

Improving the Writing Skills of Engineering Students: Assessment of a Writing Workshop Model

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Introduction

For the last ten years, the College of Engineering has offered an optional class to students who are not proficient in writing. Students can enroll in a one-unit lab class as many semesters as they wish to get practice in writing. The goal is to provide students with weekly writing activities that include: instruction in basic grammar, proofreading, and editing. In addition to study and practice exercises, students in this writing workshop have writing assignments, which provide practice in using correct grammar, spelling, punctuation, sentence structure, and paragraph structure. Students have the opportunity to develop technical communication skills through written assignments such as memos, letters, and reports.

The content of ENGR 81W focuses on a progressive instruction and practice in the crucial areas of academic writing so that our students will be prepared to apply academic English to their oral and written communication. For this work, we have built upon the Commanding English program from the University of Minnesota (UM) and adapted it for the high needs of Generation 1.5 students at SJSU. This project compared the two-year retention and achievement rates of students who took ENGR 81W with those who did not.

Materials and methods

The College of Engineering selected freshmen from the classes of Fall 2012 and Fall 2013 as the pilot group. For the purposes of this study, we pulled remedial students for the experimental group and the comparison group. Students in the experimental group were enrolled in ENGR 81W (formerly ENGR 90W). Of the 106 remedial engineering freshmen, 63 enrolled in ENGR 81W in Fall 2012. There were 227 incoming engineering freshmen in Fall 2014 who were remedial in English; of these students, 135 enrolled in ENGR 81W.

Research Question 1: Do the students who took ENGR 81W have higher levels of achievement as measured by GPA, probation, and disqualification when compared to students who did not take ENGR 81W?

Research Question 2: Are there differences in achievement of remedial students when analyzed by ethnicity?

Results

Overall, remedial students struggled in their courses at SJSU during their first two years. For the Fall 2012, 17 of the remedial English engineering students were disqualified and an additional 13 left SJSU. For the Fall 2013 cohort, 15 of the remedial English engineering students were disqualified and an additional 13 left SJSU.

There was no significant difference in disqualification or leaving when comparing students who took ENGR 81W to those who did not.

Students in the ENGR 81W class were more likely to earn grades of C or better on their ENGL 1A class than students who did not take the ENGR 81W class; 76% of the Fall 2012 and Fall 2013 students who took ENGR 81W earned passing grades in ENGL 1A compared to 71.8% of students who did not take ENGR 81W.

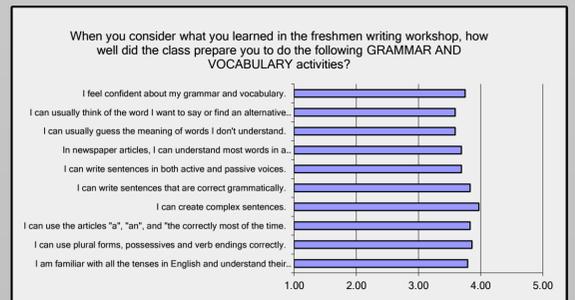
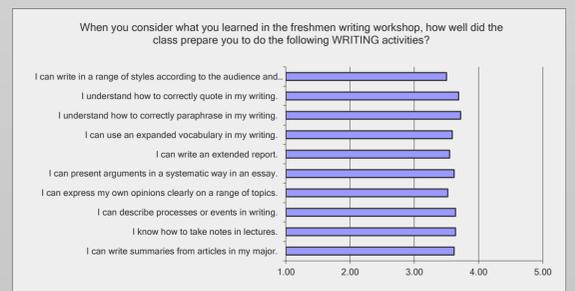
Most of the remedial English Engineering freshmen at SJSU were under-represented minority (URM) students. Overall, 93 of the 106 remedial English students in Engineering were URM students (87.7%) in Fall 2012 and 204 out of 227 (90%) were URM students in Fall 2013. An analysis of the ethnicities of the students shows that the two largest ethnic groups represented among the English remedial Engineering freshmen were Asian and Latino/a.

Student assessment of ENGR 81w was conducted utilizing a post survey on Survey Monkey in Fall 2012. The survey consisted of 25 questions focused on demographic and self-assessment questions. Based on the responses given, the majority of the students found that this course was helpful in preparing them for future writing activities. The students were also questioned on how well the class helped prepare them for reading and listening activities. The results were very similar to the writing and grammar and vocabulary responses, with the average student response falling between three and four on these questions as well.

(Sample questions to the right.)

Conclusions

Based on our assessment, students who took ENGR 81W (see Table IV) has moderately higher four-semester GPAs than students who did not take ENGR 81W although the difference was not significant ($t=0.13$). Also, there was a difference in the achievement of URM students in this class. For both Asian and Latino/a students, taking ENGR 81W was correlated with a modest increase in four-semester GPA. While not a significant increase, a single writing class was helpful for some Generation 1.5 students' long-term academic success.



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