

DATE: 2/14/2018
TO: AB 705 Implementation Team
FROM: Doreen Finkelstein, Research Analyst
RE: Success in Math 10 and Math 48A Under AB 705 for Fall 2018

Introduction:

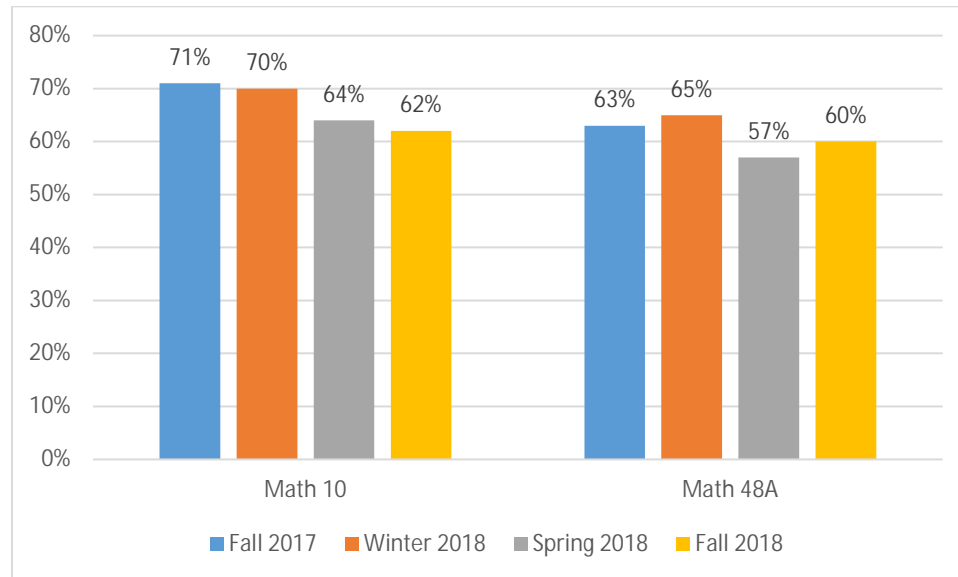
The passage of Assembly Bill (AB) 705 removed barriers for the placement of students into

further investigate the potential underpinnings of the findings reported here, and further clarity may be reached as additional data becomes available over time.

Results Overview:

- Success results were in line with the goals of AB 705. There was a 27% gain in the number of students who successfully passed Math 10 in Fall 2018 (118 more students than Fall 2017), and a 31% gain in the number of students who successfully passed Math 48A in Fall 2018 (51 more students than Fall 2017).
- Achievement gaps showed the existence of disproportionate impact for Latinx students for both Math 10 and Math 48A. For Math 10, there was no appreciable change in achievement gaps for Latinx or African-American students in Fall 2018 compared to Fall 2017. For Math 48A, achievement gaps in Fall 2018 decreased for Latinx students (-13% vs. -9%) compared to Fall 2017.
- The addition of tutors to Math 10 in Fall 2018 was associated with improved course success, but only for students with higher high school GPAs. Upcoming research will further in

Chart 1: Success in Math 10 and Math 48A by Term, Fall 2017-Fall 2018



As more students accessed Math 10 and Math 48A in Fall 2018, the number of students who successfully passed these courses also increased. Table 1 compares the increased enrollment to the increased number of students who passed Math 10 and Math 48A in Fall 2017 vs. Fall 2018. For Math 10, an additional 277 students enrolled in Fall 2018 (45% gain vs. Fall 2017), and an additional 118 students passed (27% gain vs. Fall 2017). For Math 48A, an additional 100 students enrolled (38% gain vs. Fall 2017), and an additional 51 students passed (31% gain vs. Fall 2017).

Table 1: Math 10 and Math 48A Gain Enrollment and Gain in # Passed

	# Enrolled			# Passed		
	Fall 2017	Fall 2018	Gain	Fall 2017	Fall 2018	Gain
Math 10	619	896	277 (45%)	438	556	118 (27%)
Math 48A	264	364	100 (38%)	166	217	51 (31%)

An analysis of success rates by student characteristics (e.g., ethnicity and gender) explores whether achievement gaps exist and, if so, whether they are increasing or decreasing over time. Gaps can also be analyzed using the percentage point gap method² in order to determine whether a group is or is not experiencing disproportionate impact — succeeding at rates that are statistically disproportionately lower than the success rate of the total student population.

Table 2 examines whether there was a decrease in Math 10 achievement gaps in Fall 2018 compared to Fall 2017. Overall, there were no large differences in the achievement gaps between the two years for Math 10; the gap for African-American students went from -6% to -8% (2 percentage point increase) while the gap for Latinx students went from -16% to -14% (2 percentage point decrease).

² California Community Colleges Chancellor's Office (2017). Retrieved from <http://extranet.cccco.edu/Portals/1/TRIS/Research/Analysis/PercentagePointGapMethod2017.pdf>

was associated with improved course success after controlling for other variables such as high school GPA. Results of the regression found tutors were associated with improved course success, but only for students with higher GPAs ($p < .05$; for more information, see Appendix).

Table 4 illustrates the regression finding by showing the success rates of matched students who took Math 10 in non-online courses in Fall 2017-Spring 2018 vs. Fall 2018. Success rates were higher in Fall 2018 for matched students with high school GPAs of 3.0 or above (79% vs. 72%) and high school GPAs between 2.3 and 2.9 (48% vs. 44%), but they were lower for matched students with high school GPAs of less than 2.3 (34% vs. 44%). In other words, students at the higher GPA band were more likely to be successful compared to last year's students, while students with lower GPAs were more likely to be less successful. This finding suggests that even with the addition of tutor support, less than half of the students with lower high school GPAs continue to experience non-success in Math 10.

**Table 4: Math 10 Success Rates by High School GPA and Year
(Matched Students, Non-Online Sections)**

**Table 7: Fall 2018 Math 48A:
Rating of Level of In-Class Support by Coreq (Survey Results)**

Response	No Coreq		Coreq	
	Count	%	Count	%
I wish there had been more in-class support	13	34%	4	8%
The level of in-class support was about right for me	23	61%	44	85%
There was more in-class support than I needed	2	5%	4	8%
Total	38	100%	52	100%

Note: Percents may not sum to 100 due to rounding.

Upcoming research will further analyze these survey responses and continue to investigate the factors associated with improved student success in the corequisite sections.

Methodology

Course enrollments, grades, and class modality (face-to-face, hybrid, online) were obtained from the ODS table Reg

Math 10 matching results. As shown below, matching successfully reduced the prior differences in high school GPA and ethnicity between the groups.

	Before matching		After matching	
	F17-Sp18	F18	F17-Sp18	F18
High school GPA	3.16	2.85	2.86	2.85
Ethnicity	0.53	0.62	0.62	0.62

Math 10 regression results. The logistic regression equation included main effects for Year (F17-