Tutoring Services at San Francisco State University: Testing the Impact of CARP and LAC on Student Grades

Academic Institutional Research Office

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The following analysis compares course grades between students who received tutoring for the course and those who did not. Such a comparison is troublesome for several reasons. We might expect that those who seek out tutoring do so either because they fear they will find a course difficult or they are already experiencing difficulty in the course. As such, without tutoring, we also might expect that their grades will, on average, be lower than those who do not seek tutoring. A student whose grade improves from a D to a C because of tutoring should be viewed as a success. If this grade, however, is compared to the grades of those who did not receive tutoring, it will probably be lower, thus suggesting a non-successful outcome. Additionally, perhaps a typical A student may fear s/he will receive a B in the course and therefore seeks tutoring. This student would bias the mean grade comparison in a positive way were s/he to receive an A.

For the purposes of this study, we first check the comparability of the tutored and non-tutored students on the basis of SAT scores. Where they are not comparable, they are made comparable. This at least partially diminishes the problems identified earlier. (The details of comparison are explained below.) We then compare the mean grade points by testing for statistically significant differences between those students who got tutoring for the course and those who did not.

Of the 1,695 CARP and LAC tutoring records provided to the Academic Institutional Research Office, there were 1,223 unique students. Half of the students (50%) had only LAC tutoring records for Fall 2013, 40% had only CARP records, and 10% had tutoring records for both LAC and CARP.

Without distinguishing the CARP- and LAC-tutored students from each other, comparisons were made of the mean grade points earned by tutored and non-tutored students in the Fall 2013 courses having at least 25 tutored students. The largest numbers of tutored students were found in math and English courses. Although “Comp Lab” had 68 tutored students, it was not included in the comparisons.

Only the grading records with letter grades of A through F and WU were used because only for these grades are grade points (including zero) earned.

In order to ensure the comparability of the tutored and non-tutored groups of students in each course, their mean math and/or verbal SAT scores were made comparable when there were notable differences (statistically significant or not). This was accomplished by eliminating the non-tutored student records having the highest SAT scores until the mean SAT scores of the tutored and non-tutored groups were not statistically significantly different. For the math and chemistry courses, the math SAT means were aligned. For English courses, the verbal SAT means were made comparable. Because the courses potentially include both quantitative and verbal components, the mean math and verbal SAT scores of the tutored and non-tutored students in the Hospitality and Tourism Management and Anthropology courses were compared, but they were not statistically significantly different, so no non-tutored cases were eliminated.

ENG 104 – First Year Composition Stretch I: There was no statistically significant difference in mean grade points by tutoring participation.

	Mean grade points	N
Not tutored	2.94	505
Tutored	2.85	105

MATH 110 - Business Calculus [GE]: There were statistically significantly lower mean grade points among tutored students.

	Mean grade points	N
Not tutored	2.87	344
Tutored	2.54	33

MATH 199 – Pre-Calculus: There was no statistically significant difference in mean grade points by tutoring participation.

	Mean grade points	N
Not tutored	2.33	419
Tutored	2.02	47

ENG 114 – First Year Composition: There was no statistically significant difference in mean grade points by tutoring participation.

	Mean grade points	N
Not tutored	3.14	1461
Tutored	3.05	43

MATH 124 – Elementary Statistics [GE]: There was no statistically significant difference in mean grade points by tutoring participation.

	Mean grade points	N
Not tutored	2.62	1022
Tutored	2.63	45

ENG 214 – Second Year Written Composition - English [GE]: There was no statistically significant difference in mean grade points by tutoring participation.

	Mean grade points	N
Not tutored	3.06	789
Tutored	2.86	36

MATH 226 – Calculus I [GE]: Although the mean grade of the tutored students was higher, the difference in mean grade points by tutoring participation was not statistically significant.

	Mean grade points	N
Not tutored	2.80	240
Tutored	2.99	28

MATH 70 – Algebra II: There was no statistically significant difference in mean grade points by tutoring participation.

	Mean grade points	N
Not tutored	3.17	276
Tutored	3.01	37

HTM 531 - Hospitality Services Management – GWAR: There was no statistically significant difference in mean grade points by tutoring participation.

	Mean grade points	N
Not tutored	2.59	34
Tutored	2.49	36

ANTH 305 – Writing Anthropology - GWAR: Although the mean grade of the tutored students was higher, the difference in mean grade points by tutoring participation was not statistically significant.

	Mean grade points	N
Not tutored	2.96	16
Tutored	3.06	25

MATH 60 – Algebra I: Although the mean grade of the tutored students was higher, the difference in mean grade points by tutoring participation was not statistically significant.

	Mean grade points	N
Not tutored	3.12	453
Tutored	3.20	25

MATH 227 – Calculus II: Although the mean grade of the tutored students was higher, the difference in mean grade points by tutoring participation was not statistically significant.

	Mean grade points	N
Not tutored	2.17	213
Tutored	2.20	20

CHEM 115 – General Chemistry I: Essential Concepts of Chemistry: There was no statistically significant difference in mean grade points by tutoring participation.

	Mean grade points	N
Not tutored	2.43	434
Tutored	2.25	26

Summary:

There were no statistically significant differences in mean grades between tutored and non-tutored students except in MATH 110. Here the mean grade for non-tutored students was 2.87 while the mean grade for the tutored students was lower at 2.54. This is equivalent to the difference between a B and a B+ grade. In all of the other courses, the tutored students performed as well as did those who did not receive tutoring, when controlling for SAT score.

The same questions raised in the introduction to this report are pertinent to interpreting the results. Is the measure of success of tutoring a higher mean grade than that of students who did not seek tutoring? How much higher should that mean grade be? If the tutored grade were only slightly lower, could that be interpreted as a success? It is the opinion of the Academic Institutional Research Office that the lack of statistically significant differences in mean grades in 12 of 13 courses should be interpreted as the successful impact of the two tutoring centers on student outcomes.