

OLC Presentations

DISCOVERY SESSION

A Design Case For A Mentoring Program For Women STEM Faculty

Date: Wednesday, April 19th

Time: 1:15 PM to 2:00 PM

Conference Session: Concurrent Session 1

Session Modality: Onsite

Lead Presenter: Amanda Rockinson-Szapkiw (University of Memphis)

Co-Presenter: Esra Ozdenerol (University of Memphis)

Track: Leadership and Advocacy

Location: Presidential Lobby - Discovery Sessions

Session Duration: 45min

Brief Abstract:

This presentation will outline a design case describing the tensions and resolutions of a virtual STEM mentoring program developed for mid-career STEM women faculty. The design focused on the self-paced modules. The case highlights the intersection of design elements, Bandura's (1977) sources of self-efficacy, as related to mentoring competencies and career advancement.

EXTENDED ABSTRACT

This design case describes the tensions and resolutions related to the development of a virtual STEM mentoring program for White and BIPOC women, who are STEM faculty in mid-career seeking career advancement within a higher education institution.

The design goals focused on the self-paced modules and resolved issues related to virtual cases, content presentation, practice, and reflection. The case highlights the intersection of design elements with Bandura's (1977) four sources of self-efficacy (i.e., vicarious experiences, social persuasion, performance

accomplishments, and psychological response) as they relate to mentoring competencies and career advancement.

A disparity exists in science, technology, engineering, and mathematics (STEM) fields among gender and racial and ethnic populations (National Science Foundation [NSF], 2019). This is especially the case for women in STEM departments in higher education who make up less than 20% of senior and leadership positions across most US institutions. Mentoring is becoming an intervention to promote women's and Black, Indigenous, and People of Color's (BIPOC) STEM engagement, matriculation, advancement, and persistence (Carlone & Johnson, 2007; Hill et al., 2010; National Academies of Sciences, Engineering, and Medicine [NASEM], 2019). The research documenting the benefits of mentoring for women and BIPOCs has primarily focused on face-to-face programs (Dawson et al., 2015; NASEM, 2019). Few studies have examined STEM peer mentoring programs in virtual spaces (Gandhi & Johnson, 2016). Literature that does exist on virtual STEM mentoring programs have focused on the benefits of online mentoring, such as positive changes in learning environments for girls (Subotnik et al., 2019) and increased self-determination and self-advocacy in college students with disabilities (Gregg et al., 2016, 2017). These outcomes, however, are often dependent on mentees' perception of quality mentoring and mentoring relationships, leading researchers like Subotnik et al. (2019) to call for studies on the "training and supervision of mentors" (p. 93). Gregg et al. (2017) similarly implored, "professionals should recognize that effective virtual mentoring is by no means an automatic process but rather requires adequate mentor/mentee training and resources to support the practice" (p. 212). It is evident that for virtual mentoring to have a positive impact, it must be preceded by appropriate training. The design of a virtual mentor/mentee STEM faculty training is thus the focus on this design case.

A design team created to develop the virtual mentoring program, and the team had about 6 months to complete development and testing. During the presentation, this 6 month process will be described, including how objectives informed the design, choice of hardware, and choice of software.

The largest design tension, how to build a sense of belonging and self-efficacy for underrepresented populations in an online training modules, will be discussed. And, usability testing results will be provided. A discussion about implications for design will ensue.

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