

## Classroom Tutoring Student Demographics and Outcomes Fall 2015-Fall 2017

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### Executive Summary

As one component of the Proyecto Éxito grant evaluation, the present study was conducted as a follow-up to previous reports which examined the implementation of the Classroom Tutoring program at San Diego Mesa College. As in previous studies, the current study examines student access to Classroom Tutoring (CT) by student demographics and compares outcomes of students who attended and did not attend CT sessions.

1. Across sections: Comparing the demographics and outcomes of CT sections and Non-CT sections of the same course.
2. Within sections: Comparing the demographics and outcomes of students in the CT sections by whether or not they accessed the CT outside of class.

To this end, student demographics, course enrollment, and grade data were obtained from the SDCCD information system for students enrolled in CT-designated course sections Fall 2015 –Fall2017 semesters. Additionally, Classroom Tutoring attendance data were provided by the CT Coordinator and then linked to student enrollment information. The project centered on the following research questions:

- Do students who participate in Classroom Tutoring differ, demographically and academically, from students who do not?
- Do students who participate in Classroom Tutoring perform better in their CT-assigned courses than students who do not participate in CT?

A summary of the study's findings is provided on the following pages. SD Mesa Enrollment Trends Dashboard was used to determine campus representation across gender, age, and ethnicity. Data tables illustrating detailed findings are provided in Appendix A.

### Across Sections

#### Methodology

- All CT sections compared with all non-CT sections of the same course
- CRN and Term list provided by CT coordinator merged with enrollment records.
- Comparison courses included sections of the same course that were taught during the same term.
- Excluded Sections: ACP, Legacy/CCAP, SDSU, UCSD, Honors Contracts, cancelled classes and Intersession.
- Excludes enrollments: Students who dropped before census or those who do not have a valid grade on record

## Access

- Overall, there was no significant difference between the age, ethnicity, gender, or first generation status of students who enrolled in CT sections versus those enrolled in non-CT sections of the same course.
- Ethnicity- The representation of each ethnic group in the courses examined (CT and non-CT) is slightly different than their representation on the campus as a whole. The courses examined have a higher percentage of Latinx students (41%) than what is seen on campus during the same terms (35%) and a slightly lower representation of white students (30% vs 33%) and Asian/Pacific Islander students (9% vs. 12%). Overall however, there did not appear to be a significant difference in the representation of each ethnic group in the CT vs. Non-CT sections. Some individual terms demonstrated slight disparities in access (all within 4%), however when the terms are collapsed no ethnic groups representation in CT sections was more than 1% different than their representation within the non-CT sections.
- Gender- The gender the representation in the courses examined (CT and non-CT) is slightly different than the gender representation of the campus as a whole. The courses examined have a higher percentage of males (49%) than what is seen on campus during the same terms (47%). Summer 2016 saw significantly less representation by females in CT sections (50%) as compared to their representation in non-CT sections (56%). This may be due to the higher representation of females in the Summer term in general. Fall 2016 saw the opposite trend, with females representing a significantly larger portion of the CT enrollments (58%) than the non-CT enrollments (51%). When combining all terms together the representation of each gender in CT Sections as compared to non-CT sections is within 1%.
- Age- The representation of students age 18-24 is significantly higher in the courses examined (72%) as compared to the general campus (58%). Within the courses examined, though the representation of each age group in the CT sections is comparable to that in the non-CT sections. Within individual terms, the average age of students in the CT sections is comparable to that of non-CT sections with the exception of Summer 2016 where students in the CT sections had an average age of 25 compared to 23.1 for non-CT sections.

## Outcomes

- Overall, there seems to be a moderate improvement in success rate in CT sections as compared to non-CT sections. In aggregate, the success rate of all CT Sections during the reporting period was 66.3% compared to 64.2% for non-CT sections. Retention rate and GPA also were moderately higher for CT sections as compared to non-CT sections.
- Term: When examining each term independently, Spring 2016 was the only term for which the CT section success rate (56.3%) was lower than the non-CT sections success rate (63.2%). The terms that had the largest gains in success

rate for CT sections was Summer 2017 (+6.2%), Fall 2016 (+4.1%), and Fall 2017 (+3.9%).

- Subject: Within each subject area there appears to be subjects for which the CT intervention has a more positive impact and subjects for which the CT sections are not performing as well as the non-CT sections. There were 5 subjects in which the success rates in the CT sections were below that of the non-CT sections and 6 subjects where the CT sections had higher success rates. The subjects with the greatest differences in success rates are Astronomy (-9.4%), Geology (+7.9%), French (-7.5%), and Biology (-6.6%). However, each of these subject areas only had between 1-7 CT sections. The subjects with the largest number of CT sections and therefore with the largest sample of students were Math (38 CT Sections) and English (14 CT Sections). For Math students in the CT sections had a +5.8% increase in success rate and in English there was a +2.7% increase for CT sections.
- Course: When analyzing specific courses, the focus was on those courses with more than 3 CT sections. This list included 11 courses across 6 subjects. MATH 092 had the most CT sections with 13 across all terms, followed by MATH 96 with 8 CT sections. Both of these courses saw improvements in success rate for CT sections over non CT Sections (+2.6% and + 2.9% respectively). The courses with the greatest gains for CT sections was MATH119 (+19%), CHEM152 (+7.4%), and MATH104 (+7.2%). The courses with the largest gaps in success rates for CT sections was ASTR101 (-9.4%) and BIOL107 (-6.6%).
- Ethnicity: The groups with the largest representation in the CT sections and therefore the largest samples were Latinx students (n= 1,316) and White students (n=996). Three groups had fewer than 100 enrollments in the CT sections, American Indian (n=11), Pacific Islander (n= 18), and Unreported (n= 54), and therefore results should be interpreted with caution. Of the groups with robust sample sizes, White students saw the largest gains (+3.5%), followed by Asian students (+ 2.4%), Latinx students (+2.0%), and African American (+1.5%). Filipino students saw a decrease in success rate in CT sections (-2.8%) as well as students who identified as Other (-1.6%). Within both CT sections and non-CT sections, however, there appears to be a significant equity gap. For instance, although Latinx students saw a +2.0% increase in success rate in CT sections, their success rate was 12% lower than their white peers in CT sections and nearly 9% lower than that of White students in non-CT sections. Moreover, the equity gaps (the difference between the group's success rate and the overall success rate) remain almost identical for Latinx students (-5%) and African American students (-10%) regardless of the CT vs. non-CT status of the section.
- Gender: Both Males and Females saw moderate improvements in success rates in CT sections as compared to non-CT sections (+2.4% and +1.5% respectively). Similar to ethnicity, the equity gaps appear to persist in the CT sections, with males succeeding at about 2% below the overall rate in both CT and non-CT sections.

## Within Sections

### Methodology

- Only includes CT sections and compares those who attended CT sessions outside of class with those who did not.
- Merged attendance reports received from CT coordinator with enrollment records.
- Attendance Reports included CT name, Student Name, Csid, and session dates.
- CT coordinator provided crosswalk between Crn and CT name.
- Data were restructured so that Crns were mapped to the session record and unduplicated at the Student/Crn level so that each student's record indicated a total number of sessions attended for the course.
- Excludes enrollments: Students who dropped before census or those who do not have a valid grade on record.
- Note: There were 116 students in the CT attendance reports that were not enrolled in sections with CT's assigned to them. These students were not included in the "Within Section" analysis. They were however, part of the "Across section" and "Within Faculty" analyses and may influence the outcomes for sections designated as "non-CT" as they were enrolled in non-CT sections.

### Access

- Overall: Within CT sections students had the option of accessing the CT outside of class hours or not. An analysis was done to determine if there were significant differences in the demographic make-up of the students who opted to work with the CT outside of class as compared to those who didn't. Additionally, of those who used the CT there were marked differences across demographic groups with regard to how many times they accessed the CT. Overall, 31% of students in the CT sections opted to access the CT outside of class (n = 1,025), these students had an average of 6.3 visits with the CT.
- Ethnicity: There was no significant difference in the representation across ethnicity with regard to those who accessed and those who did not access the CT outside of class. Each ethnic group's representation in the CT use group was within 2% of their representation in the non-CT group. Within the group that access the CT, the average number of visits across ethnicity was between 5-7 for 5 ethnic groups. American Indian students accessed the CT an average of 18.5 times and students in the 'Other' ethnic group accessed the CT an average of 7.1 times while Asian students accessed the CT 4.7 times and Pacific Islander students had an average of 2.4 visits.
- Gender: Females appeared to be much more likely to access the CT than males. Females represented 49% of the students who did not access the CT and 56% of the students who did access the CT. The average number of visits by those who accessed the CT was not significantly different across gender.
- Age: Students age 18-24 represented a far lower percentage of students accessing the CT (65%) than those who did not (78%) indicating these students

were much less likely to access the CT than their peers. Every other age group saw an increase in representation with the CT use group. Additionally, students age 18-24 who did use the CT had the lowest average number of visits at 5.6 with students age 40-49 having the greatest number of average visits at 11.5.

- Subject: The percent of students across subject areas who accessed the CT ranged from 17% of enrollees (GEOL) to 59% (FREN). Seven subjects had between 20-30% of students access the CT and four had more than 30%.

## Outcomes

- Overall: Students who access the CT outside of the classroom had higher success rates (77%) than their peers in the same sections who did not (62%). Students with 3-5 visits and students with more than 10 visits saw the highest success rates at 78% and 88% respectively. Using the CT appeared to be related to higher success rates in every term with the largest gains seen in Spring 2016 (+23%) and the lowest in Fall 2016 (+5%). Spring 2016 also saw the lowest success rates amongst the students who did not use the CT (48%). The term with the highest success rate for both CT users and non-CT users was Summer 2017 (90% and 78% respectively)
- Subject: Subjects with the largest gains in success rate for CT users compared to non-CT users were ANTH (+42%), FREN (+29%), GEOG (+29%) and GEOL (+28%). Only ESOL saw a decrease in success rate for students who accessed the CT as compared to those who didn't (-13%) although there was only section of ESOL and a very small sample of students (n = 25). Interestingly, there were no significant correlations across subject with regard to the avg. number of CT visits or the percent of students who used the CT and the Success Rate of the courses within that subject.
- Course/Section: At the section level, however, there is a moderate significant positive correlation between the number of students who accessed the CT and the overall success rate of that section ( $r = .262, p < .05$ ) as well as with the GPA for that section ( $r = .352, p < .01$ ). The total number of visits is not significantly related to success rate ( $r = .195, p > .05$ ) but is related to GPA ( $r = .238, p > .05$ ). Math and English courses were analyzed in aggregate, at the subject level and course level as well as at the section level. Math and English were the only subject with more than 2 distinct courses participating in the CT program during the reporting period. English 43, 49 and Math 46 only included 1 section each, therefore additional analysis for these courses was not included at the course level. English 101 and English 47A showed similar gains in success rate for CT users compared to non-CT users indicating the CT program seems to be effective for both courses. The changes in success rate for CT users in varying Math courses ranged from -3% in Math 104 to +20% in Math 96.
- Ethnicity: Every ethnic group with the exception of those with unreported ethnicity saw an increase in success rate for students who accessed the CT as compared to those who didn't. Filipino and Pacific Islander Students saw the largest gains

(+26%), followed by White students (+20%) and Latinx students (+16%). These gains however do not reflect the equity gaps that persist regardless of CT use. For instance the overall Equity Gap for Latinx students in the target courses is -5%, indicating Latinx students have a success rate of 5% lower than the overall success rate. When isolating CT users the equity gap remains at about -5% for Latinx students and grows from -10% to -15% for African American Students. African American students had above average participation rate, with 37% of students accessing the CT outside of class with an average of 6.1 visits with the CT, yet the success rate of African American students accessing CTs was 4% lower than the overall success rate for all students (regardless of CT use) and about 5% lower than that of their White peers who did not access the CT at all. For Latinx Students, while the Gap persisted it was much smaller and the gains made by the CT users group was enough to improve their success rate so that it was above the overall success rate for the courses.

- Gender: Both Females and Males saw significant gains for CT users compared to non-CT users (+15% and +16% respectively). The equity gap between the genders was 2% or less for all groups. A greater portion of female students (34%) accessed the CT than male students (28%) however males who accessed the CT had slightly more visits on average (6.4) compared to females (6.2).

### Conclusion and Recommendations

Overall, access to both CT sections and the CTs themselves seem to reflect the general representational access to the courses included in the analysis. Additionally, the CT program seems to have an overall positive impact on success rate. This impact does not seem to be consistent, however, when analyzing by term, subject area, or course. The impact of the CT program seems to vary by subject area, course, and section. This may reflect inconsistencies in the implementation of the program in each classroom or in the characteristics of students who choose to access the CT. For instance, the messaging of the Faculty may be one that encourages students who are “struggling” to use the CT thereby improving the success rate for a group of students who may not have otherwise passed. Or there may be messaging around CT use that may draw high performing students, thereby increasing the success rate of an already high performing group and widening the gap between users and non-users.

When looking at the patterns across the 2 analyses (Within sections and Across sections) there does not seem to be a clear and consistent trend with regard to the impact of the CT program across all sections. For instance, in the Across section analysis, Spring 2016 was the only term for which the CT sections had a lower aggregate success rate than the comparable non-CT sections. However, Spring 2016 also showed the greatest gains for the CT users in the Within section analysis, in large part due to the low success rate of non-CT users in the same sections.

While many ethnic groups experienced positive gains when enrolled in CT sections and/or accessing the CT, equity gaps remained consistent. This should remain of central focus to the program as it is explicitly intended to support our historically underserved student groups.

Tables

**Appendix A:**  
**Data Summary Tables for Classroom Tutoring Student Demographics and Course Outcomes**

Representation in CT and non-CT sections by Demographic category

	CT	Non-CT
<b>Ethnicity</b>		
<b>African American</b>	8%	7%
<b>American Indian</b>	0%	0%
<b>Asian</b>	9%	9%
<b>Filipino</b>	4%	4%
<b>Latino</b>	40%	41%
<b>Other</b>	5%	6%
<b>Pacific Islander</b>	1%	1%
<b>Unreported</b>	2%	2%
<b>White</b>	30%	30%
<b>Gender</b>		
<b>F</b>	51%	50%
<b>M</b>	49%	50%
<b>Age</b>		
<b>Under 18</b>	1%	1%
<b>18 - 24</b>	74%	72%
<b>25 - 29</b>	15%	16%
<b>30 - 39</b>	7%	8%
<b>40 - 49</b>	2%	2%
<b>50 and &gt;</b>	1%	1%

Course Outcomes by Term

Term	Course Status	Sections	Enroll	Avg. Class Size	Success Rate	Retention Rate	GPA
<b>FA 2015</b>	CT	9	251	27.9	72.1%	88.0%	2.57
	Non-CT	126	3,185	25.3	70.0%	86.8%	2.53
<b>SP2016</b>	CT	18	575	31.9	56.3%	81.4%	2.21
	Non-CT	138	3,683	26.7	63.2%	84.1%	2.35
<b>SU</b>	CT	3	133	44.3	72.9%	85.7%	2.71

  
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<b>2016</b>							
	Non-CT	2	78	39.0	70.5%	89.7%	2.46
<b>FA 2016</b>	CT	15	609	40.6	65.2%	87.0%	2.3
	Non-CT	112	4,498	40.2	61.1%	84.7%	2.29
<b>SP 2017</b>	CT	22	890	40.5	64.9%	87.2%	2.44
	Non-CT	134	4,980	37.2	61.4%	83.2%	2.3
<b>SU 2017</b>	CT	5	191	38.2	82.7%	88.5%	3.05
	Non-CT	17	562	33.1	76.5%	89.1%	2.74
<b>FA 2017</b>	CT	15	631	42.1	69.4%	88.7%	2.48
	Non-CT	137	5,007	36.5	65.5%	86.3%	2.45
<b>Overall</b>	CT	87	3,280	37.7	66.3%	86.5%	2.44
	Non-CT	666	21,993	33.0	64.2%	85.1%	2.38