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The Impact of Near-Peer Mentoring in an Introductory Course (MS#2063)

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ABSTRACT

One methodology researchers have used to reduce or reverse poor retention rates is near-peer mentoring. Studies have shown that acting as a near-peer mentor aided in the mentor’s academic growth and was suggested to be a promising prospect for student retention. Kuh et al. have also demonstrated that the educationally purposeful activities described in the National Survey of Student Engagement, produced a statistically significant increase in first year grades, and second year persistence (1). A recent review of mentoring programs (2) suggests that more rigorous research should be completed, particularly with respect to the assessment of the social validity of the programs.

The revised introductory course at Florida Gulf Coast University (FGCU) integrates upper level students as near-peer mentors. The addition of these mentors to the class is designed to allow freshmen to more easily find their fit within the college and increase retention. The social validity of the program is evaluated through a mixed method approach including the use of pre and post surveys of the students enrolled in the course and focus group discussions with the students serving as near-peer mentors. The impact of these relationships on student self-efficacy and the future direction of the program will also be included.

BACKGROUND

While engineering job growth continues to remain steady or increase, the lack of qualified individuals to fill these positions, particularly under-represented populations, remains a concern. Although under-represented minority (URM) groups represent 28.5% of our nation’s overall population (2006), they comprise only 9.1% of college-education students in science and engineering occupations (3). This underrepresentation is not due to a lack of interest amongst URM groups, but is due to poor degree completion rates (4). One methodology researchers have examined to reduce or reverse poor retention rates is the use of near-peer or like-peer mentoring. It has been shown that amongst African-American engineering students at Auburn University, acting as a near-peer mentor aided in the mentor’s academic growth and was suggested to be a promising prospect for student retention (5). Similarly in a bridge program (programs designed for high school students transitioning into college engineering programs) at Tennessee Tech, African-American mentees demonstrated similar gains (6). Researchers have shown similar results in populations of women engineers (7,8) as well as research focused on first-year graduate students (9). Kuh et al. have also demonstrated through a review of multiple engineering programs that the educationally purposeful activities described in the National Survey of Student Engagement, including tutoring, discussing ideas from readings or classes with others outside of the classroom, and having serious discussions with students of different racial, ethnic, or ideological backgrounds produced a statistically significant increase in first year grades, and second year persistence (2).

OBJECTIVES

The specific objectives of this program are to:
1. Increase self-efficacy of engineering students engaged in near-peer mentoring.
2. Evaluate the impact of mentor (TA) training on effectiveness and self-efficacy.
3. Evaluate the impact of near-peer mentoring on first-year retention in engineering.

ASSESSMENT

Formative and Summative Evaluation Utilizing a Mixed Methods Approach.
- Pre and Post Course Surveys
- Mentor / TA Interviews
- Instructor Surveys / Feedback / Observations

PROJECT SIGNIFICANCE

A recent review of mentoring programs (2) suggests that more rigorous research should be completed, particularly with respect to the assessment of the social validity (participants perceived value) of the programs. This program will build upon the foundational research described in the background section, and specifically examine the impact near-peer mentors have on cultivating a sense of belonging within engineering, and whether or not this contributes to the retention of first-year students, particularly under-represented minorities. Furthermore, this study will also examine whether or not these relationships improve the efficacy of either the mentors and/or the mentees.

RESULTS TO DATE

The quality of the feedback on assignments from the TAs
The quality of the interactions with the TAs
TA’s ability to create an ongoing relationship
TA’s ability to answer your questions about the course / course assignments

FUTURE WORK

- Integration of Pre and Post Survey Results for four questions related to self-efficacy. Percentage of students who agreed with various statements regarding engineering community and success. Data is from the fall 2015 semester of the Introduction to Engineering course (n = 95 for pre data, n = 88 for post data, class size = 107).
- I have many friends who are studying engineering
- It is important to me to have many friends who are studying engineering
- I can do well in an engineering major during the current academic year
- I will feel “part of the group” on my job if I enter engineering

REFERENCES