

Exploring College Algebra Students' Attitudes Toward Mathematics in Community Colleges

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Keywords: college algebra, community colleges, mathematics, emotions, attitudes

Attitudes toward mathematics play a critical role in shaping students' learning experiences, academic performance, and long-term engagement with the subject. In the context of community college education, where students often face diverse academic and personal challenges, understanding these attitudes becomes especially important. College Algebra, a foundational course for many degree programs, frequently serves as both a gateway and a barrier to academic progress for STEM fields. For a significant number of community college students, this subject also evokes complex emotions - ranging from anxiety and frustration to curiosity and resilience. Research links positive attitudes to increased motivation and academic success, while negative attitudes, particularly math anxiety, can significantly hinder performance and persistence (Barroso et al., 2021). Students' beliefs about their ability to succeed in mathematics, often shaped by their mindset and goal orientation, influence both their engagement and achievement (Bostwick et al., 2017). As such, exploring how students perceive and emotionally respond to mathematics and the learning of it in college algebra classrooms can offer valuable insights for improving future instruction and support.

As part of a broader research project involving eight community colleges in four states, this study seeks to explore the following research question: What are college algebra students' general feelings and attitudes toward mathematics in community college? Participants engaged in a series of four interviews within a year. During the interviews, participants (1) discussed their personal and mathematical histories related to their current understanding of equity, diversity, and inclusion in the learning of mathematics and the learning environment; (2) provided commentary on short videos of classroom instruction noticing specific characteristics that can be associated with of equity, diversity, and inclusion in the learning of mathematics and the learning environment; (3) engaged in a Q-sort exercise of student statements from the first interview supplemented with statements from the literature that were geared to elicit their perspectives on equity in their learning of mathematics and their learning environment; and (4) reflected on how their understandings of equity, diversity, and inclusion in the learning of mathematics and the learning environment had evolved over time.

This poster will focus on the first interview, where questions were asked to get students' affective connection to mathematics, and gain insight into how their experiences in college algebra classes at community colleges impact their relationship with mathematics. We will share our preliminary findings on college algebra students' general feelings and attitudes about mathematics in community college classrooms around the themes of participants' (1) affective relationship with mathematics, (2) observations about learning mathematics, and (3) beliefs about the nature of mathematics.

References

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