

Perceptions of Underrepresented Community College STEM Majors

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Community College STEM majors from underrepresented groups were interviewed about their experiences in math classes and their motivations behind choosing a STEM major. The goal was to uncover events that may occur in math classrooms that serve to marginalize underrepresented students and contribute to the dearth of these demographic groups in these majors. As interview data was gathered, it became clear that these students did not suffer from feelings of marginalization. Results suggest that involvement in co-curricular activities, guidance and encouragement from faculty members, and support from family and peers may serve to mitigate feelings of alienation that can occur in students from these underrepresented groups.

Keywords: Equity, Females, Minorities, STEM

The STEM fields in the United States have traditionally been dominated by white males. Females and minorities continue to be underrepresented in STEM occupations (NSF, 2017). These minority populations will comprise an increasingly larger percentage of the workforce moving forward, with the Hispanic population expected to increase by 115% between 2014 and 2060 (Colby & Ortman, 2015). If the United States hopes to remain competitive in these fields in the future, more candidates from these demographic groups must enter STEM degree programs at colleges and universities, earn degrees, and enter the STEM workforce.

The explanation for the dearth of females and minorities in STEM fields is multifaceted. However, the common denominator (pun intended) for STEM disciplines is their connection to math. Most of these disciplines require at least Calculus I, and many typically require through Calculus III. It is hypothesized that many underrepresented STEM majors may be lost due to racialized (McGee & Martin, 2007) and gendered (Hughes, 2000) encounters in these classes.

A group of underrepresented students in STEM majors at a suburban community college on the East Coast were interviewed about their experiences in math classes and the reasons behind their choosing a STEM major.

Research Questions:

1. Do specific events occur in math classes at the high school and college level that serve to marginalize females and minorities, affecting their retention in STEM fields?
2. What kinds of supports can help encourage the persistence of underrepresented students in STEM?

Interviews were conducted in the Spring and Fall semesters of 2017. Results suggested that these students did not suffer from feelings of marginalization in their math classes. On the contrary, encouragement they received from family, peers, and faculty members were instrumental in their success. Additionally, it is hypothesized that the community college context for this study impacted its results. Similar studies (Chavous et al, 2004; Cole & Espinosa, 2008; Wells, 2008; Espinosa, 2011) found varying student experiences based on the type of institution the student attended and its perceived campus climate. These results suggest that cultural capital (Bourdieu, 1986) may play a role in underrepresented student persistence and that the community college, with its unique positioning among institutes of higher education, may provide a more nurturing environment for underrepresented students to succeed in STEM.

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