

THE IMPACT OF COHORT EXPERIENCES ON STUDENTS' SENSE OF BELONGING, ACADEMIC PERFORMANCE, AND CAREER READINESS

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Mathematics is widely regarded as one of the most challenging academic disciplines, and many students struggle to complete their degrees within the typical four-year timeline in the USA. This study explores how cohort affiliation and shared experiences influence mathematics majors' sense of belonging, academic performance, and preparedness to become high school teachers. A significant number of undergraduates in mathematics in the state of California pursue the Teaching Option or the Integrated Credential Option with the goal of entering the teaching profession. Traditionally, aspiring mathematics educators in the USA complete a four-year mathematics degree followed by a one-year credential programme. However, the Integrated Credential Programme allows students to complete both their degree and credential within four years. This research focuses on the academic success of undergraduate students pursuing the Teaching and Integrated Credential Options who participated in structured cohort experiences, compared to those who did not engage in such programmes. The cohort programmes examined *Mentoring Mathematics Scholars with Success (M2S2)*, *Building Opportunities through Networks of Discoveries (BOND)*, and the *NOYCE Scholarship Programme*. Both M2S2 and NOYCE are federally funded programmes that offer financial support and cohort-based learning experiences. The NOYCE programme also provides teaching seminars, content mentoring, and opportunities to attend professional conferences. Using a mixed-methods approach, this study compares the sense of belonging and academic outcomes of students in cohort programmes with those of other mathematics majors. Data sources include institutional performance metrics (GPA and graduation rates), surveys, and interviews. The quantitative dataset includes 766 mathematics majors who entered the university between 2018 and 2024, comprising both first-time freshmen and transfer students from community colleges. Additionally, 43 survey responses and five interviews were collected and analyzed quantitatively. A pooled two-sample t-test is used to identify significant differences in outcomes between the groups. Preliminary findings indicate that students involved in cohort programmes demonstrate higher retention rates, a stronger sense of belonging, and increased career readiness in mathematics education. These insights can inform the development of academic programmes that enhance student success and effectively prepare future educators for the teaching profession.

Keywords: Academic performance, Cohort affiliation, Mathematics undergraduates, Preparedness for teaching, Sense of belonging