

Using Student Experiences to improve Student Experiences: Increasing the Quality of Mentoring Through Perspective-Taking

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Abstract—USES (Using Student Experiences to improve Student experiences) is a sub-project of iAAMCS, a BPC-alliance that focuses on evaluating the impact of interventions on Black CS graduate students' success. The goal of USES is to impact advisor perspective-taking by sharing the realities of being underrepresented in a graduate program. The project has designed a self-paced, online learning module that frames stereotype threat and unconscious bias through real personal stories from previous graduate students. The accounts provide mentors with African American graduate students' perspectives and authentic experiences they have faced. Strategies for combating unconscious bias and stereotype threat are illustrated as methods for improving students' experiences and interactions.

The module is part of a joint study between Pollinate and The University of Alabama to explore the impact of professional development based on these vignettes. The hypothesis is that sharing these stories improves the use and efficacy of perspective-taking and ultimately improves mentor-mentee relationships and graduate student success. The stories are embedded in a bias-reduction strategies module.

Keywords—Broadening participation, mentoring, perspective-taking

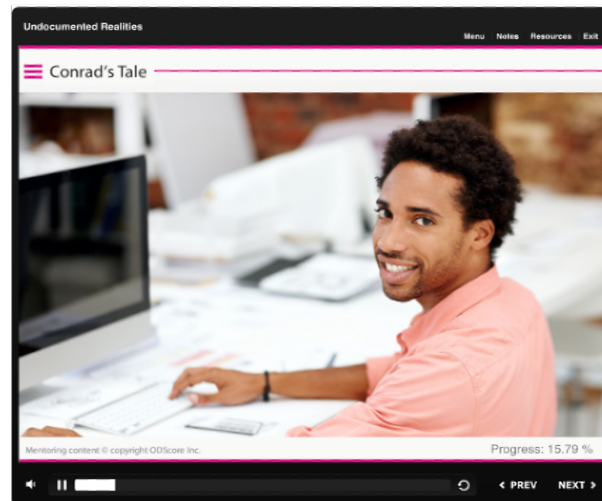
I. INTRODUCTION

Black students make up a tiny percentage of the graduate student body in computing sciences. In 2019, they accounted for approximately five percent of Bachelor enrollment, less than two percent of Master's program enrollment, and roughly one and a half percent of Ph.D program enrollment [1]. iAAMCS (Institute for African American Mentoring in CS), a BPC Alliance, was designed to create tools and interventions that improved the rate Black students get to and through graduate school.

The retention and graduation of Black students continue to be challenging in CS graduate programs. Although there are many factors, advisor-student relationships' quality is one area that could benefit from focused professional development and additional data collection and assessment development. Ongoing feedback from mentoring programs tells us that

materials created to enable perspective-taking benefit both the mentor and the mentee; however, we seek to do research documenting the types and levels of impact for mentors and mentees.

iAAMCS partnered with Pollinate Networks and MentorNet to produce a set of perspective-taking materials for mentors based on the lived experience of recent Black graduates in Computing Sciences. This lightning talk discusses the project history, motivation from literature, and current approach.



"Finding people who wanted to be engaged with me took some effort, but networking helps more than it hurts. There will always be people willing to have a conversation with you. But when they're not, you just take it with a grain of salt and move on."

Fig. 1. "Conrad" is a character devised from the lived experiences of recently completed Computer Science PhD students.

II. PERSPECTIVE-TAKING IN MENTORING

Perspective-taking is a social cognitive process that is key to social emotion processing, and human empathy [2]. In addressing mentor and mentee preparation for academic groups, entrepreneurship programs, and other organizations, perspective-taking has increasingly shown itself to be appreciated and sought out to develop high-quality mentoring relationships and improve the mentor's efficacy when supporting mentees with diverse backgrounds. Our evidence to date is anecdotal; mentors express that students sharing their experiences has opened their minds dramatically to how a mentee's experience differs from their own. It also ensures mentors do not ask questions that show a lack of basic education on issues of race, gender, and economics education that the mentee would have to "fill in." Finally, we've observed that sharing experiences empowers mentees.

The academic literature is limited with regard to perspective-taking in mentoring, particularly to increase the diversity of a program and field of study. Perspective-taking is a foundation in youth mentoring programs has been studied by Spencer et al. [3]; Järvelä and Häkkinen [4] demonstrated that perspective-taking leads to higher quality conversations even where the mentoring relationship is web-based. Multicultural attitudes and perspective-taking amplifies primary school teachers' ability to navigate cultural differences [5], [6].

- Introduction
- Lesson. Overview
- U. S. A. Population and computer science statistics
- Journey through graduate school
- The African-American experience
 - Conrad's tale
 - ELAINE's tale
 - Liza
 - Jesse and Nathan
 - Summary
- Knowledge check
- Unconscious bias
- Bias reduction strategies
 - Individuation
 - Stereotype replacement
 - Counter stereotype
 - Contact
 - Perspective taking
- Lesson review
- Congratulations

Fig. 2. Module Outline

III. APPROACH

The learning module outcomes are:

- Learn about biases and stereotypes faced by Black students
- Understand how unconscious bias and stereotype threat can originate from those committed to a student's academic success
- Identify useful strategies and resources for Black students
- Learn bias reduction strategies that can protect students from unconscious bias and stereotype threat

Given the journey through graduate school is uniformly difficult, the project team set out to capture the unique feelings and experiences that Black students have when pursuing advanced degrees in Computing Sciences. Several graduate students that identified as Black were interviewed in small groups to share anecdotes and experiences that they felt were related to their race. The stories were retold using the captured prose while using characters to protect the participant identities. The training module uses these experiences to introduce the relevant bias reduction strategies.

IV. STUDY IN PROGRESS

A mixed-methods study is in progress to understand if this approach improves a mentor's motivation and use of bias reduction strategies in general and perspective-taking. Long-term, the focus will expand to include improvements in the quality of the mentor-mentee relationship and Black graduate student success.

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