Shasta College

The Effects and Effectiveness of AB 705

Background

In fall 2019, AB 705 went into effect, requiring California Community Colleges (CCCs) to allow all students to enroll in transfer-level English and math courses. Shasta College began preparing for this law in the years prior by developing integrated course supports to assist those students who may have otherwise begun in a pre-transfer-level course. The goal of AB 705 is to get more students to complete transfer-level English and math within the first year, so as to not delay them in achieving their educational goal.

State guidelines for AB 705 center on placement policy and throughput rates. Placement for the purpose of the reporting is defined by enrollment. At Shasta College, counselors provide transfer-level recommendations to students based on Chancellor's Office guidelines, but students self-place by enrolling in a course. Self-placements are treated the same as any other type of placement for the purpose of the state law and associated reporting. To be in compliance, placement in pre-transfer-level courses must result in throughput rates at or above those for transfer-level courses. This report analyzes local practices and outcomes to support maximizing throughput in accordance with state law.

Definitions

Calculations for throughput rates are based on students' first enrollment in a math or English course. Throughput is considered achieved when a student successfully completes a transfer-level course in the subject within one year of their first enrollment in the subject. As an example, a student whose first English course is in fall has until summer to successfully complete the transfer requirement to be included as a success in the throughput rate.

Data sent to the state are disaggregated by student goal and high school GPA, but will be looked at in aggregate in this report. In line with state reporting, only students with educational goals of certificate, degree, transfer, or unknown/undecided will be included in the throughput rates. Also in line with state instructions and local standards, EW grades are included as part of the enrollment figures. High school students and dual enrollment sections are removed from the rates and presented separately.

Executive Summary

The throughput rate for students who begin in transfer-level English and math is higher than those who begin below transfer-level. Nearly all (95%) students are now beginning in transfer-level English, and 64.9% directly enroll in transfer-level math. Integrated supports do not consistently show a positive impact on overall success rates, but instructor shows a correlation with success rates. Special admit students have higher throughput rates, highlighting the value of dual enrollment programs. Students who seek tutoring at The Learning Center (TLC) have higher success rates than their peers. Online sections have less students who visit TLC.

Based on these findings, it is recommended that 1) students be encouraged to enroll at the transfer-level and to re-attempt a course within a year. 2) Students be incentivized to visit TLC.

3) Faculty investigate varying success rates, review course standards, and share best practices. 4) Course offerings be developed around findings of student success.

Additional summary findings and recommendations are provided at the end of this report.

Findings

English

Students who begin in transfer-level courses are more likely to complete a transfer-level course within a year than those who begin below transfer-level, showing that enrollment in transfer-level English does maximize throughput. In 2020-21, the throughput rate for students who began at transfer-level was 59.5%, compared to 18.8% of students who began below transfer-level. This was found to be true for all GPA bands.

Figure 1: Throughput Rates and Enrollment Counts in English by First Course Level

	Acyr				
Crs Level (group)	2016-17	2017-18	2018-19	2019-20	2020-21
TRANSFER-LEVEL	73.6%	73.5%	70.6%	61.0%	59.5%
	1,084	1,018	1,120	1,116	928
DEGREE-APPPLICABLE & OTHER	19.3%	20.2%	17.9%	10.4%	18.8%
	461	410	262	106	48
Grand Total	57.4%	58.2%	60.6%	56.6%	57.5%
	1,545	1,428	1,382	1,222	976

More students are enrolling in transfer-level English as their first course (95% in 2020-21), but overall the number of enrollments in English has declined and the number of students in transfer-level English has not increased. As a result, there is no overall increase in throughput for the students as a whole. When ignoring at what course level a student began, the throughput rate in 2020-21 was the same as in 2016-17, 57%.

In contrast, high school student enrollment in English at the transfer-level has increased and overall throughput is up for this population. The state also encourages the same focus on transfer-level courses for high school students who have completed at least the 10th grade. This appears to be an effective strategy for Shasta College.

Figure 2: English Throughput Rates and Enrollment Counts in Transfer-level English by Student Type

	2016-17	2017-18	2018-19	2019-20	2020-21
COLLEGE STUDENTS	73.9%	73.5%	70.6%	61.0%	59.5%
	1084	1018	1120	1116	928
SPECIAL ADMITS	88.4%	91.1%	89.7%	86.7%	91.8%
	361	350	532	594	549

Mathematics

Two mathematics pathways are defined – B-STEM (for programs requiring calculus) and SLAM (for programs not requiring calculus).

B-STEM. Transfer-level courses for STEM include MATH-2, MATH-2A/B, MATH-3A/B, MATH-4A/B, and MATH-6. For 2020-21, students who began in a transfer-level course had a throughput rate of 47.7% compared to 7.7% of those who began below transfer-level.

Figure 3: Throughput Rates for STEM Math

Mth Level (group)	First Math Yr				
	2016-17	2017-18	2018-19	2019-20	2020-21
TRANSFER-LEVEL	66.7%	58.9%	66.2%	63.3%	47.7%
DEGREE-APPPLICABLE & BELOW	8.5%	9.4%	8.4%	6.3%	7.7%

SLAM. For the SLAM pathway, beginning in a transfer-level course also maximizes throughput. In 2020-21, those who began in a transfer-level course had a throughput rate six times that of those students who began below-transfer (59.6% vs. 10.7%).

Figure 4: Throughput Rates for SLAM Math

Mth Level (group)	First Math Yr				
	2016-17	2017-18	2018-19	2019-20	2020-21
TRANSFER-LEVEL	68.3%	73.6%	64.0%	63.8%	59.6%
DEGREE-APPPLICABLE & BELOW	11.2%	12.4%	13.9%	15.2%	10.7%

Special admit students had higher throughput rates for math, as they did for English. For those that began at the transfer-level, the throughput rate for SLAM math was 85.6% in 2020-21, and 88.9% for those in STEM math. Students who can complete these Shasta College courses while in high school would be advised to do so.

Special populations

One of the practices that should be followed for AB 705 is "place and ensure enrollment of all population groups, regardless of their background of special population status, [using] the Chancellor's Office high school GPA default placement rules." While the placement in transfer-level courses has increased for all populations, some equity groups are enrolling below transfer-level math courses at significantly higher rates than their peers. These include PACE, low-income, adult, and former foster students, approximately a 20% difference for all groups. Some of these equity groups overlap each other. In 2020-21, 30% of low-income students were adult learners. A disproportionate impact calculation across age and income combined indicates the adult low-income students are disproportionately impacted. Of the 234 students in this category, 102 enrolled at transfer-level; an additional 47 would need to enroll at transfer-level to reach parity with other groups.

When looking across gender and ethnicity, there are no differences in placement rates. Examining placement rates by equity groups for English courses shows that there are no significant differences for any groups.

Success Rates and Sequences

Throughput rates do not incorporate all course enrollments, and so success rates in these courses are also presented for a more traditional look into the effectiveness of the supports and pathways. Dual enrollment sections are excluded from success rate calculations unless otherwise presented, and all student goals are included. All students, including special admits and all goals, are included in the data on course sequences.

English

Success rates for ENGL-1A have ranged from 58% to 67% over the last five years, excluding dual enrollment sections. Dual enrollment sections have success rates in the 90's. There has been an increase in students taking transfer-level English classes, from 79% of enrollments to 95% in 2020-21 (excluding co-requisite of ENGL-101A). The addition of supports were implemented with the purpose of increasing success for students who may have otherwise taken a prerequisite. Success rates declined in the last two years; however, when excluding the grade of EW, first implemented as a result of the pandemic, success rates are more stable over the five-year period.

Figure 5: Success Rates in ENGL-1A With and Without EW Grades

|	*2016-17*	*2017-18*	*2018-19*	*2019-20*	*2020-21*
All Grades	66.7%	64.7%	64.1%	58.0%	58.6%
Excluding EWs	66.7%	64.7%	64.1%	64.4%	62.9%

Entry-level transferrable English (ENGL-1A) has the most support offerings and is the first transfer-level English course of 84% of students. The effectiveness of these supports is difficult to determine. Overall, success rates in the sections with support are less than the sections without support. When disaggregating by GPA, the pattern in the same across support types.

Figure 6: Success Rates in ENGL-1A & ENGL-1A by Imbedded Support, Dual Enrollment Separated

Dual Enrl Sect	Course Na..	Support type	2016-17	2017-18	2018-19	2019-20	2020-21
DualEnrl	ENGL-1A	No support	90.1%	96.1%	97.8%	93.4%	92.8%
	ENGL-1B	No support	100.0%		100.0%	100.0%	100.0%
Not Dual Enrl	ENGL-1A	Embedded tutoring		47.8%	49.3%	48.6%	50.4%
		Enhanced/Corequisite		53.7%	52.0%	43.6%	47.6%
		No support	65.6%	62.7%	65.7%	58.0%	57.8%
	ENGL-1B	Embedded tutoring		51.9%	68.2%	48.8%	48.1%
		Enhanced/Corequisite		56.5%			
		No support	77.4%	71.2%	74.7%	71.9%	70.3%

There is also no difference in English success rates by modality, until engagement for tutoring at The Learning Center (TLC) is taken into account. Students who seek help for their ENGL-1A or ENGL-1B course at TLC have consistently higher success rates than those who do not. Face-to-face sections saw, on average, a 10.5% increase in success rates, and over a 20% increase in success rates for online sections. It should be noted however, that participation rates in TLC are significantly lower for online sections, 6% vs 28% for face-to-face, on average.

Figure 7: Success Rates in ENGL-1A & 1B by Modality and TLC Visit
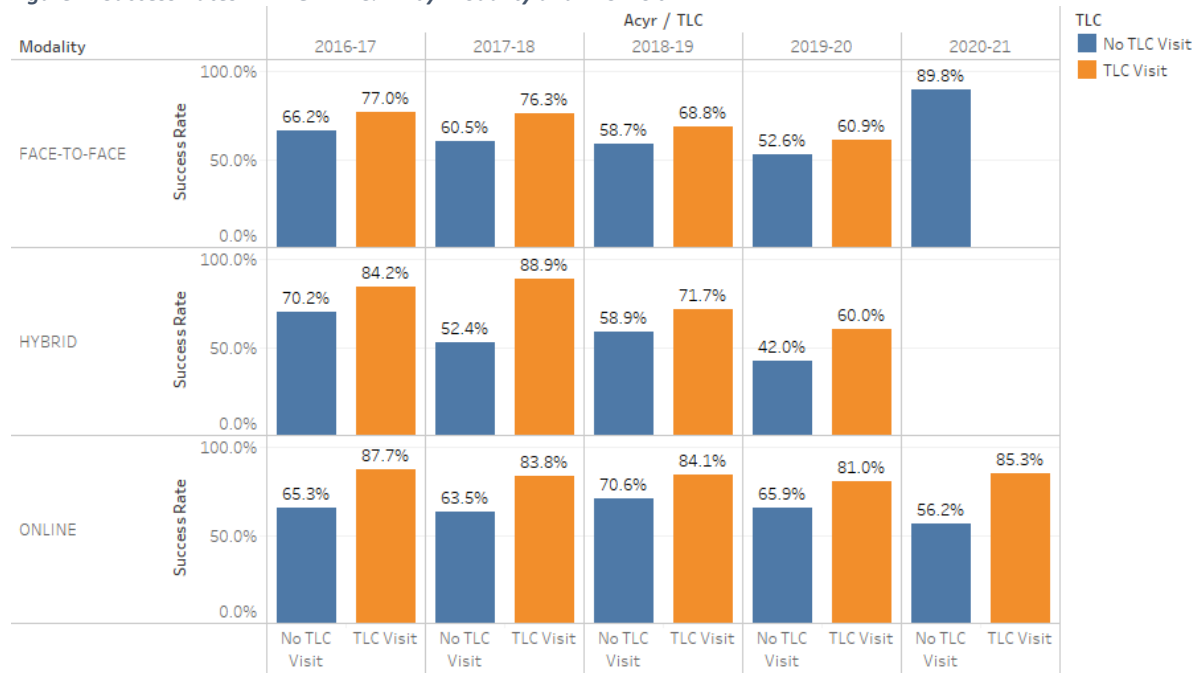
Another pattern that emerges is instructor. The correlation of instructor to success is statistically significant, but there is no significant correction between success and support. Faculty that wish to view success rates for their sections can contact the Research office at ResearchRequest@ShastaCollege.edu. Additionally, it may benefit these course faculty to discuss course standards and share best practices in pedagogy with each other to ensure alignment across sections and in the attempt to reduce the range of success rates.

Mathematics

Both math pathways have implemented strategies to improve student success. In 2019-20, an integrated support option was added for MATH-14, which is MATH-14S. Additionally, in 2019-20, BUAD-14 was added as an alternative to MATH-14. Overall, enrollments in transfer-level courses have increased over the years and enrollments in below-degree level courses have dropped considerably. In the SLAM pathway, 78.1% of students enrolled at the transfer-level; 35.8% enrolled at the transfer-level for STEM. This is an increase of approximately 30% over the last five years.

Figure 8: Percent of Students Who Began in Transfer-level Math

% began at Transfer-level	2016-17	2017-18	2018-19	2019-20	2020-21
STEM Pathway	17.3%	18.1%	21.8%	34.0%	35.8%
SLAM Pathway	48.0%	52.2%	57.9%	75.0%	78.1%
All Maths	33.4%	37.5%	42.5%	61.4%	65.6%

Success rates in MATH-14 averaged 59% prior to 2020-21, when the success rate hit a low of 52%. MATH-14S had higher success rates than MATH-14 in 2019-20, but lower in 2020-21. Excluding EWs brings these rates up for 2020-21, but they are still lower than in prior years. Enrollment in MATH-14S was less than 10% of the enrollments in MATH-14 and some of the fluctuation may be due to low counts. Enrollment in BUAD-14, which was added in 2019-20, more than doubled enrollment and the

success rate increased to 82.6% for 2020-21. Success rates for students in MATH-2A are higher in the last two years than in prior years.

Figure 9: Success Rates in Entry-level Math by Course Name

Slam Or Stem?	Course Name	Acyr				
		2016-17	2017-18	2018-19	2019-20	2020-21
SLAM	BUAD-14				69.2%	82.6%
	MATH-14	59.2%	62.6%	58.2%	57.8%	52.1%
	MATH-14S				63.3%	47.2%
STEM	MATH-2	55.1%	45.3%	50.0%	49.2%	37.8%
	MATH-2A	45.5%	45.6%	46.2%	57.3%	54.3%

When disaggregating by integrated support type, success rates vary by year in these 5 courses. In 2019-20, embedded tutoring sections had high success rates; there were two sections. In 2020-21 embedded tutoring was expanded to twelve sections, and while some did well (4 sections at 60-67%), six sections had rates in the 30's. The support type described as enhanced in Figure 10 represents MATH-14S.

Figure 10: Success Rates in Entry-transfer-level-math by Support Type and Dual Enrollment (same courses from Figure 13)

Dual Enrl S..	Support type	Acyr				
		2016-17	2017-18	2018-19	2019-20	2020-21
DualEnrl	No support	94.9%	87.0%	90.8%	90.0%	83.1%
	Supplemental Instruction					92.9%
Not Dual Enrl	No support	59.0%	62.1%	59.8%	59.8%	64.6%
	Embedded tutoring		55.3%	58.8%	81.1%	46.5%
	Enhanced/Corequisite				60.0%	46.4%
	Supplemental Instruction	38.2%		48.7%	46.9%	50.1%

Sections with supplemental instruction have had lower success rates overall. However, it should be noted that not all students who are enrolled in supplemental instruction courses attend the additional sessions by SI leaders. In MATH-2, 33% of students attended at least one SI session. For MATH-14, 66% attended in 2019-20, but only 15% attended in 2020-21. For most courses and terms, the success rates of students who attended an SI sessions were higher. This program was expanded in 2020-21, to 22 sections. Although for most instructors success rates increase when students attend SI sessions, section instructor is the largest contributing factor to student success.

Figure 11: Success Rates in Supplemental Instruction Sections by Attendance at SI Session

Course Name	2019-20		2020-21	
	Did not attend SI session	Attended SI Session	Did not attend SI session	Attended SI Session
MATH-2	47.6%	38.9%	28.2%	56.1%
MATH-2A	59.1%	45.5%		
MATH-14	25.0%	52.2%	53.5%	64.9%

As with English, students who visit the TLC for tutoring support are positively impacted with success rates that are, on average, 9% higher. This impact is seen most noticably in sections with

integrated support. Students who visit TLC from transfer-level math classes that have integrated supports, had an average increase in success rates of 15.5%. In 2020-21 this combination was the most successful. For reference, success rates for the students who did not visit TLC are also presented in the table below. TLC partication rates for online sections are lower than face-to-face classes, 31% vs 5%.

Figure 12: Success Rates in Entry-transfer-level math by Support and TLC visit

Success rates in Transfer-level Math	2016-17	2017-18	2018-19	2019-20	2020-21
Integrated support, TLC Visit	*	65.0%	61.5%	62.7%	80.0%
No integrated supports, TLC Visit	67.7%	68.1%	67.7%	64.4%	66.7%
Integrated support, no TLC	46.2%	50.6%	53.2%	57.5%	46.7%
No integrated support, no TLC	56.5%	60.4%	58.0%	58.9%	64.6%

*Supressed, less than 10 students

Math Camp is a boot camp type of tutoring that is offered shortly before the start of the academic year to help prepare students for higher-level mathematics courses. The program has served 53 students who enrolled in MATH-2, MATH-2A, MATH-2B, MATH-14 or MATH-14S in the subsequent academic year. Participation in math camp has a positive impact on student success. With few exceptions, success rates are higher in these courses. (Two of two attendees who enrolled in MATH-2 did not succeed.)

	2017-18	2018-19	2019-20	2020-21
Math Camp Students	10	3	15	25
Success Rate	60%	100%	73.3%	64.0%
Non-MC Success Rate	61.2%	56.9%	57.9%	55.8%

Withdraw Rates

Students in MATH-14S have higher withdraw rates than those in other transfer-level math classes. In 2020-21, 38.5% of students dropped the high credit course, compared to 28.3% of students in MATH-14. When looking across educational goals, a pattern emerges. Short-term career and adult education students, and those with undecided goals, have withdraw rates of 50%. However degree-seeking students had a withdraw rate of 25% and transfer students of 34%. This pattern in not observed in MATH-14. It should be noted that students with undecided goals are included along with transfer students for state reporting.

Students who take ENGL-1A along with the co-requisite of ENGL-101A have higher withdraw rates than those in courses with no support, 35.5% vs 21.3%. ENGL-1A sections with embedded tutors fall in the middle, at 31.6%. Students in the integrated support sections are withdrawing with FW's at higher rates: 6.5% for co-requisite sections and 4.5% for embedded tutor sections, vs 1% for sections with no support. In sections with support, students with goals of unknown, adult education, short-term career, and meeting 4-year degree requirements had the highest withdraw rates. Over half, 53.8% of students meeting 4-year degree requirements withdrew from the sections with co-requistes.

While it appears that the higher unit courses may be losing students due to the increased load, regardless of section support type, students who dropped ENGL-1A dropped 76% of their courses in Fall 2020 and 69% in Spring 2021. The students in co-requiste sections dropped more classes than their peers in fall and less in spring, so no pattern has emerged. The 2019-2020 academic year was not examined due to high number of EW grades in spring 2020. Math looks similar; students who dropped

MATH-14 or MATH-14S dropped nearly two of three (63%) of their courses, while students who persisted in math generally persisted in all their courses.

Course Sequences

On the STEM pathway, MATH-102 is the degree-level course students would take to prepare them for MATH-2/2A. Of the students who took this course as their first math in 2019-20, 8% enrolled in the MATH-2 or MATH-2A within a year. Of those who did not succeed in MATH-2A as their first math in 2019-20, 18% repeated the course within a year. Of all those who enrolled in MATH-2A as their first course, 12% then enrolled in MATH-14 within a year. There are only a handful who repeated MATH-2 over the last three years. The re-enrollment rate in MATH-2A over the persistence rate from MATH-102 to MATH-2/A supports direct enrollment at the transfer-level. The importance of enrolling in the correct transfer-level level is also evidenced in these figures.

The following chart presents success rates and throughput rates based on students' first enrollment in SLAM math being either MATH-114 or MATH-14, and the transfer course for completion being MATH-14. (Note: MATH-14S was first offered in 2019, therefore there is not enough data to be used here for separate analysis.)

- Students who take MATH-14 within a year of passing MATH-114 had higher success rates than those who attempted MATH-14 a second time within a year.
- Additionally, for those students taking two courses within a year, the throughput rate of those taking MATH-114 was higher than those who repeated MATH-14.
- On average, 22% of students who do not pass MATH-14 try again within a year. In contrast, 59% of students who pass MATH-114 enroll in MATH-14 within a year.

Despite the appearance of MATH-114 to MATH-14 being the more successful pathway for those who take two math courses, the overall throughput rate still shows MATH-14 maximizing throughput and these data do not justify a change in recommendations based on AB 705 requirements.

Figure 13: Success and Throughput Rates in Math by Sequence

Success Rates in MATH-14	2015-16	2016-17	2017-18	2018-19	2019-20
MATH-14 first Math, Attempt 1	60%	69%	66%	63%	64%
MATH-14 Attempt 2 within First ACYR	48%	41%	49%	49%	54%
MATH-114 first Math, MATH-14 within ACYR	55%	57%	67%	60%	67%
Throughput Rates in MATH-14	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**
MATH-14 first Math	63.9%	70.8%	71.7%	67.4%	67.1%
MATH-14, did not pass first attempt	9.7%	6.9%	15.7%	12.4%	8.6%
MATH-114 first Math	23.4%	23.3%	27.8%	21.7%	25.2%

When looking at the sequences of courses for English, there are very few students who begin below ENGL-1A and this number has been decreasing each year as the College shifts their offerings. Those that do, typically enroll in ENGL-129 or ENGL-196. Of the students who enrolled in ENGL-129, less than 20% enrolled in ENGL-1A within the year, and for ENGL-196, less than 30% enrolled in ENGL-1A within the year. Success rates in ENGL-1A for these students averaged 60%, 5% higher than the overall success rate for the course; this is not a significant difference. Of the students who do not pass ENGL-1A on their first attempt, on average, 7.7% enroll again within the year.

Summary of Findings

- Placement in pre-transfer courses is not maximizing throughput rates for English or math, regardless of HS GPA.
- In English, decreases in success rates without increases in enrollments is resulting in flat throughput trends when the level of the students' first course is not considered.
- Nearly two-thirds, 64.9%, of students began in a transfer-level math course in 2020-21; 95% students began in transfer-level English.
- Placement in transfer-level math courses is approximately 20% lower than their peers for PACE students, low-income, and adult students. There is no discrepancy for English.
- Integrated supports do not show a positive impact for English regardless of student GPA. There was a positive impact for some sections in math in 2019-20, but supports were significantly increased in 2020-21 for math, and there is a stronger correlation with instructor than support. English also shows a correlation with instructor and success, but not support and success.
- Students in Supplemental Instruction sections who attended the optional SI sessions in 2020-21 had higher success rates than those in SI sections who did not attend.
- Students who seek assistance at TLC succeed at significantly higher rates. Online students are significantly less likely to seek support than face-to-face students.
- Students who attend Math camp in the summer prior to enrolling in a transfer-level math course have higher success rates than those who did not attend.
- BUAD-14 is a promising alternative for MATH-14, with success rates averaging 82.6% in 2020-21.
- Students who do not pass MATH-14 on their first attempt are less likely to pass MATH-14 within a year than those students who began in MATH-114 and then enroll in MATH-14. However, these findings do not justify any placement changes given the need for alignment with AB705.
- Dual enrollment courses have higher success rates, and are growing in transfer-level enrollment for both English and math.
- Students withdraw from classes with enhanced/co-requisite support at higher rates than other sections, and the FW grade is more common for these students. It is unknown if the additional unit load is causing withdraw as students who drop these courses also withdrew from most of their courses in 2020-21, regardless of support type.

Recommendations

- Formalize faculty training related to the effective use of embedded supports.
- English and math faculty should investigate varying success rates, review course standards, and share best practices to ensure alignment across sections.

- Additional significant effort should be made to engage students with TLC, especially online students.
- Consider expanding math camp to include winter intersession and increase outreach through targeted marketing.
- Students who do not complete a transfer-level course upon first enrollment should be encouraged to re-enroll in the following semester.
- Counselors should work to ensure they encourage enrollment in transfer-level courses for disproportionately impacted groups in math.
- Explore offering additional sections of BUAD-14 or other contextualized quantitative reasoning courses to support the SLAM pathway.
- Consider schedule modifications for math to encourage transfer-level enrollment.