

A DBER Science Education Seminar

Surveying the Landscape: the Student Experience in Introductory STEM Courses

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There are high rates of attrition in STEM between the first and second year of college, which is often right after students have taken their first introductory STEM courses. While a number of studies have explored factors contributing to STEM attrition, one largely overlooked factor is the transition in instructional practices that students experience when they enter college. To better characterize the transition to college we have used a combination of student survey and classroom observation data. We surveyed students in large introductory courses from across 10 STEM disciplines at three undergraduate institutions in the United States during the first week of classes and mid-way through the semester about their expectations of how class time would be spent, and any course-based concerns they had. We identified demographic differences in both student expectations and concerns. Overall, first-generation and first-semester students predicted less lecture than their peers. After controlling for initial concern and final grades, female students maintained higher levels of course-based concerns than their male peers. Given that student experiences can be impacted by both their performance and perceptions, addressing and alleviating concerns through communication and instructional practices may improve students' overall experiences and facilitate their success.

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