



Can we capture inclusive STEM teaching practices through surveys?



#2201928: *Developing a Scalable Measure of Inclusive STEM Teaching Practices for Diverse Institutions*

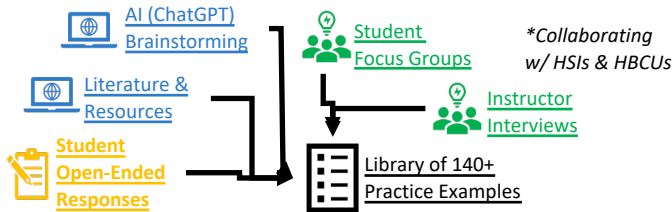
Why it matters

Instructional assessment and improvement can be more effective if we can capture which specific practices occur in the course

Measurement Challenges and Solutions (Methods)

Challenge #1: Hundreds of policies and moments create a course culture. How do we find the practices that matter most?

Solution: A library of inclusive practices building from student perspectives and supplemented through multifaceted approach



Challenge #2: Instructors implement practices in idiosyncratic ways. How do we find commonalities across practices?

Solution: Aggregate practices through literature and expert review

Student examples of practices

- "...gave examples of how other professors use the concepts in their research."
- "...brought in a guest speaker who talked about what they use from college in their job."
- "...assigned a worksheet on how the course connected to our career goals."



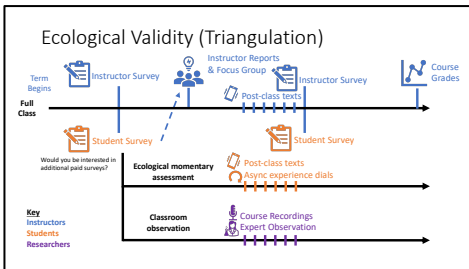
Example Measured Practice

"Did the instructor say or do something that demonstrated how the topics and skills covered in the course can be used after college?"

20 Practices

Challenge #3: Practices are subjective and may be differently reported by students, instructors, and researchers.

Solution: Triangulate real-time and retrospective reports and observations by students, instructors, and researchers



Example Survey Measure

- Yes, my instructor **definitely** did something like this
- No, my instructor did **not** do something like this
- **Somewhat**, my instructor did something a **little** like this

*Who is the "gold standard" reporter of what occurs?

Challenge #4: Variability within courses may reflect true differences in students experience, poor practice fidelity, or noise (e.g., memory, distraction, desirability effects, etc.).

Solution: Experimentally test clear examples of practices in a controlled environment to understand sources of variability

"...I believe that every single one of you can do well, and that struggling and making mistakes is a critical part of your learning..."

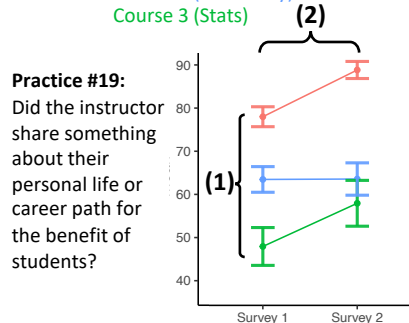
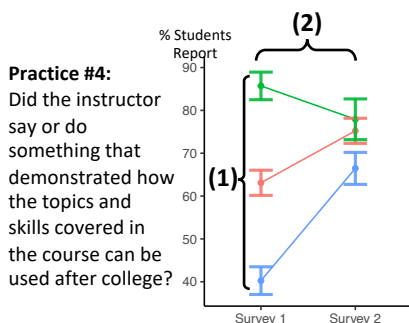
Did the instructor clearly state that making mistakes is an important part of learning in this course?

Promising Results

We have created a measure that can capture:

- (1) Differences between courses
- (2) Change over time within courses

Results shown are subset of 1327 students across 3 courses



Connect & Help us Improve!

What do you want to know before using our measure in your research or courses?

Email Eric N. Smith at ensmith@utexas.edu

View & Comment on 20 Current Practices ->



Take Example <- Student Survey

See Example Instructor Report ->

