



UNO STEM TRAIL CENTER

We present progress in developing a **student evaluation of teaching (SET)** inventory that **reduces bias, is instructor-actionable, and reliable across student evaluators**. We started with the Faculty Inventory of Methods and Practices Associated with Competent Teaching (F-IMPACT), which is a validated instructor self-report. Language was modified to turn the F-IMPACT into a **student observation protocol** called the S-IMPACT. **Initial face validity has been established** via focus groups and surveys. **Convergent validity has been established** with the Classroom Observation Protocol for Undergraduate STEM (COPUS). Preliminary results show higher use of HIPs by minorities and/or women, as expected from the literature.

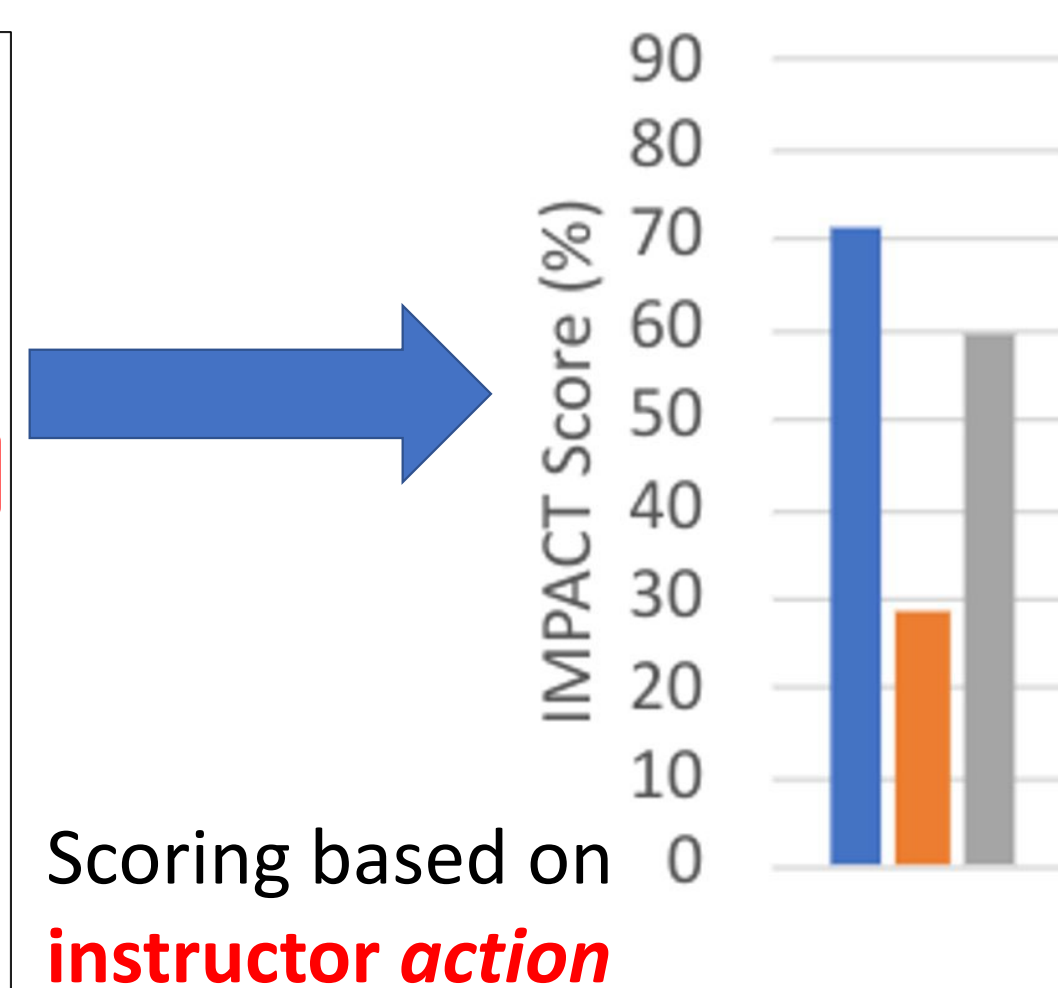
Research Questions

1. Can students serve as reliable observers of HIPs?
2. Can we measure instructional style at scale for low cost?

Measuring Instructor Action

Check all of the supporting materials that you provided to students in this course.

Student wikis or discussion boards with little or no contribution from you	☐
Student wikis or discussion boards with significant contribution from you or a teaching assistant (undergraduate or graduate)	☐
Solutions to homework assignments	☐
Worked examples (text, podcast, or other format)	☐
Practice exams, or previous year's exams	☐
Videos, animations, or simulations related to course materials	☐
Lecture notes or course PowerPoint presentations (partial/skeletal or complete)	☐
Articles from related academic literature	☐

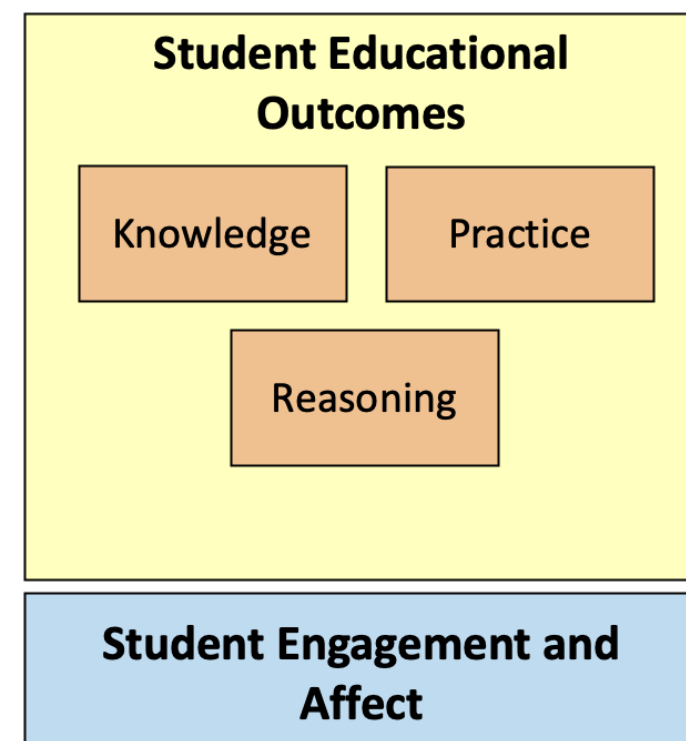
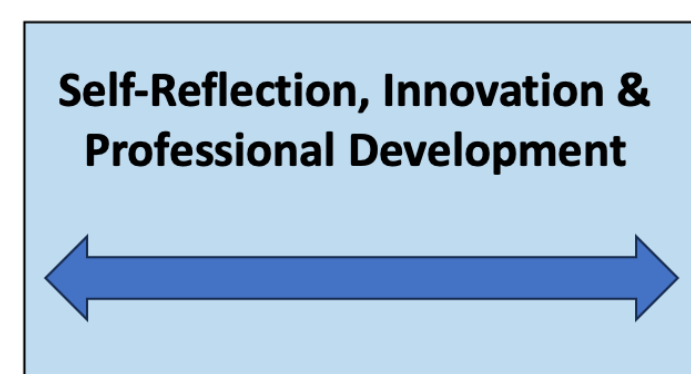
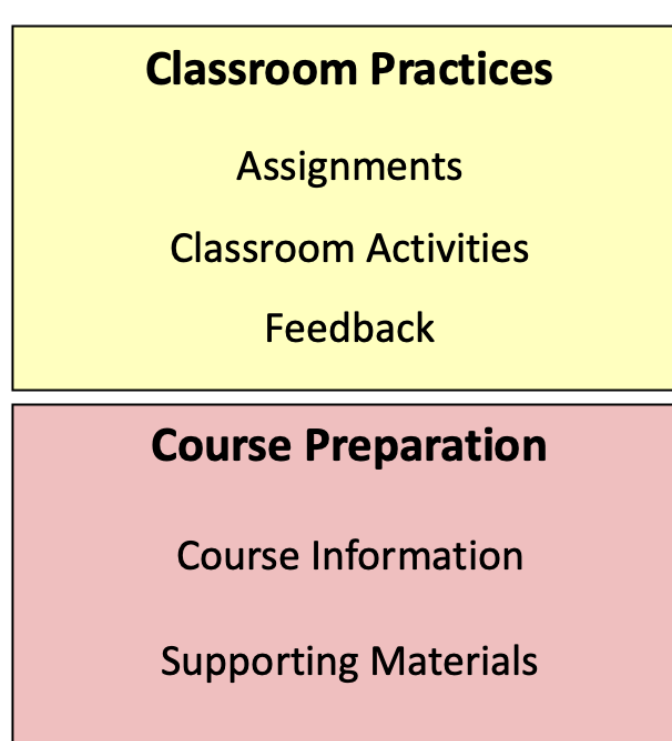


- Inventory of Methods and Practices Associated with Competent Teaching (IMPACT) - **measures faculty action**
- Modified from the Teaching Practices Inventory (TPI)
- **Validated for in-person and online courses**

Teaching Inputs

Pedagogical Growth

Teaching Outputs

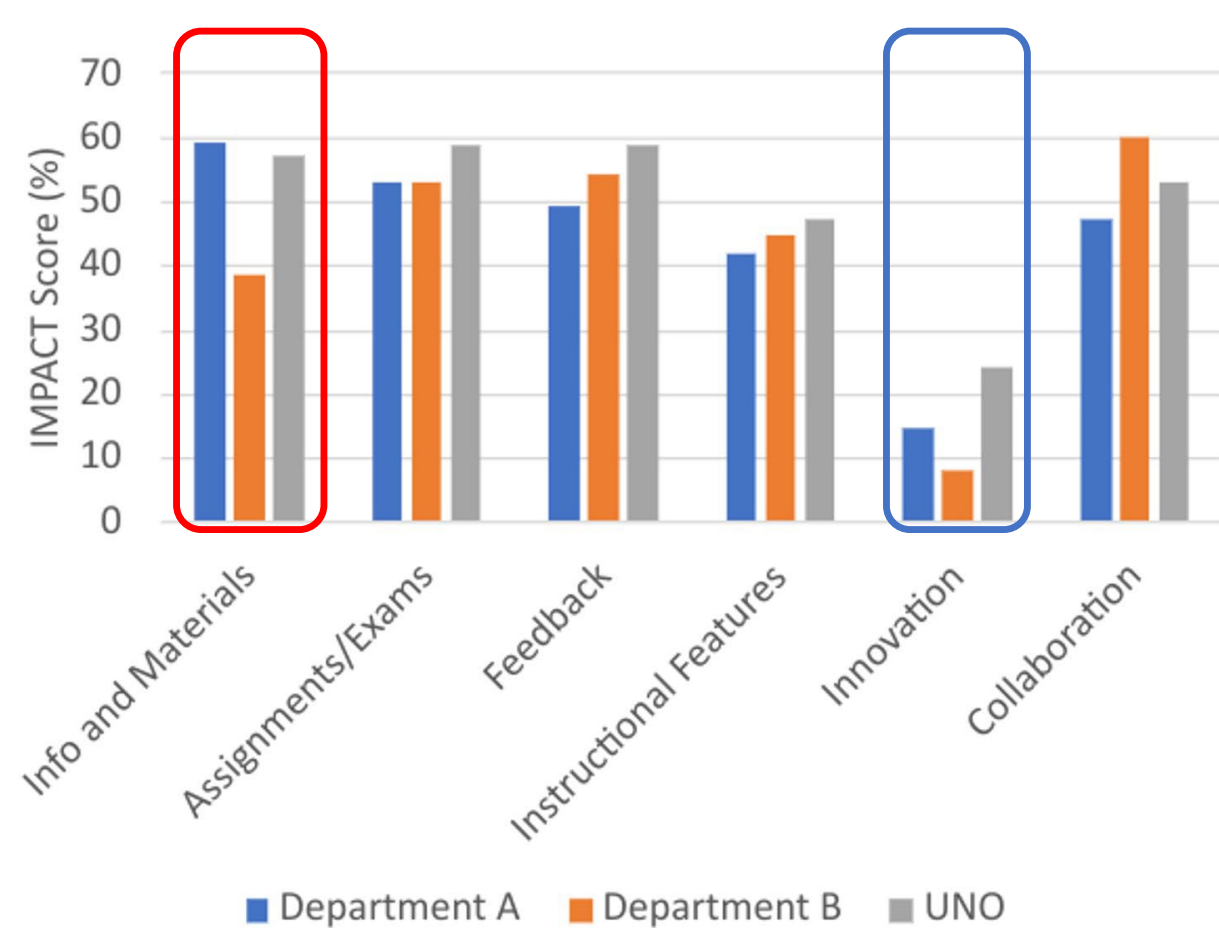


Teaching Inputs are instructor actions and are directly controlled by the individual instructor.

Pedagogical Growth activities demonstrate an instructor's continued improvement in teaching.

Teaching Outputs are the result of student actions and preparation. They are influenced by, but *not directly controlled* by instructor actions.

- Based on an **Inputs-Mediators-Outputs** model
- Focused on **“teaching inputs”** and **“pedagogical growth”**



Identify areas of strength and needs improvement at an **individual, department, and institutional** level

Reducing implicit bias in student evaluations: observations of high-impact classroom practices

Christopher Moore^{1,2}, Tracie Reding¹, and Ashley Gartner¹

¹University of Nebraska Omaha, STEM TRAIL Center

²University of Nebraska Omaha, Physics Department

Learn More



How do we measure IMPACT?



1

Scholarly

Based on the scholarship of teaching and learning across diverse fields



2

Actionable

Focused on teaching practices with metrics that guide constructive action



3

Equitable

Reduces implicit bias through observation of what faculty do, not who they are or their affect



4

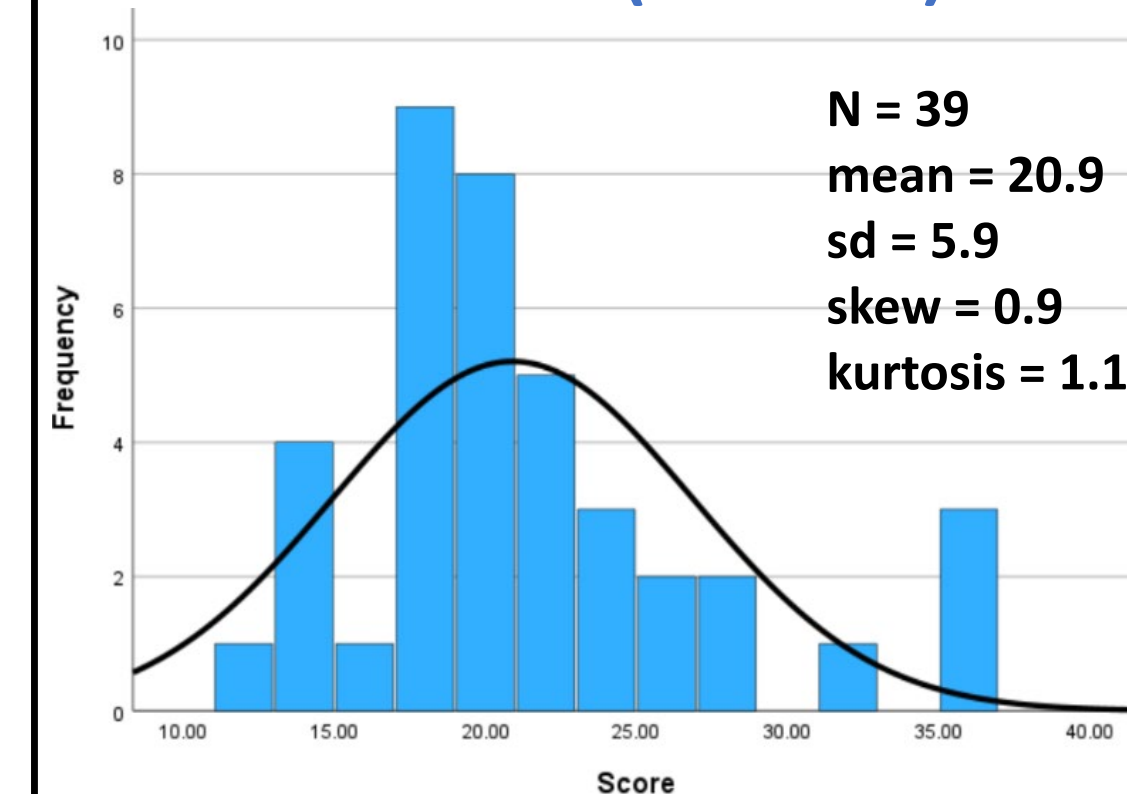
Reliable

Consistent results so that instructors know change will make a difference

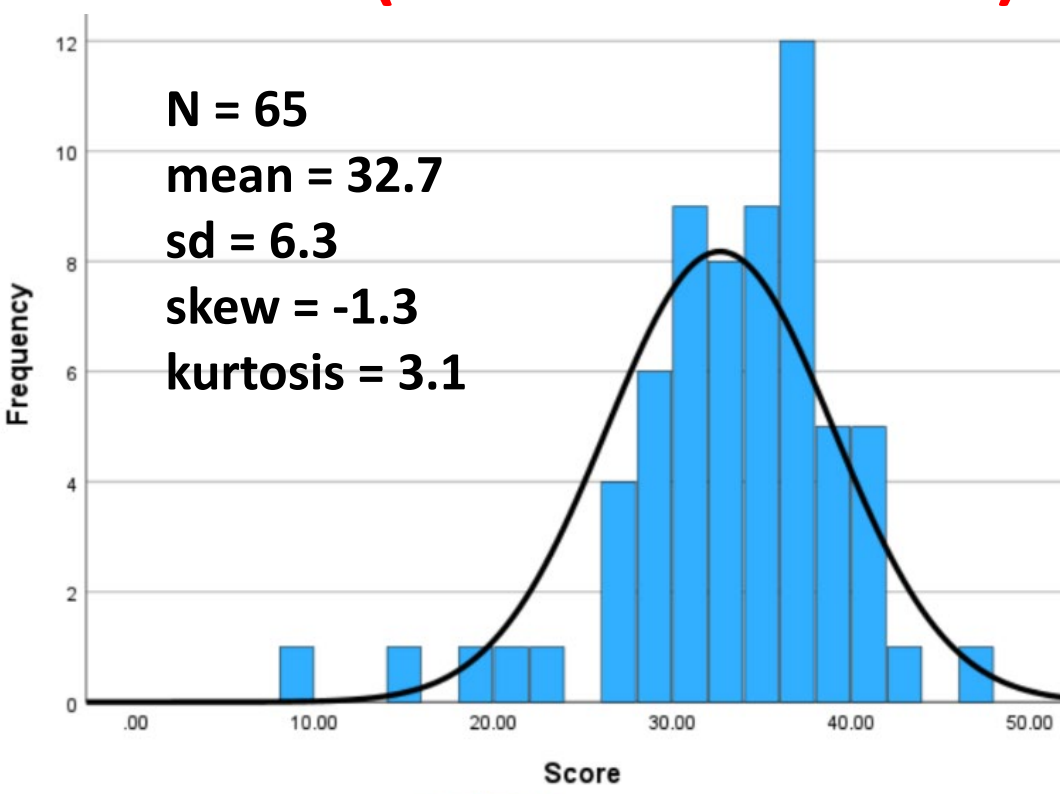
NSF DUE #2021315

S-IMPACT Reliability and Validity

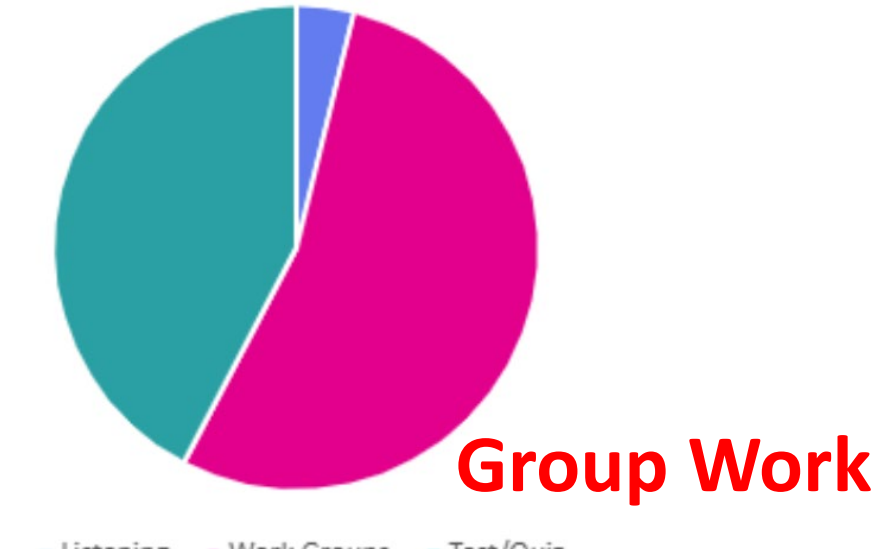
Course 1 (Didactic)



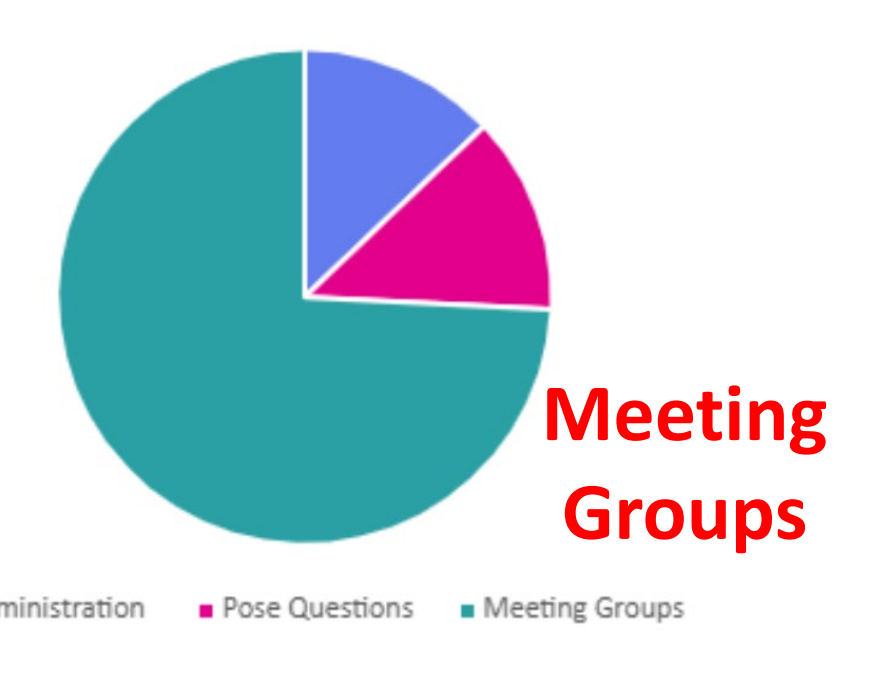
Course 2 (Student Centered)



Students Doing (COPUS)



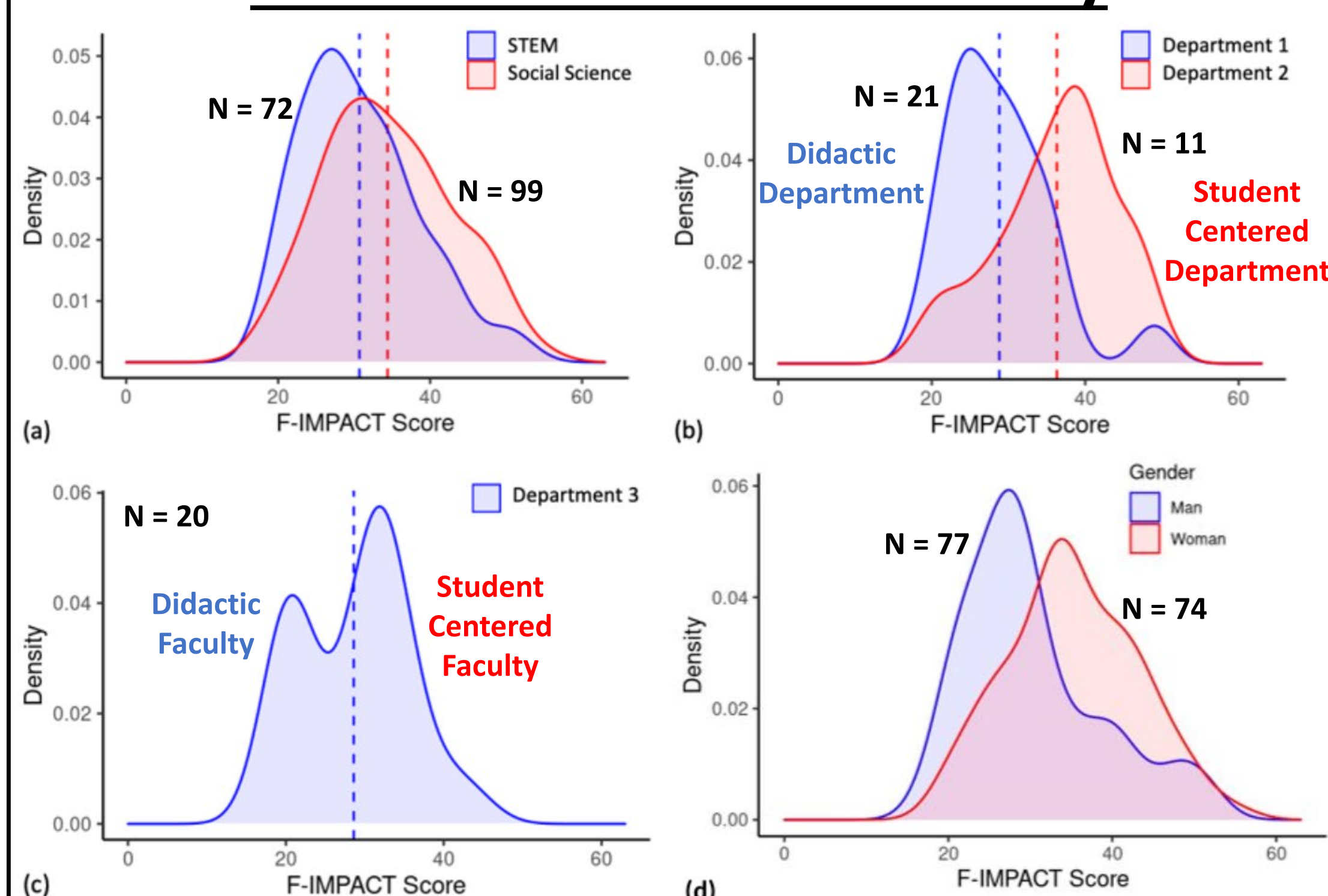
Instructor Doing (COPUS)



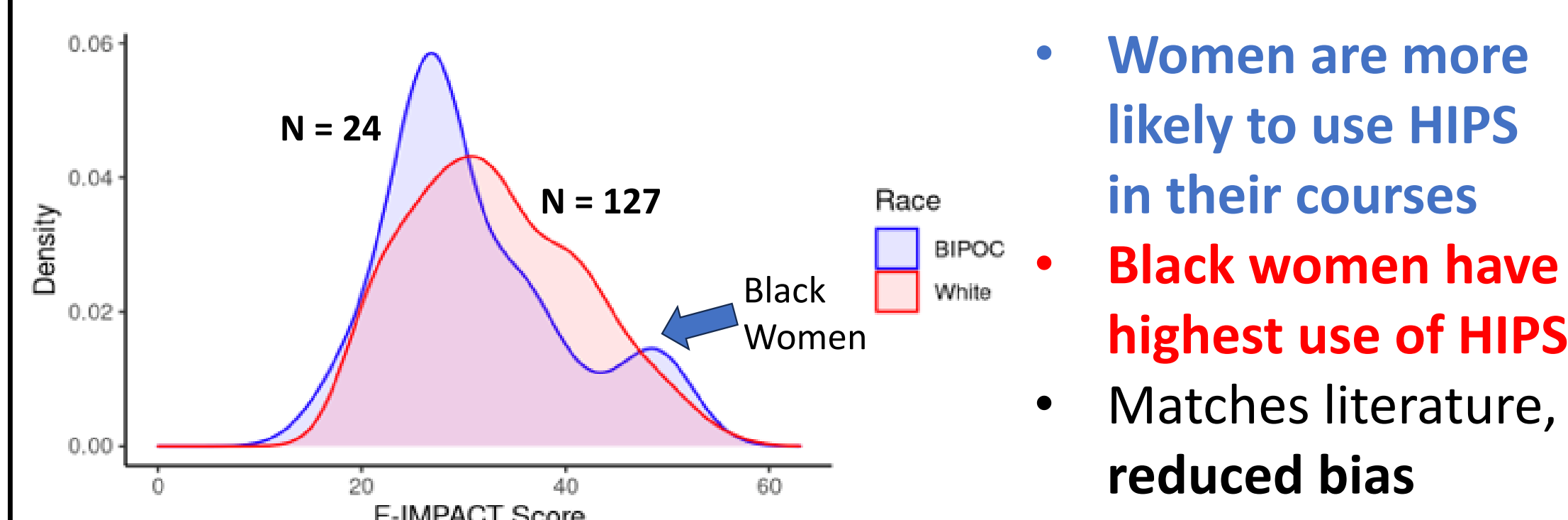
- S-IMPACT demonstrates **normalized distributions** with **low skew and kurtosis – reliable**
- Results **correlated** with expert COPUS observations – **valid**

Students **can** be reliable observers of evidence-based classroom practices.

F-IMPACT Construct Validity

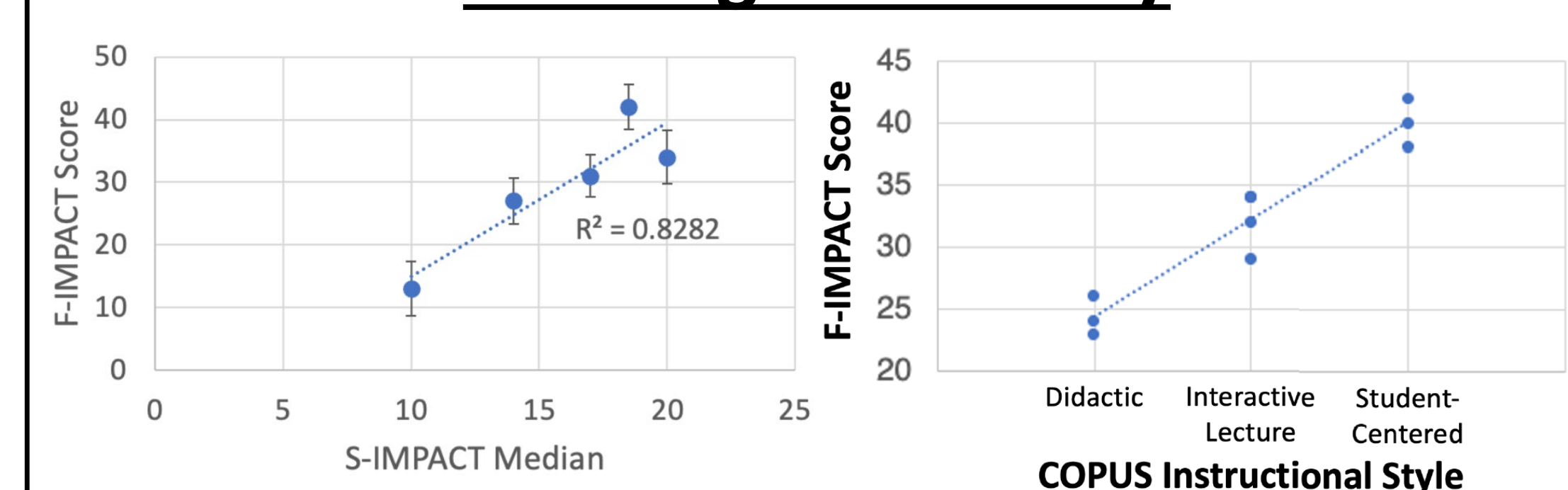


- Comparing STEM and Social Science courses
- Faculty known for **“didactic”** instruction (Department 1) and **“student centered”** instruction (Department 2)
- Department w/ mix of **“didactic”** and **“student centered”**



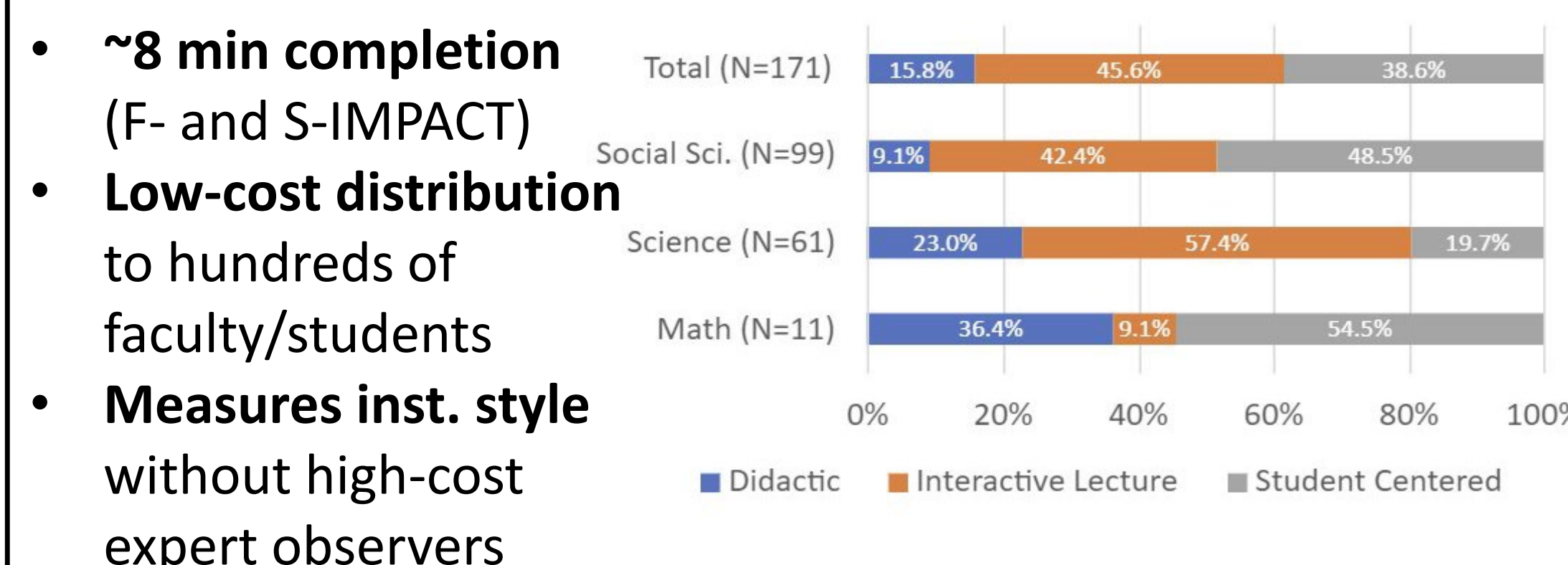
- **Women are more likely to use HIPs in their courses**
- **Black women have highest use of HIPs**
- Matches literature, **reduced bias**

Convergent Validity



- F- and S-IMPACT **correlate w/ each other**
- F- and S-IMPACT **correlate w/ COPUS “instructional style”**

Instructional Style



We **can** measure instructional style at scale

Learn more: stemtrail.unomaha.edu

NSF DUE #2021315, #2417479

