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Social Belonging Interventions: A Randomized Controlled Trial

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Overview

As a founding partner of the College Transition Collaborative (CTC), the University of Waterloo is implementing and evaluating a social belonging intervention targeting women in science, technology, engineering and math (STEM) disciplines. CTC is a partnership between researchers and 13 postsecondary institutions, each piloting this intervention adapted to its campus culture. The University of Waterloo is the only Canadian partner.

Prior work indicates that social belonging interventions can have significant, long-term benefits for students from traditionally underrepresented groups. These interventions consist of a single, brief writing exercise, typically introduced during first-year orientation, targeting a student's mindset by addressing their concerns about the transition to postsecondary education.

Every student encounters some challenging experiences in the transition to postsecondary education, such as feelings of loneliness, unexpected lower marks or difficulty making new friends. Students from more privileged groups are often able to identify with other students and professors on campus who may share their background. When they experience setbacks, they often view them as temporary. For students from traditionally underrepresented groups, these challenges often take place in a context where fewer students and professors look like them or have shared their experiences. This may signal that a "person like me" may not belong, or cannot succeed, in that environment. When students face such "belonging uncertainty," they become less likely to reach out to faculty, join student groups or seek out friends, all of which are important behaviours for academic success.

Large pilot studies suggest that social belonging interventions can help students form the most adaptive mindset with which to face these challenges. This project investigates the degree to which having first-year students participate in a social belonging intervention at a critical period, before school begins, can improve the retention rates, academic performance and psychological well-being of underrepresented students. Although not underrepresented overall, women remain an underrepresented group in STEM, and as such will be a group targeted by the University of Waterloo's intervention. In addition, no known study in social psychology has examined such experiences for international students, and Waterloo is ideally suited to understand this population.

Methodology and Timeline

The social belonging intervention consists of a reading-and-writing activity aimed at teaching students that negative events and feelings are normal and temporary, rather than a sign that they do not belong. Students read short anecdotes in which upper-year students describe their university transitions and setbacks, and explain that at times they too faced belonging uncertainty. However, they also detail how with time and some strategic steps, they eventually felt a sense of belonging. These anecdotes are drawn from stories shared by past students but edited for clarity and for space, and to communicate the core message. Participants are then guided to apply these messages to their own experiences.

The project is being conducted in two phases:

- **Phase 1 | Analysis of Historical Data to Examine the Institutional Context**

Given that underrepresentation is context-dependant, historical data (2009–2011), consisting of students' grades, courses taken and registration status at the end of their first year, was analyzed to investigate the context of underrepresentation at the University of Waterloo and how it relates to the academic performance and retention rates of different student groups.

- **Phase 2 | Evaluation of the Effects of the Social Belonging Intervention on the Retention Rates and Academic Performance of Underrepresented Students**

In 2015, the intervention materials were developed and tailored to incoming first-year students at the University of Waterloo. Specific materials were created to target women in STEM, specifically mathematics, engineering and physics.

Prior to course enrolment, the 2015 cohort of first-year students received an invitation to participate in a survey containing the social belonging intervention. The intervention was repeated with the 2016 cohort of incoming first-year students.

A follow-up survey was administered in the spring to examine the psychological benefits of the intervention for students, by evaluating whether students reported reduced belonging concerns, improved self-efficacy, identification with their school or program, engagement in class, or greater use of campus support services.

Students' official grades and registration statuses will be compared at the end of their first year in order to evaluate whether the following statements are true:

- Those undergoing the intervention are more likely to complete their first year and perform better academically.
- The intervention is effective primarily for students from identified disadvantaged groups and could be more effective for some subgroups than others.
- The students' self-reported experiences, well-being and interpretations after their first year explain mechanisms through which the intervention triggered grade and retention benefits.
- Other aspects of well-being are bolstered by the treatment, such as self-efficacy, intentions to stay in their program, stress and perceptions of being able to cope with stressors.
- There are differences between disciplines, cohort years and the other participating schools.

Contact Information

For more specific information about this project or for any questions, please contact Helen Tewolde, Senior Researcher and Manager, Centre for Equitable Access at HEQCO (htewolde@heqco.ca), or Christine Logel, Assistant Professor, Renison University College at the University of Waterloo (clogel@uwaterloo.ca).