

Impact of Student Assistants in Basic Skills English Courses at Cosumnes River College: Comparison of Success Rates

CRC Research Office

Summer 2015

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Background

This report discusses two studies that were designed to assess the potential impact of Student Assistants (referred to officially as “Instructional Assistants”) in Basic Skills English courses. In these intervention studies, Student Assistants provided academic support both in the classroom and in the Reading/Writing Center. It should be noted that these Student Assistants are not Cosumnes River College students but are students from 4-year institutions hired through the classified temporary process.

Methodology

Faculty and Student Assistants in Basic Skills English courses tracked student performance (official letter grade earned) and interactions with Student Assistants in courses (ENGWR 41, 42, 51, 58 and ENGRD 14, 15, 19, 59) from Fall 2010 through Fall 2014. The Research Office combined these records into one dataset and linked each student record with demographic data (age, gender, and ethnicity). Finally, an *interaction* variable was created to indicate whether or not (Yes/No) a student interacted with Student Assistants (inside or outside of class).

The previously described dataset was then used in two studies. In the first study (*Study 1*), the full sample of Basic Skills English courses was used to test whether or not interacting with Student Assistants (inside or outside the classroom) was associated with improved student success. Student success, or successful completion, is defined as the student earning a passing grade (A, B, C, or P) in a course. The conclusions drawn from the first study were limited, however, because findings could not highlight *how many* interactions would be sufficient to improve success. Fortunately, the raw frequency of interactions was tracked for a smaller set of classes. A second study (*Study 2*) therefore assessed how many SA interactions might be sufficient to improve student success. For both studies, data were analyzed with logistic binomial regressions.

Within the previously described dataset, several variables (e.g. number of Student Assistant interactions) were used to predict or “project” the probability of student success. If the probability of success for students who interacted more with a Student Assistant was statistically significantly different from those who interacted less, then the number of Student Assistant Interactions could be used to statistically predict a student’s probability of success.

Note. Students who were not tracked and withdrew (earned a ‘W’) were excluded from both studies. Due to this exclusion, the average success rates reported in both studies are higher than those typically reported. In addition, Native American students were excluded from Study 1 and 2, and students who identified as Multi-Race or Other/Unknown were excluded from Study 2 due to small sample sizes. Technical specifications for both studies can be found in the Analysis section but are not necessary for understanding the general conclusions of each study.

Overview of Findings

Study 1. On average, interaction with a Student Assistant (Yes/No) was associated with an increase in the probability of success of 15.0% (from 65.5% to 80.5%). This increased probability of success was the same regardless of age, ethnicity, and gender.

Study 2. The more a student interacted with an SA *in class* (from 0 to 10 interactions), the more likely they were to succeed. This was true regardless of age, gender, and ethnicity. However, the number of interactions required to predict a given probability of success differed based on the ethnicity. For example, to have a 70% chance of success, African American students needed six or more interactions and Hispanic/Latino students needed two. Students who were White required zero interactions and Asian/Filipino/Pacific Islander required two interactions to have a 70% likelihood of success (*Figure 1* on page 5). These findings suggest that this intervention could have a positive impact on equity. Although students who were White had a probability of

success greater than 70% whether or not they interacted with Student Assistants, students from other ethnic groups who interacted with Student Assistants (at varying levels) had the same probability of success (*Table 1*).

Table 1. *Number of interactions required to reach a 70% probability of success by ethnicity.*

| Number of Interactions | Ethnicity of Student |
|------------------------|------------------------|
| 0 | White |
| 2 | Asian Pacific Islander |
| 3 | Hispanic/Latino(a) |
| 6 | African American |

Limitations

There are four potential limitations to this study. First, classes that did not have Student Assistants were excluded. Second, in cases where students voluntarily interacted with Student Assistants, we cannot tell if their improvement in success was due solely to the interaction. For example, students who interacted with the Student Assistants might have other qualities that contribute to success (e.g., motivation, efficacy, persistence, etc.). In addition, the findings of Study 2 should be interpreted with caution due to small sample sizes. Finally, it is unclear whether these results would apply to a similar program implemented by Student Assistants who are CRC students.

Analysis

Table 2 contains demographic descriptions of participants in both studies. The sample size in Study 2 was lower because only a subset of classes tracked the raw number of interactions with the Student Assistants. Additionally, Native Americans and Multi-Race/Other Non-White/Unknown students were excluded from Study 2 due to small sample sizes.

Table 2. *Student Demographics – CRC English courses with Student Assistants (Fall 2010-Fall 2014).*

| Student Demographics | Percentage of Students Study 1 | Percentage of Students Study 2 |
|--|--------------------------------|--------------------------------|
| Ethnic Group | | |
| African American | 23.1% | 23.3% |
| Asian/Filipino/Pacific Islander | 34.0% | 38.4% |
| Hispanic/Latino | 24.2% | 26.7% |
| Multi-Race/Other Non-White/Unknown | 7.9% | 0.0%* |
| Native American | 0.0%* | 0.0%* |
| White | 10.9% | 11.6% |
| Gender | | |
| Female | 57.3% | 57.0% |
| Male | 41.1% | 39.5% |
| Unknown | 1.6% | 3.5% |
| Average Age | 24.2 | 23.6 |
| Total | 795 | 86 |
| *Due to the small sample sizes, Native American students were excluded from both studies, and students who identified as Multi-Race or Other/Unknown were excluded from Study 2. | | |

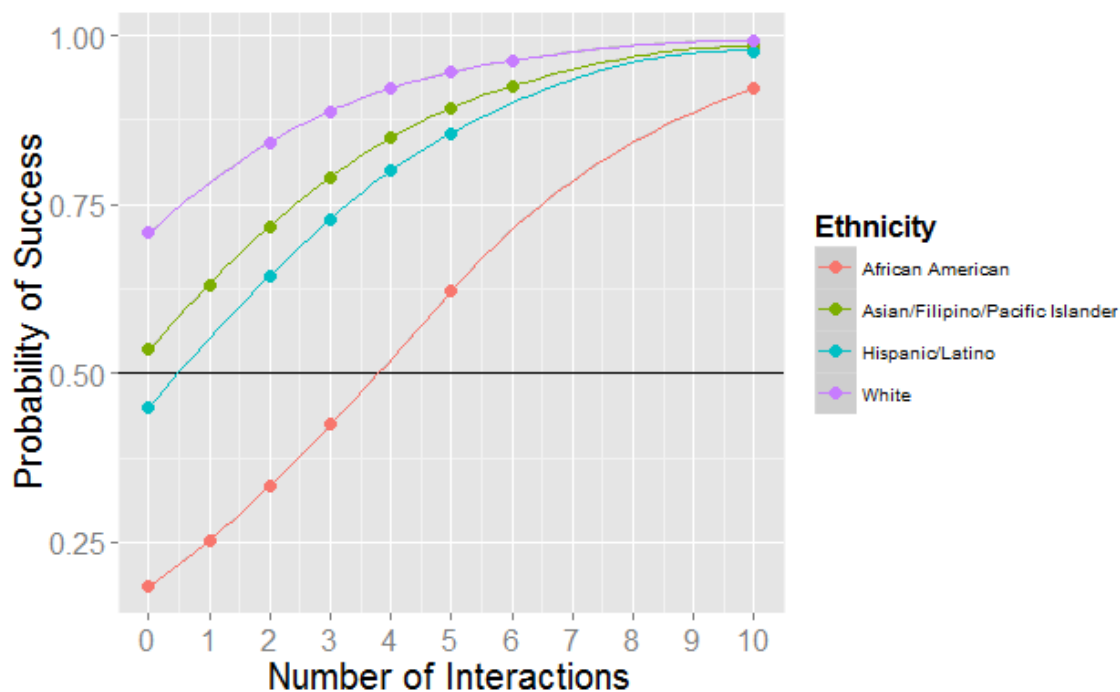
Study 1: Comparison of students who did and did not interact with a Student Assistant

Technical Specifications and Description. A generalized binomial regression model was used to predict whether or not a student was successful in a given Basic Skills English course. Error variance for this model was calculated assuming a quasi-binomial distribution. Interaction with a Student Assistant significantly predicted student success, $t(660) = 3.901, p < .001$. A student who interacted with a Student Assistant had a 15% greater chance of being successful in Basic Skills English – 80.5% compared to 65.5%. This effect was no different for students of different ages, ethnicities, or genders.

Study 2: The association between frequency of interactions with Student Assistants and Success

Technical Specifications and Description. A generalized binomial regression model was again used to predict whether or not a student was successful in a given English course. Error variance for this model was calculated assuming a quasi-binomial distribution. The number of times a student interacted with a Student Assistant significantly predicted student success, $t(84) = 2.57, p < .05$. Specifically, students who interacted more had a higher likelihood of success. It should also be noted that ethnicity marginally predicted the likelihood of student success, $t(81) = 2.80, p < .10$. As a result, the number of interactions required for a given probability of success differed on the basis of ethnicity. For example, African American students who interacted with a Student Assistant 4 times or more had above a 50% chance of succeeding, and Hispanic/Latino students who interacted one or more times had above a 50% chance of succeeding (see Figure 1). Students who were White or Asian/Filipino/Pacific Islander had above a 50% chance of succeeding (on average) regardless of Student Assistant interactions. The number of interactions for these student groups still increased the likelihood of success.

Figure 1. Probability of student success by number of interactions and ethnic group.



Note. Scale on the y-axis represents a student's probability of success (a grade of A, B, C, or P) in an English course *not* their projected grade in the course.