at the transfer level and 25% were remedial. This represents a modest improvement over the prior year, though some colleges regressed and offered more remedial sections in fall 2020.
- Colleges made slight progress replacing remedial courses with models where students enroll in transfer-level classes with additional corequisite support, but in math, 75 colleges continue to offer more remedial sections than transfer-level sections with support.
- Colleges have improved their course offerings for students in majors that are not math intensive but are still not offering enough sections of statistics and liberal arts math.
- Though statewide research hasn't identified any groups whose completion benefits from starting in a remedial course, 69 colleges still offer more than 20% of their introductory sections at the remedial level in math, and 9 colleges are doing so in English.
- Black and Latinx students disproportionately attend colleges that have maintained large remedial math offerings. Colleges serving over 2,000 Black students have double the rate of weak math implementation of other colleges, with the vast majority continuing to offer more remedial sections than corequisite-supported transfer-level sections.
- With only 15 colleges offering at least 90% introductory sections at the transfer level in both English and math, there is widespread geographic inequity in access to transfer-level courses. The vast majority of students attend colleges that are not maximizing their likelihood of completing these key academic milestones.

Overall, California community colleges have maintained large remedial course offerings despite clear evidence that these courses do not meet the legal standard of maximizing completion, and this is driving ongoing inequities in access and completion for Black and Latinx students.

The report closes with recommendations for how community college students, leaders, system officials, and legislators can achieve AB 705's full promise for maximizing student completion and increasing racial equity. First and foremost, we recommend setting a deadline of fall 2022 for ensuring that all students begin in transfer-level courses, with corequisite support for those who need it.

GLOSSARY

AB 705: A California law that requires community colleges to use students' high school grades for placement in English and math and restricts colleges from requiring students to enroll in non-transferable remedial courses. The core legal requirement is that colleges must place students in the course that maximizes their likelihood of completing a transferable, college-level course within a year.

Remedial Courses: Preparatory reading, writing, and math courses that do not transfer to a four-year university. In math, these courses typically repeat K-12 content from arithmetic through Algebra II. They also include non-transferable preparatory courses in statistics. Remedial courses are also known as "remedial prerequisite," "developmental" or "pre-transfer" courses. Before AB 705, 80% of California community college students were required to complete remedial prerequisites before enrolling in a transfer-level course.

Transfer-Level Courses: Courses that receive credit toward a baccalaureate degree upon transfer to a four-year university. An "introductory transfer-level" course is the first course in a student's program of study that counts for general education transfer credit in English (college composition) or math (quantitative reasoning). These courses may have pre-transfer-level prerequisites, but do not have other transfer-level courses as prerequisites.

Introductory Courses: Entry-level English composition and math/quantitative reasoning courses. Includes both transfer-level courses that meet general education requirements and non-transferable (remedial) courses that typically cover traditional developmental English or math content through Intermediate Algebra.

Corequisite Models: An alternative to traditional remedial prerequisites, corequisite models enable students to begin directly in a transfer-level course with additional support. Corequisite support typically involves added class hours, where the same instructor provides guidance, practice, and scaffolding to help students achieve the higher-level learning outcomes (e.g., review of foundational math concepts and skills in the context of statistics or precalculus). At some colleges, corequisite support is required for students with lower high school GPAs or less math preparation; at others, corequisite support is recommended or entirely optional.

SLAM Math: Statistics and liberal arts math courses for students in non-math-intensive majors. They include both transfer-level and non-transferable classes (e.g., pre-statistics courses).

B-STEM Math: Math courses for students in majors that require calculus – that is, science, technology, engineering, math, and certain math-intensive business programs. They include both transfer-level and remedial courses.

Strong Implementers: Colleges where 90-100% of introductory math or English sections in the course schedule are at the transfer level.

Medium Implementers: Colleges where 70-89% of introductory math or English sections in the course schedule are at the transfer level.

Weak Implementers: Colleges where less than 70% of introductory math or English sections in the course schedule are at the transfer level.

Transfer-Level Completion: The percentage of first-time English or math students who complete transfer-level courses with a C or better in a given time period. This metric, which is also called "throughput," is important because it includes not only students who begin directly in transfer-level courses but also those who begin in remedial courses. When colleges look only at pass rates among students who make it to transfer-level courses, it hides from view the high attrition in remedial pathways. AB 705 requires colleges to maximize students' transfer-level completion in a one-year time frame.

INTRODUCTION

The California community college system is the largest and most diverse higher education system in the United States, serving as the entry point to higher education for over 2.1 million students, the majority of whom are from racially minoritized groups.³ As open access institutions, California's 116 community colleges provide critical access to post-secondary credentials — and a pathway to economic mobility — to all students, including those who have struggled academically or received inequitable educational opportunities in K-12.



But for decades, the democratic promise of this system has been undermined by how California community colleges have treated students arriving at their open doors. Historically, more than 80% of incoming students were denied access to transferable, college-level English and math and required to take remedial courses that do not earn them credit toward a bachelor's degree. Racial inequity was built into this system, as underrepresented students of color were more likely to be excluded from transferable courses and placed into lower-level remedial classes than white students.⁴ Though remedial courses were intended to make students more successful in college, over a decade of research has established that starting in a remedial class actually makes students less likely to earn a degree.⁵ Further, the standardized tests used to place students in these courses have been shown to do a poor job of predicting college "readiness" and have caused millions of capable students to be excluded from courses where they could have been successful, with serious consequences for their long-term goals.⁶ One study found that students' initial placement in English and math explained 50% to 60% of racial inequities gaps in long-term transfer and degree completion.⁷

In 2017, these issues led the California Legislature to unanimously pass Assembly Bill 705, legislation overhauling community college placement and remediation in English and math. AB 705 requires colleges to rely on students' high school grades for placement, as these have been shown much better predictors of students' performance in college than standardized tests. The core legal standard is that colleges must "maximize the probability that a student will enter and complete transfer-level coursework in English and mathematics within a one-year time frame."⁸ To deny students access to transfer-level English and math, colleges must meet a two-part evidentiary bar: they must demonstrate that 1) students are highly unlikely to succeed in the class and that 2) beginning in a remedial class will increase their likelihood of completing the transfer-level course within a year.

As documented in last year's *Getting There II* report, colleges made substantial changes in preparation for AB 705. They scheduled far more transfer-level classes, cut back their remedial offerings, and created new corequisite models in which underprepared students take transfer-level classes with additional support.⁹ Statewide, 96% of first-time English students enrolled in transfer-level courses in fall 2019, and 78% of first-time students did in math.¹⁰

These changes produced dramatic increases in completion across the system. In fall 2019, over twice as many students completed transfer-level English and math as did a few years earlier. Statewide, one-term completion of transfer-level courses increased from 27% to 61% in English and from 14% to 40% in math. In raw numbers, that meant that over 57,000 additional students completed their transfer-level English requirements and over 31,000 additional students in math. Student completion increased substantially for every racial/ethnic group examined. Though equity gaps remain, Black and Latinx students saw the greatest gains from AB 705 reforms, with their completion tripling in English and quadrupling in math.¹¹ Other groups also saw substantial gains, including students with disabilities, low high school GPAs, and less high school math preparation.¹²

Despite this progress, *Getting There II* noted several areas of concern in the first year of implementation. Many colleges retained large remedial offerings, especially in math, despite research showing that these courses reduce completion for every demographic group studied to date. Further, colleges were not informing students that choosing these classes would substantially reduce their chances of completing transfer-level requirements. Finally, the ongoing presence of remedial courses was likely to drive racial inequities, because colleges were more likely to enroll Black and Latinx students in them.¹³

Still Getting There follows up on AB 705 implementation one year later. We examined class schedules for 114 community colleges¹⁴ to answer this question: Are colleges aligning their course offerings with the AB 705 standard of maximizing student completion?

Organization of the Report

This report is divided into four sections:

1) highlights from existing research related to the AB 705 standard of maximizing student completion, **2)** progress colleges have made on AB 705 implementation, **3)** implementation problems that continue to undermine student completion and equity, and **4)** recommendations for ensuring that students have equitable access to AB 705 reforms that maximize their completion.

RESEARCH HIGHLIGHTS ON MAXIMIZING STUDENTS' LIKELIHOOD OF COMPLETION

The core standard of AB 705 is that community colleges must “maximize the probability that a student will enter and complete transfer-level coursework in English and mathematics within a one-year time frame.” What does existing research say about how to meet this standard?

This section presents six key research highlights related to AB 705 implementation:

1. Remedial courses decrease student completion and drive racial inequity.
2. Corequisite models of remediation increase student completion.
3. Aligning transfer-level math with students' programs of study increases math completion.
4. AB 705 has produced large completion and equity gains.
5. Optional remedial courses disproportionately impact Black and Latinx students.
6. Colleges are not informing students that enrolling below transfer level reduces their likelihood of completion.

Remedial Courses Decrease Student Completion and Drive Racial Inequity

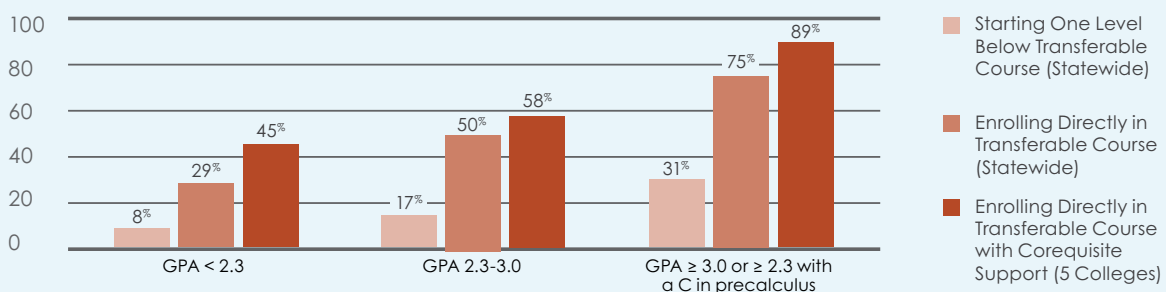
More than a decade of research has established that every remedial course students take substantially reduces their likelihood of completing transferable, college-level English and math requirements, a critical early milestone on the path to a degree.¹⁵ This research was a key motivator for AB 705, which noted that, “Students placed into remediation are much less likely to reach their educational goals. According to the Student Success Scorecard, just 40 percent go on to complete a degree, certificate, or transfer outcome in six years, compared to 70 percent for students allowed to enroll directly in college-level courses.”¹⁶

The legislation also noted that community colleges' placement practices have “serious implications for equity, since students of color are more likely to be placed into remedial courses.” In fall 2015, for example, white students were twice as likely to begin in transfer-level math and English as Black students, and nearly twice as likely as Latinx students.¹⁷

Are any students better off starting in a class below transfer level? After AB 705 was signed into law, researchers from the Multiple Measures Assessment Project (MMAP) analyzed nine years of high school and community college transcripts from across California to answer this question. Figure 1 is one illustration of what they found. Regardless of their high school grades, students are at least 20 percentage points more likely to complete a college statistics course if they enroll in it directly than if they start one math course below transfer level. If students enroll in a section with corequisite support, they are at least 35 percentage points more likely to complete.¹⁸

Figure 1: Completion of Transferable Statistics

Students with low GPAs who are placed directly into transfer-level courses are three times more likely to complete transfer-level statistics than their peers who are placed one level below transfer level (29% vs. 8%), and students receiving corequisite support in a transfer-level course are five times more likely to complete transferable statistics than their peers placed one level below transfer level (45% vs. 8%).



Source: Analysis by the Multiple Measures Assessment Project, Statewide Data from 2007-2014, Corequisite Data from F2016-F2018 (N=1,888).

The same patterns held true for transferable English composition courses, for business and STEM math, and for every student subgroup researchers examined, including students with the lowest high school GPAs, students from every racial/ethnic group, low-income students, English language learners who graduated from a U.S. high school, and students with disabilities.¹⁹ Further, data from the first full year of AB 705 implementation show that even students who did not complete Algebra 2 in high school are more likely to complete a transfer-level B-STEM course if they enroll directly than if they begin in a non-transferable Intermediate Algebra course.²⁰

Bottom line: In both English and math, for every demographic group examined, students are much more likely to complete when they start in a transfer-level class instead of a remedial one. Maximizing student completion, therefore, requires colleges to ensure that students begin in a transferable class.

Corequisite Models of Remediation Increase Student Completion

A related body of research shows that, for less academically prepared students, corequisite remediation – where students enroll directly in a transfer-level class with additional support – produces much higher completion of transfer-level English and math than stand-alone remedial courses. This is illustrated in figure 1, where students with low high school GPAs are over five times more likely to complete a college statistics class if they enroll in a section with corequisite support than if they begin one course below transfer level (45% vs. 8%).



The Public Policy Institute of California (PPIC) examined student outcomes at California community colleges offering corequisite models with more than 100 students enrolled in 2018-19. They found that corequisite students were more likely to complete transfer-level English and math at every college examined. In English, corequisite students' completion was twice that of students starting in a below-transfer course (63% in one term vs. 32% in a year). In math, corequisite students' completion was more than four times higher than students who began in a course below transfer level – 65% in one term versus 14% in a year. At most colleges, corequisite completion was at least 30 percentage points higher in English and at least 50 points higher in math.²¹ These patterns persisted as more colleges implemented corequisite models in fall 2019.²²

These findings echo research from other states that have implemented corequisite models at a large scale.²³ For example, when Tennessee's public colleges and universities replaced traditional remedial courses with corequisite models, completion of transferable college math increased from 12% to 51% among students deemed underprepared, with the greatest gains for those with the lowest ACT scores (18 times as many completed).²⁴

Finally, research shows that students in corequisite models not only complete transferable English and math requirements at higher rates, but they are more likely to earn more credits²⁵ and persist to their second year in college.²⁶ One randomized control experiment even found that corequisite remediation in math was associated with gains all the way to degree completion.²⁷

Bottom line: The evidence is unequivocal that students are far more likely to complete transfer-level English and math requirements in corequisite models than in remedial courses.

Aligning Transfer-Level Math With Students' Program of Study Increases Math Completion



Nationally, universities and community colleges are moving away from one-size-fits-all math requirements to a pathways approach that tailors math requirements to students' chosen programs of study.²⁸ Under a pathways approach, students in the humanities and social sciences, for example, take liberal arts math and statistics courses (SLAM), while students in math-intensive business, science, technology, engineering, and math programs (B-STEM) enroll in calculus-based pathways.

Numerous studies have shown that math pathway reforms increase transfer-level math completion and other long-term academic outcomes.²⁹ In an early study of such reforms, PPIC researchers found that students in statistics pathways completed math requirements for transfer at three times the rate of students in traditional algebra remediation and were more likely to transfer within three years.³⁰ And when math pathways are combined with direct access to transfer-level math and aligned corequisite support, completion gains are amplified.³¹ One randomized, controlled study found that students allowed access to college-level statistics with concurrent support had significantly higher transfer-level math completion and significantly higher graduation rates compared to similar students beginning in remedial courses.³²

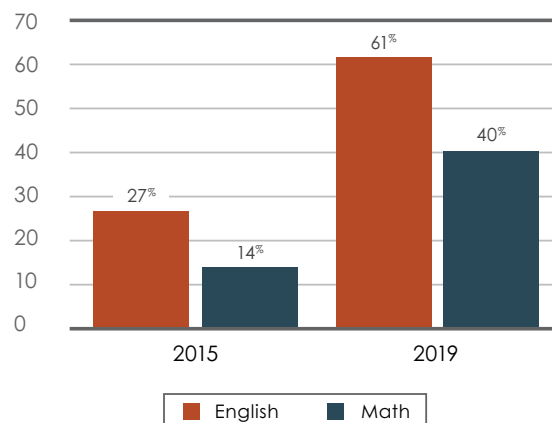
Bottom line: Maximizing students' completion of transfer-level math requires ensuring they take the right math for their program of study.

AB 705 Has Produced Large Completion and Equity Gains

During the first year of AB 705 implementation, colleges made large strides in reducing remedial course offerings and replacing them with corequisite models. Two recent studies show that, as predicted by prior research, these changes have produced sizable increases in student completion: Twice as many students are now completing their transferable English and math requirements as did just a few years before.³³

Between fall 2015 and fall 2019, the first year of full AB 705 implementation, one-term completion rates increased from 14% to 40% in math and from 27% to 61% in English (Figure 2).³⁴ In raw numbers, this meant over 57,000 more students completed transfer-level English statewide, and over 31,000 students completed transfer-level math.

Figure 2: Completion of Transferable, College-Level Courses in One Term, Pre- and Post-Reform



Data shows the share of students who successfully completed a transfer-level course in one term among all the students who took any English or math course for the first time in fall.

Disaggregating outcomes for different student demographic groups, researchers found that every group examined had substantially higher one-term completion in fall 2019 than in fall 2015, the period before California community colleges began implementing placement reform and corequisite models. This includes groups that have historically experienced disproportionately low outcomes:

- Latinx students' completion rates increased from 20% to 56% in English and from 8% to 33% in math.³⁵
- Black students' completion rates increased from 15% to 48% in English and from 7% to 27% in math.³⁶
- Students from all ranges of high school GPA saw substantial completion increases in both English, SLAM, and B-STEM math, with the largest gains among low-GPA students.³⁷
- Completion rates among students with registered disabilities (those using disabled students programs and resources) increased from 18% to 47% in English and from 7% to 29% in math.³⁸

Substantial equity gaps remain in Black and Latinx students' completion, and Black students are particularly underrepresented in successful completions of transfer-level math. Nevertheless, PPIC researchers note that “the equity gap between white students and African American and Latino students closed significantly.” Colleges made especially large strides with Latinx students: The number of colleges where transfer-level completion is equitable or approaching equitable increased from 19 to 66 colleges in math and from 26 to 96 colleges in English.³⁹

PPIC researchers note that one-term completion rates varied widely across the system in fall 2019, ranging from 17% to 63% in math and from 34% to 81% in English. Analyzing differences across colleges, they found a strong correlation between a college's completion gains and the extent to which the college has expanded students' direct enrollment in transfer-level courses. The correlation is so strong that it explains 62% of the differences in English completion gains across colleges and 55% of those in math.



“Given the complexity of factors affecting educational outcomes, it is an important finding that a single variable, within the direct control of colleges, is associated so strongly with improvements in completion.”⁴⁰

Bottom line: AB 705 has produced dramatic improvements in completion and equity. However, completion rates vary widely across the system and are largely explained by the degree to which colleges enroll students in transfer-level courses.

Optional Remedial Courses Disproportionately Impact Black and Latinx Students

As noted earlier, racial equity concerns were central to motivation for AB 705. Under previous placement policies, students of color were not only more likely to be excluded from transfer-level courses than white students, they were also disproportionately more likely to have to take multiple remedial classes.⁴¹

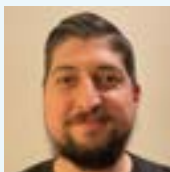
Further, inequities in English and math placement have been found to explain 50-60% of racial/ethnic equity gaps in students' long-term outcomes, like certificate and degree completion and transfer to a four-year university.⁴²

AB 705 has made progress eliminating these structural inequities. White students had previously been twice as likely to begin in transfer-level English as Black students (55% vs. 24% in fall 2015), but in fall 2019, there were just 4 percentage points difference between white and Black students' enrollment in transfer-level English (97% vs. 93%). But inequities remain, especially in math. Though all groups had higher enrollment in transfer-level math in fall 2019, colleges still disproportionately enrolled Black and Latinx students below transfer level. Remedial enrollments by racial/ethnic group: Asian, 17%; white, 20%; Latinx, 24%; and Black, 29%.⁴³

These findings echo previous research in Florida, which found that even when remedial courses are optional, colleges still disproportionately enroll underrepresented students of color in them, especially Black students.⁴⁴ In their 2019 study of early AB 705 implementers, PPIC researchers cautioned about the equity implications of colleges continuing to offer remedial courses:

“The prospect of some colleges eliminating developmental education while others offer it on an optional basis raises questions about equity: the likelihood that historically underrepresented students will complete transfer-level English [and math] could be affected by which college they attend.”⁴⁵

Bottom line: When remedial courses are optional, colleges continue to disproportionately enroll Black and Latinx students in them, and this is a key driver of ongoing equity gaps in completion.



Andrew Fonticella, Citrus College

Andrew Fonticella liked math in high school and got as far as Algebra II, but after a six-year stint in the navy, he had forgotten a lot and felt uncertain about taking math in college. When he started pre-calculus with corequisite support at Citrus College in Fall 2019, he felt better almost immediately.

“If I had been in a regular pre-calculus class, I would have struggled because there is so much material to cover,” he says. “Having the time to work together with other students to really think through the problems helped me learn.” Fonticella earned an A in the class.

“People talk about the benefits of working together, but in this class I actually learned how to work with others. That skill has been super valuable in my other classes, even though they weren't taught in the same way,” he says.

Fonticella went on to earn an A in Calculus I and a B in Calculus II. He plans to transfer to San Francisco State University to study biology as a pre-medicine student in spring 2021.

Colleges Are Not Informing Students That Enrolling Below Transfer Level Reduces Their Likelihood of Completion

AB 705 makes it difficult for colleges to require that students take remedial courses, but it does not prevent colleges from offering them. With so many colleges continuing to enroll students in remedial courses, the question becomes: How are they meeting their legal obligation to maximize student completion? If colleges are not assigning students to transfer-level courses, are they at least informing students that enrolling below the transfer level has serious ramifications for their academic progress?

Several recent studies have examined these questions and found that colleges are not being transparent with students about their placement policies or the fact that enrolling in remedial courses substantially reduces their likelihood of completing transfer-level requirements.

Last year's report, *Getting There II*, analyzed the websites of 11 colleges where remedial courses constituted at least 30% of introductory course offerings. It found that none of the colleges informed students that enrolling in a remedial course dramatically reduced their likelihood of completion, and that students therefore could not protect their AB 705 right to begin in the classes where they have the greatest likelihood of completion. Further, a number of colleges were actively encouraging students to under-place themselves into below-transfer courses, such as by describing transfer-level courses as "advanced" and remedial ones as less threatening — "slower paced," for "students who want more time and support."⁴⁶

These findings echo the 2020 study, *Crossing Signals: What College Websites Tell Students about Taking Mathematics*, which examined the websites of 17 community colleges, only one of which overlapped with the 11 examined in *Getting There*: "Colleges that continue to offer remedial courses should ensure that students understand the advantages of enrolling in college-level courses – enrolling with support as needed. In our review, we unfortunately did not identify any good examples of colleges doing this." The researchers note that, "Rather than explaining to students that they are more likely to succeed in mathematics if they begin in a college-level course, many sites give the false impression that remedial courses are required or at least recommended."⁴⁷

PPIC researchers have identified a number of ways that students continue to be steered into remedial courses post-AB 705, particularly in math. These include recommendations from counselors; math sequence flowcharts that prominently feature remedial courses; self-assessment questions and sample reading, writing, and math problems that trigger students' anxiety; and guided placement processes that prompt students to consider remedial courses, even if their high school grades show they would be more successful in a transfer-level course. The researchers also noted that colleges are not making their placement policies and results publicly available, as required by AB 705's companion legislation, AB 1805:

"During the first semester of full implementation, the majority of colleges did not provide detailed information about their assessment and placement system on the college website and/or public documents. This likely left students unable to make a well informed decision about whether attending a given college would affect their likelihood of accessing and successfully completing transfer-level math and English courses within one-year. This was especially true in math—here, the campus a student attends continues to play a critical role on whether or not a student gets access to transfer-level math."⁴⁸

Bottom line: When colleges ask students to choose between a transfer-level math course and a remedial prerequisite, they are asking them to make a high stakes decision, often without informing them that their choice significantly affects their likelihood of completing the required transfer-level math course.

PROGRESS ON AB 705 IMPLEMENTATION

A look at fall 2020 class schedules highlights the momentum, or lack of momentum, that colleges made in the second year of AB 705 implementation. What do class schedules say about the state's progress on AB 705's requirement that colleges maximize the likelihood that students enter and complete transfer-level coursework in English and mathematics?

To answer this question, a team of community college English and math faculty examined fall 2020 course schedules for 114 community colleges across California, counting the number of sections of introductory transfer-level courses in the schedule, as well as the number of pre-transfer (remedial) sections.⁴⁹ The counts were used to calculate the percentage of introductory sections at the transfer level. For example, a college with 80 sections of freshman composition and 20 sections of remedial reading and writing is described as having 80% transfer-level offerings in English. Colleges were then categorized by strength of implementation. "Strong implementer" colleges offer 90-100% of their introductory sections at the transfer level, whereas "medium implementer" colleges offer 70-89%, and "weak implementer" colleges offer less than 70%. (See appendix for more detail.)

This section presents the results of that analysis, including colleges' progress in 1) growth of transfer-level offerings, 2) replacing remedial courses with corequisite support, 3) aligning math offerings with students' programs of study, and 4) providing alternative ways to meet degree requirements and math prerequisites.

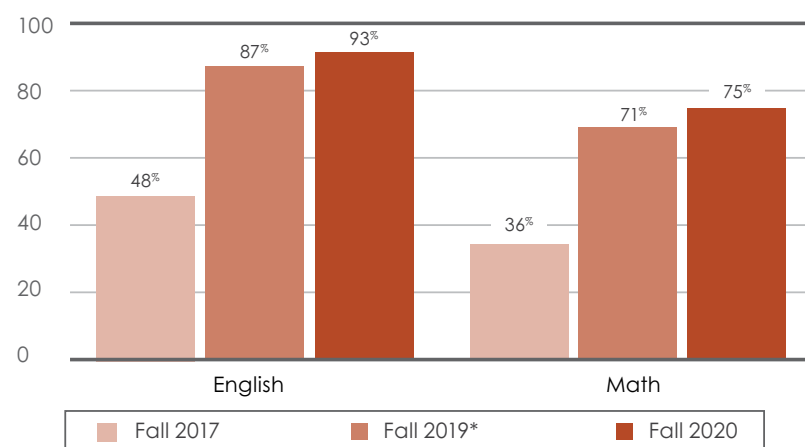
Transfer-Level Courses Grow Statewide

Students who begin in transfer-level math and English are more likely to complete transfer requirements. To what extent are colleges aligning their course offerings with this standard by offering transfer-level courses instead of remedial courses?

In fall 2020, California moved into the strong implementation range in English, with transfer-level courses constituting 93% of the introductory English offerings systemwide, up from 87% the year before. In math, transfer-level course offerings increased from 71% to 75%, which means that 25% of the introductory math sections offered statewide continued to be remedial courses.

In English, 46 colleges increased their transfer-level offerings by 5 percentage points or more, and 45 colleges did in math. The number of strong implementer colleges increased from 54 to 77 in English, and from nine to 17 colleges in math. The number of weak implementer colleges declined from 10 to one in English, and from 41 to 33 colleges in math. In math, 12 colleges were in the very weak implementer category, with fewer than 60% transfer-level sections.⁵⁰

Figure 3: Percentage of Introductory Sections That are Transfer Level



* Fall 2019 math data was adjusted to reflect methodology changes in 2020 data collection (see Appendix); Fall 2017 data is unadjusted.

Strong English Implementer Colleges

In English, 77 colleges offered 90-100% of their introductory sections at the transfer level, up from 54 colleges last year, and 23 of these colleges offered no stand-alone remedial courses.

Table 1: Strong Implementers in English

College		% Transfer-Level	
Allan Hancock College	92%	Merced College	95%
American River College	98%	Merritt College*	91%
Bakersfield College	93%	Modesto Junior College	97%
Barstow Community College	100%	Moreno Valley College	100%
Berkeley City College*	100%	Mt. San Jacinto College	98%
Butte College	97%	Norco College	100%
Cabrillo College	96%	Palo Verde College*	90%
Cañada College	96%	Palomar College	99%
Cerritos College	99%	Pasadena City College*	100%
Chaffey College	96%	Porterville College*	100%
Citrus College*	93%	Reedley College*	100%
Clovis Community College	100%	Rio Hondo College	94%
Coastline Community College	93%	Riverside City College*	95%
College of San Mateo	100%	Saddleback College	95%
College of the Canyons	95%	San Bernardino Valley College	95%
College of the Redwoods	96%	San Diego City College	90%
College of the Sequoias*	100%	San Diego Mesa College	94%
College of the Siskiyous	100%	San Diego Miramar College	92%
Columbia College	100%	San Joaquin Delta College	100%
Compton College	92%	Santa Ana College	99%
Contra Costa College	100%	Santa Barbara City College	98%
Cosumnes River College	91%	Santa Monica College	95%
Crafton Hills College	97%	Santa Rosa Junior College	90%
Cuyamaca College*	100%	Santiago Canyon College*	100%
Diablo Valley College	99%	Shasta College	90%
El Camino College	93%	Sierra College*	97%
Evergreen Valley College*	92%	Skyline College	98%
Foothill College	95%	Solano Community College	100%
Fresno City College	100%	Southwestern College	94%
Fullerton College	100%	Taft College	93%
Glendale Community College	94%	Ventura College	95%
Golden West College*	92%	Victor Valley College*	96%
Grossmont College	99%	West Hills College Coalinga	100%
Hartnell College	93%	West Hills College Lemoore	100%
Irvine Valley College	100%	West Los Angeles College	91%
Lake Tahoe Community College	90%	West Valley College	91%
Las Positas College	93%	Woodland Community College	95%
Los Angeles Mission College	94%	Yuba College	96%
Los Angeles Southwest College	96%		

* College is a strong implementer in English and math.

Strong Math Implementer Colleges

In math, 17 colleges offered 90-100% of their introductory sections at the transfer level, up from 9 colleges last year. Three of these colleges offered no stand-alone remedial courses. Fifteen were also strong implementers in English.

Table 2: Strong Implementers in Math

College	% Transfer Level		
Berkeley City College*	90%	Pasadena City College*	100%
Citrus College*	90%	Porterville College*	100%
College of Marin	93%	Reedley College*	93%
College of the Sequoias*	100%	Riverside City College*	92%
Cuyamaca College*	95%	San Jose City College	92%
Evergreen Valley College*	91%	Santiago Canyon College*	90%
Golden West College*	91%	Sierra College*	90%
Merritt College*	94%	Victor Valley College*	91%
Palo Verde College*	94%		

* College is a strong implementer in English and math.

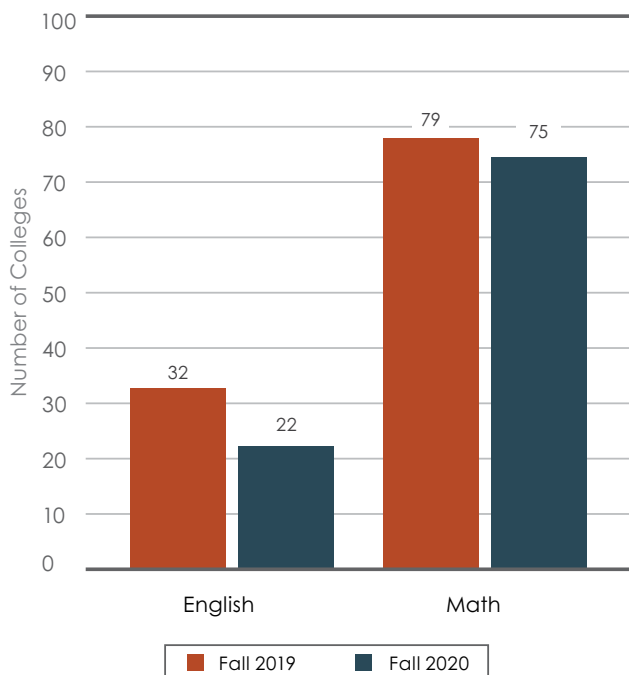
Colleges Make Modest Progress Scaling Up Corequisite Models

Research in California and other states shows that, compared to prerequisite remedial courses, corequisite models produce higher completion of transfer-level English and math for students deemed underprepared. Given this, to what extent are colleges maximizing student completion by replacing remedial sections with corequisite support?

In both English and math, colleges made some progress scaling up corequisite models in which students receive additional support while enrolled in a transfer-level course, instead of delaying their educational progress with a stand-alone remedial prerequisite. In English, the number of colleges offering more remedial than transfer-level sections with corequisite support decreased from 32 in fall 2019 to 22 one year later. In math, the number decreased from 79 to 75 colleges.

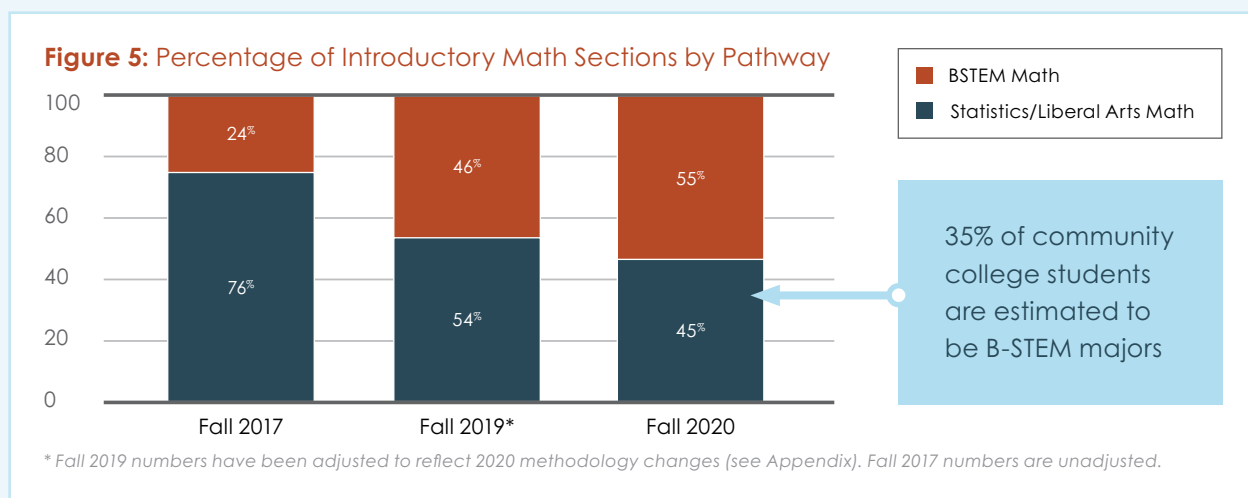
While the scale of corequisite offerings has increased slightly, there has been little change in the number of colleges offering these models. One additional college offered corequisite models of English composition in 2020, bringing the total to 100 colleges. Two new colleges are offering corequisite models of statistics/liberal arts math, bringing the total from 91 to 93 colleges. The number of colleges offering corequisite-supported STEM math held steady at 84.

Figure 4: Colleges Offering More Remedial Sections Than Transfer-level With Corequisite Support



Math Offerings Are Better Aligned With Students' Goals

Over the last several years, colleges have made progress in offering more statistics and quantitative reasoning courses for students in non-math-intensive majors. Pre-AB 705, statistics and liberal arts math (SLAM) courses represented just 24% of introductory math sections; in fall 2020, they represented 55% of these sections. Despite this progress, colleges are still not offering enough of these classes to serve the estimated 65% of students in programs that require statistics or liberal arts math.⁵¹ On the other hand, while an estimated 35% of students are majoring in math-intensive business or STEM fields, these courses represent 45% of introductory math offerings.



Colleges Provide Alternative Ways to Meet Degree Requirements and Math Prerequisites

With its focus on maximizing student completion, AB 705 has required colleges to navigate the myriad interdisciplinary issues connected to remedial math. They have had to figure out how to handle remedial math prerequisites for science courses, math requirements for associate degrees and career-technical programs, and placement for B-STEM-directed students with weak algebra preparation.

At strong implementer colleges, these issues have been resolved with strategies that do not involve remedial math and thus do not reduce students' likelihood of completing math requirements for transfer. Students meet associate degree requirements with transferable classes, which often have higher pass rates and more meaningful quantitative reasoning goals than algebra remediation. Students in career-technical programs take occupational math courses that meet transferable quantitative reasoning requirements in general education at the California State University. Science departments use high school grades to determine eligibility for courses with remedial math prerequisites, allow placement into or completion of transfer-level math to meet prerequisite requirements, or develop a low-unit corequisite where math review is contextualized within the discipline.⁵²

Perhaps most important, strong implementer colleges are seeing that corequisite models provide a much more effective and equitable entry to B-STEM fields than non-transferable intermediate algebra sections. At colleges that have completely or nearly replaced non-transferable math courses with corequisite models, STEM enrollment is growing dramatically and becoming more diverse, and colleges are needing to expand their offerings of higher-level STEM classes.⁵³ In fall 2019, an additional 7,852 Latinx students and 596 additional Black students enrolled in transfer-level B-STEM than in fall 2018.⁵⁴ And data from the first year of AB 705 implementation shows that even students who did not complete Algebra 2 in high school are more likely to complete a transfer-level B-STEM course if they enroll directly than if they begin in a non-transferable Intermediate Algebra course.⁵⁵

**Josh Piero**, MiraCosta College

Josh Piero was a D minus student in high school. No one in his family had a college degree, and school just didn't seem important. "In my family," he says, "you finished high school and then you went into one of the trades."

Piero spent two years building houses and eight years in the Marines before he got tired of being seen as an unintelligent "knuckle-dragger." He enrolled at MiraCosta College in 2017, a decade after leaving high school. "I wanted to prove to myself that I was smart," he says.

Piero enrolled in a section of college composition with linked corequisite support. The support course included just twenty students and gave him lots of one-on-one time with his professor. He learned to create arguable thesis statements, link topic sentences back to his thesis, and integrate quotes. "It really taught me about the structure of an academic essay," Piero says. "And it gave me a community of writers that let me hash out any questions I had."

The class included texts by heavyweight writers Michel Foucault, John Berger, and David Foster Wallace. At the end of the term, Piero recalls asking his professor, Jake Strona, "How come you never gave us any light readings?" He says Strona responded, "Because I knew you could do it, and I wanted to teach you to never stop reading; even if you're not getting it, just keep going!"

Piero earned an A in both college English and his next college writing class before transferring as an English major to the University of San Diego in 2018. When he tells his USD classmates some of the other things he's read, he says they ask, "What, were you trying to get your master's?" He responds, "No, it was English 100 at a junior college!"

**Mariam Shamon**, Cuyamaca College

Mariam Shamon was a political science major and afraid of math when she enrolled in statistics with corequisite support at Cuyamaca College. She left the class with an A and the realization that she was better at math than she had thought. She began considering a STEM career.

The next semester Shamon tried precalculus with corequisite support. "The support helped — a lot," she says. "We reviewed material that I had done before but forgotten or never really understood." Earning another A led her to Calculus, higher level math classes, and a civil engineering major.

Shamon transferred to San Diego State University and is on track to graduate in May 2021. She passed the six-hour national certification exam for engineers in training and got a great internship at CalTrans. "Sometimes I don't believe in myself," she says. "Then I realize that when I work on it, I can do almost anything."

"A lot of people underestimate themselves. They put up walls and say, 'I can't do it' and 'I'm not good at that,'" she says. "I got bad grades in math during high school. To see myself now means anyone can succeed in math, if they work and get the right support."

IMPLEMENTATION ISSUES UNDERMINING STUDENT COMPLETION AND EQUITY

The Fall 2020 class schedules also highlight issues that continue to undermine student completion and equity in the second year of AB 705 implementation. In this section we use the course schedule data from 114 colleges to spotlight troublesome issues in (1) ongoing remedial math offerings, (2) weakening implementation at some colleges, (3) geographic inequity, and (4) racial inequity.

Colleges Continue Offering Substantial Remedial Math

Despite the research showing that remedial classes undermine student completion, most colleges continue to devote substantial resources to remedial math. At nearly two-thirds of the state's colleges, transfer-level sections constitute less than 80% of the introductory math offerings in the course schedule, with remedial sections still representing more than 20% of sections.

Table 3: Implementation Uneven Across State

% Transfer-Level Offerings	English	Math
90-100%	77	17
80-89%	28	28
70-79%	8	36
60-69%	1	21
50-59%	0	10
40-49%	0	2

At 69 colleges, pre-transfer math sections constituted more than 20% of the introductory math offered in fall 2020

Why Have Colleges Retained so Much Remedial Math?

Part of the answer is that the transition to AB 705 was both more complex and more abrupt in math than in English. Instead of focusing on a single course – English composition – colleges needed to reimagine multiple pathways, including statistics and liberal arts math, business calculus, precalculus/college algebra, and math for elementary educators. And because so few colleges had developed math corequisites before AB 705, they had a shorter time frame to do it. Additionally, some practitioners may not be aware of the alternatives to remedial courses that strong implementer colleges have developed.

Beyond implementation logistics, however, is the issue of practitioner beliefs. Interviews by MMAP researchers found that, at colleges offering 85% or more transfer-level sections, practitioners “were more likely to support student capacity to succeed in transfer-level courses,” while at colleges with less than 65% transfer-level sections, practitioners were more likely to say “remedial courses are needed to accommodate students with lower skill levels.”⁵⁶

Drawing upon their own interviews with faculty and administrators, PPIC researchers noted that “there are some faculty, who even when presented with data, find it difficult to believe students can be successful.”⁵⁷

Just as budgets are a statement of values, course schedules are a statement about what colleges believe students should take. Examining fall 2020 schedules, it's clear that most colleges continue to operate from a belief that a lot of students don't belong in transfer-level math, and this belief is driving both lower completion and racial inequity.

Implementation Worsens at Some Colleges

While the overall statewide trend is toward stronger implementation, this was not the case at every community college. In math, 28 colleges increased their share of remedial offerings between fall 2019 and fall 2020; 19 colleges did so in English.

In some cases, the change appeared to have been driven by budget cuts that reduced transfer-level sections while protecting sections at the remedial level. In other cases, colleges added remedial sections beyond their 2019 levels. For example, one Central Valley college added 10 sections of remedial math and eight sections of remedial English. One Los Angeles area college went from zero sections of remedial English to 14. One San Diego area college added 17 new remedial sections in English, four in math. Another San Diego college cut seven transfer-level math sections, while adding seven remedial. And the college with the weakest implementation in the state added five sections of remedial math, while cutting a transfer-level section.

These changes may be partially influenced by the COVID-19 pandemic, which has prompted some counselors and faculty to argue that students needed remedial courses because of interruptions to their schooling in spring 2020.⁵⁸ This impulse, however, is not supported by research on maximizing students' likelihood of completion, which shows that even students who have only completed the ninth grade are more likely to complete transfer-level courses if they enroll directly than if they take a remedial class.⁵⁹



Danny Perez, Mount San Antonio College

One of Danny Perez's first essays got flagged by the online plagiarism detector. "I thought I was going to get kicked out of the class," he recalls. But then his teacher, Ned Weidner, surprised him. "Ned explained what I did wrong, and then the tutor helped me figure out how to cite correctly. I was able to fix my mistakes, and I got a good grade on the essay."

Before enrolling in Mt. SAC's college English with corequisite support, Perez lacked confidence in English. In high school, he had taken English classes for students with learning differences, until he decided to mainstream in senior year. "My teacher believed in me," he says, which helped him put in the extra work it took to catch up with his peers.

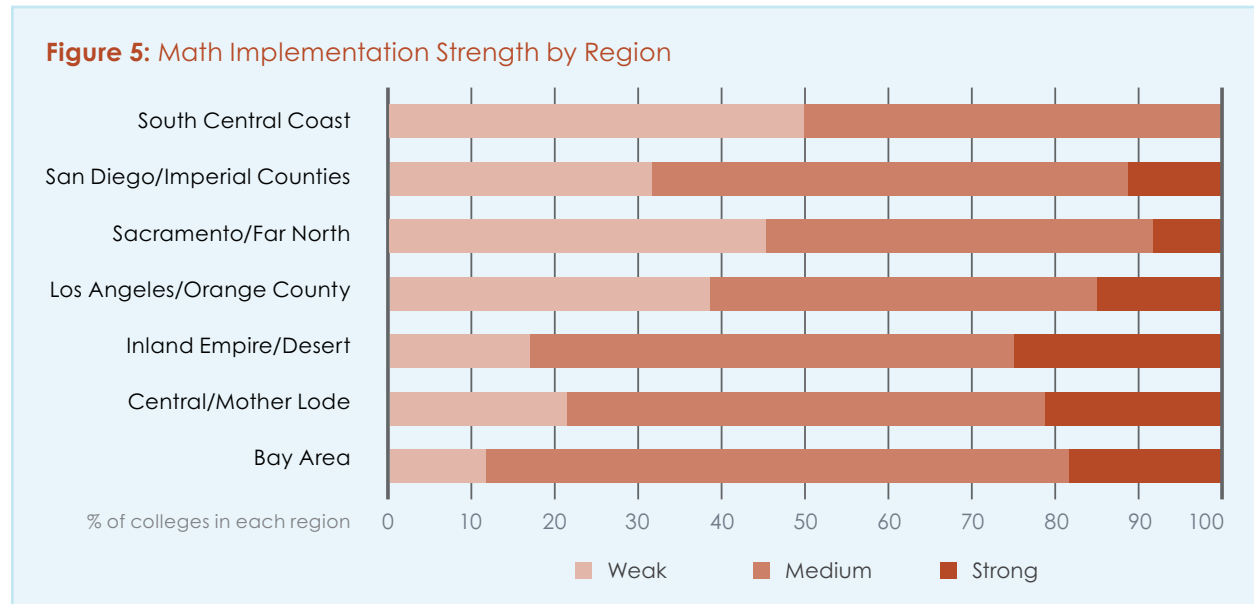
In college, he was afraid that teachers wouldn't care about students with disabilities, but on the first day of college English with corequisite support, his instructor asked students to come talk to him if they were part of the college's program for students with disabilities, and he told them not to be afraid to ask for more time if they needed it. Perez says this "kind and helpful" attitude reassured him that he belonged in the course.

The class read a book about school shootings, which Perez says kept his interest. The embedded tutor helped him tackle the homework and essays, manage his time, and overcome procrastination. He learned how to annotate and better comprehend college-level readings, how to do research, and how to structure his essays. And he gained confidence. "It was the first time in a while that I thought, *Oh, I love English*," he says. Perez said he knew that the instructor and the tutor both "really cared about me passing the class" and that this made him try even harder.

Geographic Inequity

The vast majority of California's students attend colleges with math offerings that do not meet the AB 705 standard of maximizing their likelihood of completion.

Figure 5 illustrates the uneven math implementation across the system's seven major regions. For example, there are no strong implementers among the eight colleges of California's South Central Coast region, which stretches from San Luis Obispo to Northern Los Angeles county. Further, half of the area's colleges are weak implementers. Among the 15 colleges in the Sacramento/Far North region, which stretches from the state capital to the Oregon border, there are seven weak implementers and only one strong implementer. At one remote northern college, transfer-level math represents only 57% of introductory sections offered, and students would have to drive 141 miles to the nearest strong implementer. In the Bay Area, only 3 out of 28 colleges are weak implementers, but students on public transportation still might spend more than two hours on multiple buses and trains to get to a strong implementer. These data make clear that students' ability to enroll directly in transfer-level math is strongly influenced by where they live.



Now that classes are online due to COVID-19, students can theoretically take their math at any one of the 17 strong implementer colleges in the state. In reality, PPIC researchers note that because colleges are not providing transparent public information about their placement practices, “a prospective student is unable to make an informed decision about whether or not to apply and enroll at a given college based on that institution's placement policies and their likelihood of accessing transfer-level math and English courses. The lack of transparency likely affects students' chances of accessing transfer-level courses, especially in math.”⁶⁰

Racial Inequity Undermines Implementation

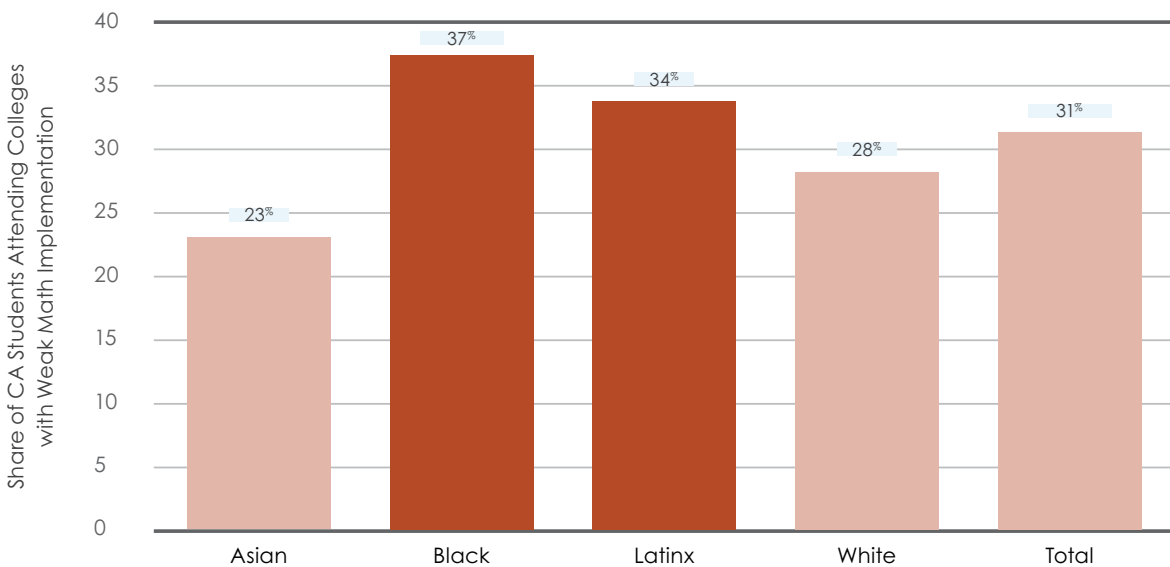
As noted earlier, Black and Latinx students have been disproportionately impacted by colleges' previous remediation policies because they were more likely to be excluded from transferable, college-level courses and more likely to have to take multiple remedial classes, with their chances of completion dropping with every remedial course in their path.⁶¹

While AB 705 has largely removed structural barriers to accessing transfer-level courses, colleges nevertheless disproportionately enrolled Black and Latinx students in remedial math in fall 2019. Remedial enrollments: Asian, 17%; white, 20%; Latinx, 24%; and Black, 29%.⁶²

To understand the extent to which California's Black and Latinx students have access to strong AB 705 implementation, we examined statewide demographic data⁶³ in relation to the extent to which colleges have maintained remedial offerings in math. We found that there are a few strong implementers serving a large share of the state's Black and Latinx students — Merritt, Pasadena, and Riverside — but that these colleges are the exceptions.

Across California, both Black and Latinx students disproportionately attend colleges maintaining large remedial math offerings.

Figure 6: Enrollment at Weak AB 705 Math Implementers by Race/Ethnicity



Further, among colleges serving the largest share of the state's Black population – those where Black enrollment exceeds 2,000 students – 59% are weak implementers in math (12 of 22 colleges). This is more than double the rate of weak implementation in the rest of the California Community Colleges system.

Finally, at colleges with large Black populations, students have less access to transfer-level classes with corequisite support. At 82% of the colleges serving more than 2,000 Black students, remedial course offerings exceed transfer-level courses with corequisite support.

These trends are especially worrisome in light of the strong correlation between enrolling in a remedial course and reduced completion of transferable requirements. If Black and Latinx students don't have equal access to transfer-level courses, they are less likely to complete these early academic milestones and make progress on their educational dreams. Inequitable AB 705 implementation, therefore, means that racial inequities in placement will continue to drive racial inequities in longer-term outcomes.

Figure 7: Weak AB 705 Math Implementation at Colleges Serving Large Black Populations

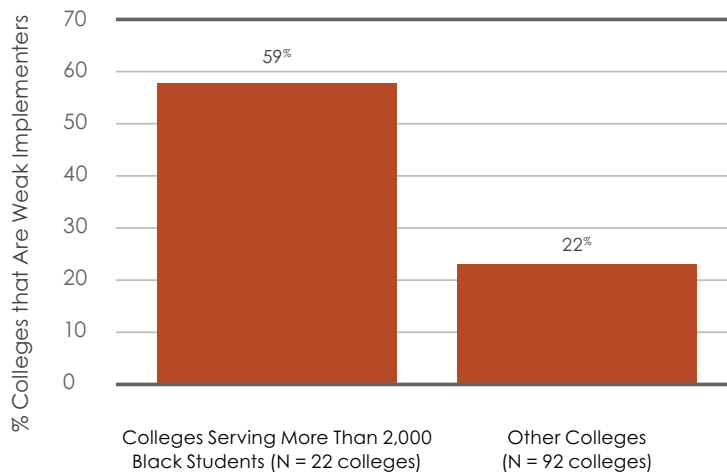
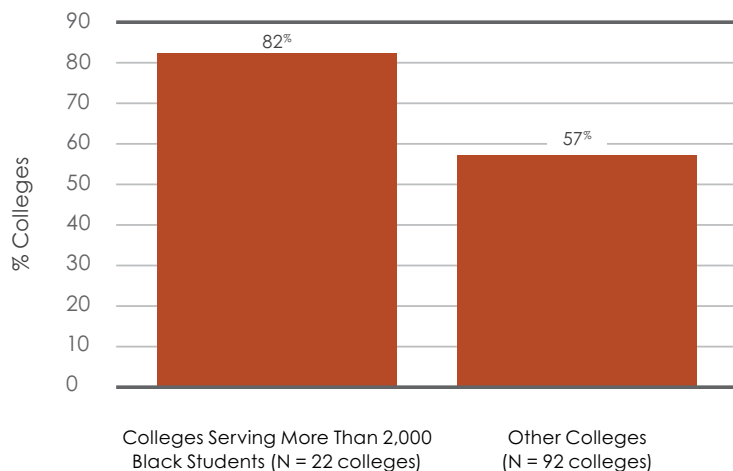


Figure 8: Colleges Serving Large Black Student Populations Offer More Remedial Sections Than Transfer-Level Sections with Corequisite Support



Inequitable Implementation Drives Inequitable Completion

Inequitable
Transfer-Level
Offerings

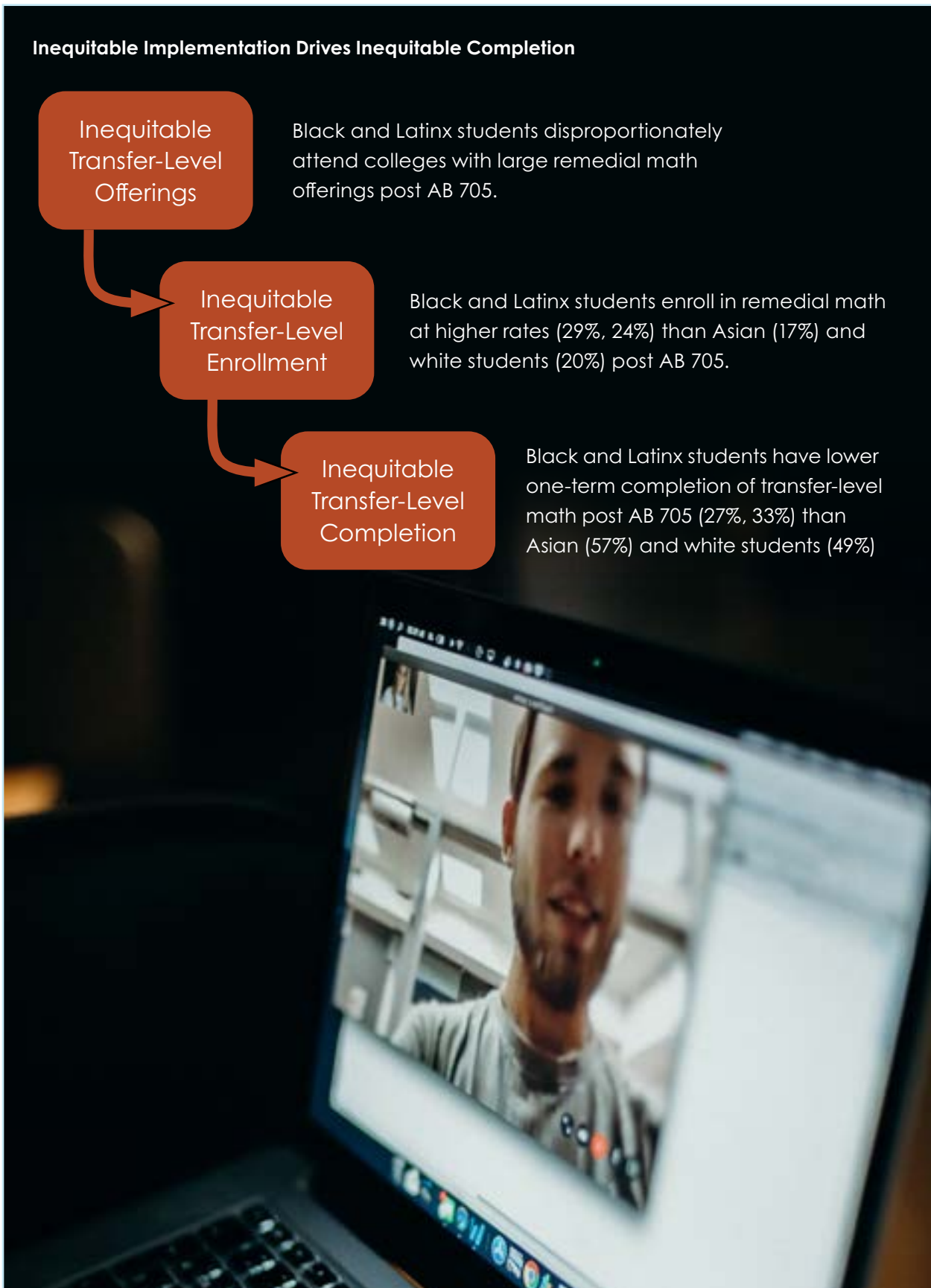
Black and Latinx students disproportionately attend colleges with large remedial math offerings post AB 705.

Inequitable
Transfer-Level
Enrollment

Black and Latinx students enroll in remedial math at higher rates (29%, 24%) than Asian (17%) and white students (20%) post AB 705.

Inequitable
Transfer-Level
Completion

Black and Latinx students have lower one-term completion of transfer-level math post AB 705 (27%, 33%) than Asian (57%) and white students (49%)



CONCLUSION

With AB 705, California has made substantial progress in transforming placement and remediation to increase student completion and equity. In the first semester of full implementation, student completion of transfer-level math and English doubled over the baseline year, with especially strong gains for Black and Latinx students. But as we enter the second year of implementation, progress has slowed and some colleges have backtracked by increasing remedial offerings.



The research summarized in section 2 provides clear direction about the practices that maximize — and undermine — student completion. We know that students have higher completion when they enroll directly in a transferable class, that their progress is stymied when they enroll in a remedial one, and that this is true across every demographic group studied to date, including students in B-STEM majors who have weaker math backgrounds. We know that, for less prepared students, corequisite models produce dramatically higher completion than stand-alone remedial courses and that these results are amplified in math when combined with math pathways. We know that colleges disproportionately enroll Black and Latinx students in remedial courses, even when these courses are optional, and that remedial placement is a primary driver of racial inequities in degree, certificate and transfer rates. Finally, we know that many colleges are not informing students that enrolling in remedial coursework makes them less likely to complete requirements for transfer, and that this prevents students from protecting their rights under AB 705.

Three years after AB 705 was signed into law, implementation remains deeply inequitable across the state. With only 15 colleges that are strong implementers in both math and English, the vast majority of California's 2+ million students attend colleges that are not maximizing their likelihood of completion. In continuing to offer so much remedial math, colleges are operating from long-standing deficit-based beliefs that students do not belong in transfer-level courses, ignoring the evidence that this is where students have the greatest likelihood of completion. Research hasn't identified any group of students whose completion benefits from starting in a below-transfer course, yet at 69 colleges, these courses still constitute more than 20% of introductory math offerings.

Especially troubling is the finding that Black and Latinx students disproportionately attend colleges that have maintained large remedial math offerings. Predictably, these students were also the least likely to enroll in transfer-level math in fall 2019, and the least likely to complete it. Of course, there are many factors influencing inequitable outcomes, but the course schedule is something over which colleges have complete control. Maximizing student completion and increasing racial equity is fully within our power.

AB 705 has already produced dramatic improvements in student outcomes, but the work is not done. It's time for community colleges to step up to our affirmative responsibility under the law and ensure that students begin in the courses where they have the greatest likelihood of completing these early milestones in their educational journey.

Maximizing Student Completion under AB 705:**Recommendations for Action**

AB 705 has done much to eliminate long-standing structural barriers to students' progress in college, but more is needed to ensure that all students benefit from these reforms and that persistent racial inequities are addressed. The research is clear that our first priority for action is to ensure that students enroll in transfer-level coursework in English and math. For those deemed underprepared, support should be offered through corequisite models instead of prerequisite stand-alone remediation. The following are recommendations for how various stakeholders can make this happen.

Recommendations for Community College Students

1. Students should know that, even if they are not confident in English and math, they are much more likely to complete transfer-level courses when they enroll directly in them rather than taking a remedial course. Students who feel unsure should seek out tutoring and enroll in a section with corequisite support.
2. Students should know that they have a right to enroll directly in transfer-level English and math. If their college refuses them access to these courses, does not offer enough sections of the transfer-level course they need, and/or does not provide corequisite support at the transfer level, students should shop around for better options at other colleges, especially now that most instruction is online because of the pandemic. Students should also consider filing a complaint with their colleges and the state Chancellor's office for non-compliance with AB 705. The website ab705.org provides guidance about how students can advocate for their rights.

Recommendations for Community College Faculty

1. Faculty need to actively work to improve their college's response to AB 705, with the goal of maximizing equitable student completion of transfer-level courses, including:
 - a. Replacing remedial sections with corequisite models at the transfer level, with corequisite support tailored to different math pathways;
 - b. Developing alternatives to stand-alone remedial courses for meeting associate degree requirements and math prerequisites in other disciplines;
 - c. Participating in ongoing communities of practice on teaching in introductory transfer-level classes, including working to identify common areas of student difficulty and developing strategies for addressing them, sharing approaches for reaching students with a range of skill levels and prior experience, engaging in race-conscious inquiries into how their classroom practices may be contributing to racial inequity, teaching with culturally relevant and anti-racist pedagogy, and replacing deficit-based assumptions with a growth mindset about student capacity;
 - d. Developing additional models of concurrent support for students at risk of poor outcomes, including those with disabilities and low high school GPAs (e.g., provide case management for students entering with GPAs below 2.0 and embed tutors in all corequisite sections).
2. Faculty support for strong AB 705 implementation is essential to countering the continued vocal opposition from some of their colleagues and statewide faculty leaders. Faculty should work with local departments, committees, academic senates, and other governance bodies to advocate for the equitable implementation of practices that maximize student completion, including shifting the course schedule from remedial to corequisite offerings.

3. Though the Academic Senate for California Community Colleges originally opposed AB 705, now that the gains for students are so clear, this group should actively support colleges to implement corequisite remediation and other research-based practices that dramatically increase student completion, with particular attention to supporting equitable completion among Black and Latinx students.

Recommendations for College and District Leaders

1. College/district boards should set a deadline to dramatically reduce their remaining sections of below-transfer English and math in the 2021-22 academic year and completely eliminate them by Fall 2022.
2. If colleges retain any below-transfer English and math in 2021-22, they should take steps to deter students from enrolling, such as registration blocks that require students to meet with a counselor, review data on the impact of below-transfer courses on their likelihood of completion, and sign an informed consent document acknowledging that they are enrolling in the course against the college's advice.
3. College administrations should use Student Equity and Achievement funds to support full- and part-time faculty with reassigned time, stipends, and other resources to enable them to replace below-transfer English and math courses with corequisite models.

Recommendations for The Community College Chancellor's Office and the Board of Governors

1. Though the deadline for AB 705 was fall 2019, the California Community Colleges Chancellor's Office afforded colleges a two-year grace period to pilot new approaches to placement and remediation, and it has developed reporting and evaluation protocols to assess colleges' implementation. Now that the grace period is ending, the state Chancellor's Office should provide districts with clear, updated guidance about how to meet AB 705 requirements, based upon the most current research on practices that maximize – and undermine – student completion and equity.
 - a. Colleges should be directed to stop problematic practices that are exacerbating racial inequities in transfer-level enrollment, including using counselors and guided placement processes to steer certain students into remedial courses, "requiring enrollment in remediation, requiring that students meet multiple criteria (e.g., GPA and course grade threshold) for placement into gateway courses, and using reading and writing samples, math problems, and self-assessments to help determine students' college readiness."⁶⁴
 - b. Colleges should be directed to implement practices that research has shown to dramatically improve transfer-level outcomes for all demographic groups – first and foremost, replacing remedial courses with corequisite models and other concurrent support at the transfer-level.
 - c. Colleges should be directed to restrict remedial enrollment to only those groups for whom such classes meet the evidentiary bar of maximizing transfer-level completion.
2. Clear state guidance based on current research will go a long way toward increasing transfer-level completion and ameliorating racial inequity system-wide. However, the Board of Governors should support the Chancellor's Office to pursue stronger enforcement actions with individual colleges as needed.

Recommendations for State Policy Makers

1. The legislature should consider revising AB 705 to tighten the loophole under which colleges can continue enrolling students in English and math classes that do not meet the legal standard of maximizing their completion.
2. The state should also consider severely restricting or eliminating the use of public dollars to offer below-transfer English and math starting in fall 2022.

APPENDIX

Methodology & Data Collection

This study includes 114 California community colleges (the small online college Calbright was excluded, and newly independent Madera College was treated as part of Reedley College). For each college, we identified introductory-level math and English courses. Introductory-level courses include both transfer-level courses that satisfy general education transfer requirements in English composition or math/quantitative reasoning, and pre-transfer-level courses that cover traditional developmental English or math content through Intermediate Algebra. At the transfer level, courses were considered introductory only when they did not have another transferable course listed as a prerequisite.

For each college, we counted the number of sections of introductory transfer-level courses in the schedule, as well as the number of sections of non-transferable remedial courses. The counts were then used to calculate the percentage of introductory sections being offered at the transfer level. For example, a college with 80 sections of freshman composition and 20 sections of remedial reading and writing is described as having 80 percent transfer-level offerings in English.

Data collection occurred between June and early August of 2020. Findings, therefore, may not reflect some class cancellations and additions to the schedule.

Introductory Transfer-Level Courses

- “Transfer-level” courses receive credit toward a baccalaureate degree upon transfer to a four-year university. An “introductory transfer-level” course is the first course in a student’s program of study at a community college that counts for general education transfer credit. These courses may have pre-transfer-level prerequisites but do not have as a prerequisite another transfer-level course that counts for GE transfer credit.
- For both disciplines, introductory transfer-level courses include both standard sections and sections with additional concurrent support (corequisite/enhanced models).
- In English, introductory transfer-level courses included the first semester of college composition, as well as ESL courses that meet the composition requirement. We did not include English courses not related to the composition requirement (e.g., literature or creative writing).
- To identify introductory transfer-level courses in math, we examined courses in math, biology, behavioral science, business, computer science, economics, psychology, sociology, and statistics departments.
 - For students in math-intensive business and STEM majors, we included any course that satisfied GE math or quantitative reasoning requirements (CSU Area B4 or IGETC Area 2). This included courses such as college algebra, precalculus, trigonometry, applied calculus, and finite math, when these courses did not have a transfer-level prerequisite.
 - For students in non-math intensive majors, we counted math for elementary educators, liberal arts math, and statistics offered in the math department and in other disciplines (e.g., psychology, economics, business).

Remedial Courses

- In both disciplines we included credit and non-credit courses, both in math and English departments and in other related departments (e.g. basic skills departments, reading departments).
- In English, we counted reading and writing courses below the level of freshman composition. We did not include courses in ESL in our remedial English counts.
- In math, we included courses in the traditional sequence of stand-alone remedial courses (from arithmetic to intermediate algebra), pre-statistics, and specialized math courses for students in career and technical programs when offered in math departments.

- In our remedial counts, we did not include corequisite courses attached to transfer-level sections, support courses offered in tutoring and learning centers, courses for adults who have not finished high school, or courses focused on content/skills not typically included in traditional developmental English or math sequences (e.g., courses in phonics).

Proportion of B-STEM Offerings

We also analyzed the proportion of introductory courses devoted to math-intensive business and STEM areas.

- We counted as B-STEM the transferable courses listed above for students in math-intensive majors, along with courses in the traditional sequence of stand-alone remedial courses.
- Pre-transfer statistics and specialized career and technical education courses were not included in B-STEM counts.

Adjustments to Methodology From Fall 2019

We made two major methodological changes to improve this year's data collection in math:

- Definition of "introductory transfer-level courses": If a course had a transfer-level prerequisite, it was not included in the counts of introductory sections this year. For example, Precalculus is counted as an introductory course at colleges where the prerequisite is intermediate algebra (pre-transfer-level) but not at colleges where the prerequisite is a transferable math course, e.g. College Algebra.
- Combined sections: We changed our way of counting overlapping sections taught by the same faculty, such as classes where students work on different levels of computer-based remedial math review at the same day, time, and location. This year, if multiple sections had the same day, time, location, and instructor, they were counted as one section, not as individual sections.

In order to make fair comparisons between 2019 and 2020 in this report, the Fall 2019 math counts were adjusted to reflect these changes in methodology. During this process, we also corrected errors at a few colleges and included schedule changes made after last year's data collection in May-June 2019.



Schelitha Tyler, Foothill College

Before coming back to school in her late 30s, Schelitha Tyler had worked as a paralegal and done other office jobs, but her math skills were rusty. When she took the placement test at Foothill College, she was told she needed to begin in pre-algebra, a remedial class three levels below transferable, college-level math. Just 15% of Foothill students who started at this level would go on to complete math transfer requirements in two years.

Fortunately, the college was a year ahead of schedule in complying with AB 705. In fall 2018, Tyler took and passed college statistics, the class she needed to transfer to a four-year university.

Though she began the course thinking "Math and I don't get along," Tyler credits the collaborative group work, in-class tutoring, and Friday review sessions as key to her success, along with her teacher's attitude.

"He never made us feel stupid. He made us think about a question first, and then it was okay to ask questions," Tyler recalls. "He really did everything he could to help us succeed, including letting us sit in on his other sections of the same class if we wanted more class time."

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