

## **The Impact of Academic Support Practices on Two-Year College Students' Achievement in Science, Technology, Engineering, and Math Education: An Exploration of Factors**

**Authors :** Gisele Ragusa, Lilian Leung

**Abstract :** There are essential needs for science, technology, engineering, and math (STEM) workforces nationally. This important need underscores the necessity of increasing numbers of students attending both two-year community colleges and universities, thereby enabling and supporting a larger pool of students to enter the workforce. The greatest number of students in STEM programs attend public higher education institutions, with an even larger majority beginning their academic experiences enrolled in two-year public colleges. Accordingly, this research explores the impact of experiences and academic support practices on two-year (community) college students' academic achievement in STEM majors with a focus on supporting students who are the first in their families to attend college. This research is a result of three years of iterative trials of differing supports to improve such students' academic success with a cross-student comparative research methodological structure involving peer-to-peer and faculty academic supports. Results of this research indicate that background experiences and a combination of peer-to-peer and faculty-led academic support practices, including supplementary instruction, peer mentoring, and study skills support, significantly improve students' academic success in STEM majors. These results confirm the needs that first-generation students have in navigating their college careers and what can be effective in supporting them.

**Keywords :** higher education policy, student support, two-year colleges, STEM achievement

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