



**IEEE Education Society Seminar: Measuring students' opportunities to develop professional skills:  
Lessons learned in assessing "hidden" constructs in education\***

**Friday March 31 1:30-2:30pm**

**Zoom Link: <https://asu.zoom.us/j/87297796941>**

**Abstract:**

In education, apart from assessing students' abilities and competencies, it is also crucial to measure the "hidden" constructs. "Hidden" or latent constructs refer to things about a learner that cannot be directly observed. Examples of "hidden" constructs include self-efficacy, learning motivation, attitudes, etc. They hold great importance as they have the potential to influence and shape students' learning experiences and outcomes. Thus, creating measurements that allow reliable, valid, and fair assessments of these latent constructs can help educators and researchers understand students' experiences and provide them with better support. However, because latent constructs are usually "hidden," creating instruments for them can be tricky. In this seminar talk, I will share my experiences as part of the research effort to create the Professional Skill Opportunity survey (PSO) measuring a "hidden" construct. The PSO measures engineering undergraduate students' opportunities to develop various non-technical professional skills. Funded by NSF, since 2021, our teams from The Ohio State University (NSF-2129308) and Purdue University (NSF-2129282) have undergone a survey development process including construct definition, expert review, cognitive interviews, survey pilot, and large-scale data collection at multiple institutions. Currently, we are focusing on establishing validity evidence for the PSO and generating the intended uses for the instrument. During our survey development, we have summarized a list of essential takeaways and lessons learned, which we hope to incorporate in our future research and share with the broader education research community.

**Biography:**



Tiantian Li "Olivia" is a Ph.D. student in the School of Engineering Education at Purdue University. She graduated with a bachelor's degree in Biological Engineering with a concentration of Pharmaceutical Processing Engineering. She is currently pursuing a master's degree in industrial engineering. Her research interests are in assessing engineering students' socio-technical systems thinking skills during design and understanding the experiences of international scholars in the U.S.

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