

article:1466

Development, Implementation, and Evaluation of a Science Learning Community for Underrepresented Students

Written by Sherona Garrett-Ruffin, PhD

Recruitment of women, minorities, and first generation students into the sciences and science-related fields and retaining these students is a challenge at many universities (Clewell & Campbell, 2002; Hrabowski, 2003). The purpose of the Science Learning Community (SLC) is to retain women, minority, and first generation college students in biology and chemistry, and men, minority, and first generation college students in nursing majors at a large research university. Living/learning communities have been described as organized clusters of students with common characteristics, similar academic interests, enrolled in similar courses, and living together in a residence hall (Tinto, 1998). Although, the use of learning and living/learning communities has been reported to be a successful strategy for student retention, there is little empirical evidence in the published literature for the success of this strategy to recruit and retain underrepresented students in the sciences and science-related majors such as nursing.

The design and implementation of the Science Learning Community is based largely on Austin's (1985) and Tinto's (1993) theories of student involvement and student departure. Specifically, Austin suggests that students persist in college when strong and meaningful relationships exist between students and faculty. Tinto's work stresses the importance of students' connections and engagements within the university as important factors in student retention.

The following evaluation questions were used to guide the study:

Did students who participated in the SLC have a greater chance of returning for their sophomore year than students who did not participate?

Did students who participated in the SLC report greater academic success and connection to the university than those students who did not participate?

What aspects of the program are most important to the retention of the participants?

These evaluation questions are important to engineering education because it is likely that strategies that promote stronger student-to-student interactions, as well as, student-to-faculty interactions will have positive influences on the recruitment and retention of engineering students.

The retention data was collected through the institutional research department. Data on student satisfaction, expectations of the Project Director, student interactions and faculty interactions were collected from the program participants through analysis of student responses on applications, surveys and focus groups. Retention rates for the SLC students were compared

to a matched control group (ACT score, major, race, gender). Data were disaggregated according to gender, minority status, and area of major. The first year retention rate for SLC minority students was 87.5%, as compared to a 67% retention rate for minority students in the total university population and 73.1% of African American science majors.

Overall, SLC students reported strong satisfaction with the program. Since students were not randomly assigned to the SLC, selection bias may have had a role in the observed student outcomes. SLC students may be more motivated or have a greater desire and appreciation for social connections and collaborative work. These variables may explain the higher retention rates found among SLC participants. However, the use of three case-controlled samples matched for major, gender, race, and ACT scores lends credibility to the argument that the SLC program is having an impact on the success of women in sciences, men in nursing and minorities and first-generation students in both areas of study. Author 1: Sherona Garrett-Ruffin sgarret@bgnet.bgsu.edu

Author 2: Donna S. Martsolf dmartsol@kent.edu

[: Back to 2006 Winter Issue Vol. 2, No. 1](#)

[: Back to List of Issues](#)

[: Back to Table of Contents](#)