

Examining the Perceptions and Impact Toward International Students from Teaching Assistants in Undergraduate, Non-Major Biology Laboratories

Background

Underrepresented and minority groups within higher education face a lack of equity across STEM disciplines. Recent literature has displayed gender-based, racial, and ethnic disparities, among others, to be prevalent issues causing lower performance, participation, and rates of retention^{1,2}. While issues such as the gender gap are currently being addressed, there are many other identity-related barriers students are facing in the classroom. One such issue that has been overlooked is that of international students facing isolation due to language barriers, the lack of relationships with host nationals, racial discrimination, and poor integration³. Social isolation, and developing a social network, is the primary issue of adjustment for international students; however, this issue begins in the classroom when students are not given the support they require⁴. Coping behaviors exhibited by these students within the classroom are comprised of little class participation, a lack of asking clarification questions, and sitting and studying with other international students (thus further delaying integration).

A key strategy for reducing the adjustment and social integration barriers within the classroom is for instructors to acknowledge the feelings and apprehensions they hold regarding diversity and interacting with international students⁴. The perceptions faculty hold can manifest into the relationships they build and interactions they engage in with students. Professors may fail to recognize the complexity of issues that international students are navigating, specifically those relating to language and writing. The misinterpretation of behavior from international students by faculty results in a need for support and a shift in pedagogy⁵.

Project Aims

The goal of this study is to understand how the perceptions of teaching assistants (TAs) in non-major, undergraduate biology laboratories impact international students. A critical gap in the literature exists surrounding what is known and understood as the impact the perceptions, assumptions, biases, and stereotypes faculty have toward international students in the classroom. I hypothesize that the assumptions and perceptions TAs hold toward international students negatively impact interactions with international students in the classroom. Active learning, defined as “seeking new information, organizing it in a way that is meaningful, and having the change to explain it to others”, has resulted in positive student outcomes and a decline in attrition rates when compared to traditional lecture methods⁶. Active learning laboratories have served as a model for addressing the identity-related issues students face, as these settings facilitate more one-on-one interactions and also exhibit discrimination.

Methods

A sample size of 20 teaching assistants from undergraduate, non-major biology laboratories will be interviewed. The Harvard Implicit Association Test (IAT), which detects unconscious preferences, beliefs and identities, will be administered to the TAs prior to the interview to better understand the hidden cognitive biases they hold. With the use of a camera and microphone, one-hour interviews will be conducted and recorded and stored with data security that requires two-factor identification. Qualitative data analysis, with the use of in-vivo coding, will be utilized to capture the nature of their responses⁷. The interview will begin with obtaining the TA’s demographic information: first-generation status, international student status, gender, race, ethnicity, etc. Following questions will be comprised of information regarding their background as a teaching assistant, the perceptions they hold toward international students, how

they believe their interactions differ between students, and how their perceptions influence their interactions and ways of communicating and connecting with students. The expense fund will be used to award \$25 gift cards after the interview as an honorarium for the teaching assistants' participation. The process of conducting interviews will begin as the new semester starts in January 2019 and will conclude by the end of February. One to two additional undergraduate researchers within the Cotner lab will aid in coding responses and an interrater reliability test of 0.90 will be our threshold for acceptability. All coding and scoring will be completed by late April and weekly meetings will be held with mentor and principal investigator to assess progress and analyze results.

The feasibility of this study can be assessed by the extensive studies addressing barriers in active learning laboratories that have been previously conducted. The studies from the Cotner lab have been instrumental in addressing issues of diversity and inclusion, reducing barriers students face in science by student gender gaps in participation, and exploring the concerns of teaching assistants within undergraduate, non-major biology laboratories. This work will build on the methods for inclusivity by addressing a gap in the literature regarding the experiences of international students.

Impact

This research study will allow the impact of the perceptions teaching assistants hold toward international students to be understood. The implication of my proposed work is that we will be better equipped to address the barriers that exist for this population of students and can provide better support. Collaborating with PhD candidate Hillary Barron and Dr. Lorelei Patrick with the NSF-funded Building Excellence with Scientific Teaching (BEST) program will allow for these data to be used in our inclusivity training for TAs.

References

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