

Summarizing the Experiences and Beliefs of Community College Instructors and Students in a Corequisite Mathematics Course

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Keywords: developmental mathematics corequisite course, community college, mindset, math anxiety, math self-efficacy

At community colleges in North Carolina, the corequisite course model has been adopted for all the entry-level mathematics courses. Research about the corequisite course model has shown that these courses can successfully help students earn their mathematics credit (e.g., Childers et al., 2021; Kashyap & Matthew, 2017; Logue et al., 2019) and can increase students' interest in mathematics (e.g., Campbell, 2015). The purpose of this poster is to summarize my three-article dissertation study that described the experiences, mindset, math anxiety, and math self-efficacy of students taking corequisite courses and instructors teaching corequisite courses, the interactions between student and instructor experiences, and the influence of instructors on students' mindset, math anxiety, and math self-efficacy over the course of the semester.

The first article explored the experiences of students taking a corequisite course and instructors teaching a corequisite course, specifically, what characteristics of corequisite courses students and instructors found to be effective, ineffective, and what changes they would make to corequisite courses. A multiple case study design was used to analyze the student and instructor perspectives of corequisite mathematics classrooms. Semi-structured interviews were completed with 11 students and 13 instructors from four community colleges. Interviews were transcribed and coded, and then codes were grouped into four broader themes: (1) corequisite courses characteristics determined at the college and department level; (2) corequisite courses characteristics determined at the classroom level; (3) changes that have been or that could be made to corequisite courses; and (4) their overall recommendation of corequisite courses.

The second article was a convergent parallel mixed methods study that investigated community college students' change in mindset, math anxiety, and math self-efficacy in a corequisite mathematics course and what characteristics of corequisite courses influence these changes. Student's math self-efficacy significantly increased, while their math anxiety decreased over the course of the semester. Student's mathematical mindset did not significantly change over the course of the semester. Student interview comments could be categorized into two larger themes: (1) how students felt at the beginning of the semester when they signed up for a corequisite course; and (2) how the characteristics of the corequisite course influenced their mindset, math anxiety, and math self-efficacy.

The third article was a convergent parallel mixed methods study that investigated the extent to which community college students' change in mindset, math anxiety, and math self-efficacy in a corequisite mathematics course varied among instructors and how corequisite instructors influenced these changes in students' beliefs. The results from an ANOVA analysis showed that there were significant differences across the seven instructors in students' mean math anxiety gain scores. To investigate how instructors influenced students' mindset, math anxiety, and math self-efficacy, semi-structured interviews were conducted at the end of the semester with 11 students and 13 instructors at four community colleges, and student and instructor comments were grouped into four larger themes: (1) pedagogical decisions; (2) instructor disposition; (3) the classroom environment; and (4) instructor and student interactions.

References

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