Developing a Context-Integrated Mindset / Belonging Intervention to Eliminate Demographic-based Underperformance in Challenging Large Lecture Undergraduate Courses
Postsecondary and Adult Education; Development and Innovation

Project Summary

Purpose. Even among those students who successfully enroll in a four-year college or university, more than one out of three will not earn a degree after six years, and there are further large differences by race/ethnicity. Even in selective institutions and even after accounting for differences in academic preparation, large gaps in completion rates occur by basic demographic variables. One important source for these inequitable outcomes is performance in large lecture courses, which we call demographic-based course underperformance. Psychosocial interventions have shown considerable promise for addressing such course-based inequities using highly cost-effective brief interventions. However, a number of attempts to scale up such interventions have found weak or null effects. We argue that the contents of these psychosocial interventions must be adapted to the specific concerns of students in particular courses and use procedures that involve social in-class participation with the intervention. Based on highly promising results with early versions of this approach, we propose to develop a systematic method for adapting the intervention to new courses / new contexts.

Project Activities. Across eight different courses that purposely vary in contextual ways, the project will develop and iteratively refine systematic methods for using administrative data and focus groups to identify which students are underperforming in a particular course, surface their concerns, adapt the intervention to the course, test and refine a theory-of-action that captures the multiple pathways by which the intervention addresses demographic-based underperformance, and conduct a pilot study in two different courses (using random-assignment of recitation section to condition within each of three different course sections of each of two courses) to test the impact on course grades overall and in the targeted demographic group. Costs for using the approach to customizing and implementing the intervention will be systematically examined.

Products. The project will produce intervention materials for a range of course types/specific student concerns, data collection and analysis scripts to allow for systematic-integration into new courses, and a detailed research-based understanding of how and why the intervention works in these courses.

Structured Abstract

Setting: an urban university in Pennsylvania

Population/Sample: Approximately 8,000 students (2,000 in the Pilot study) will participate in the project. Representing undergraduate students typically attending selective, public research universities in the midwest, participants will typically have median ages between 18 and 20 across the targeted courses with the expected demographic characteristics: 53% female, 11% Asian, 5% Black, and 5% Hispanic/Latino.

Intervention: A psychosocial intervention focused on both growth mindsets and sense-of-belonging that is delivered in one class/recitation session, whose contents are systematically-adapted to the specific local/contextual concerns of demographic subgroups who have consistently shown underperformance in recent offerings of this course.

Research Design and Methods: The iterative design and development work applied to eight different large lecture courses will involve surveys aligned to an underlying theory-of-action, and systematic testing of alternative intervention designs using the theory-of-action measures will guide testing. Focus groups with students and interviews/focus groups with instructors will further guide the improvement process. Course grades and elimination of demographic-based underperformance within the grades will serve as the primary outcome measure of both iterative improvement work (Years 1-3) and the final pilot test (Year 4) .

Control condition: Business as usual instruction in other recitation sections within the same course sections. These control conditions typically employ "ice-breaker" activities and other social bonding exercises that are devoid of intervention content.

Key Measures: The primary outcome is demographic-based underperformance in course grades (i.e., effects of race/ethnicity and gender, controlling for HS GPA and SAT/ACT scores). Other measures aligned to Theory-of-Action include behavioral data (e.g., attendance) and survey-based measures of student beliefs and learning behaviors.

Data Analytic Strategy: The testing/refinement of the theory of action will involve structural equation modeling. The pilot test will be analyzed through HLM applied to course grades.

Cost Analysis: Data will be collected on the time required by various university actors to adapt and implement the intervention. Analyses will consider different scaling conditions. Cost considerations will feed into the iterative development process.