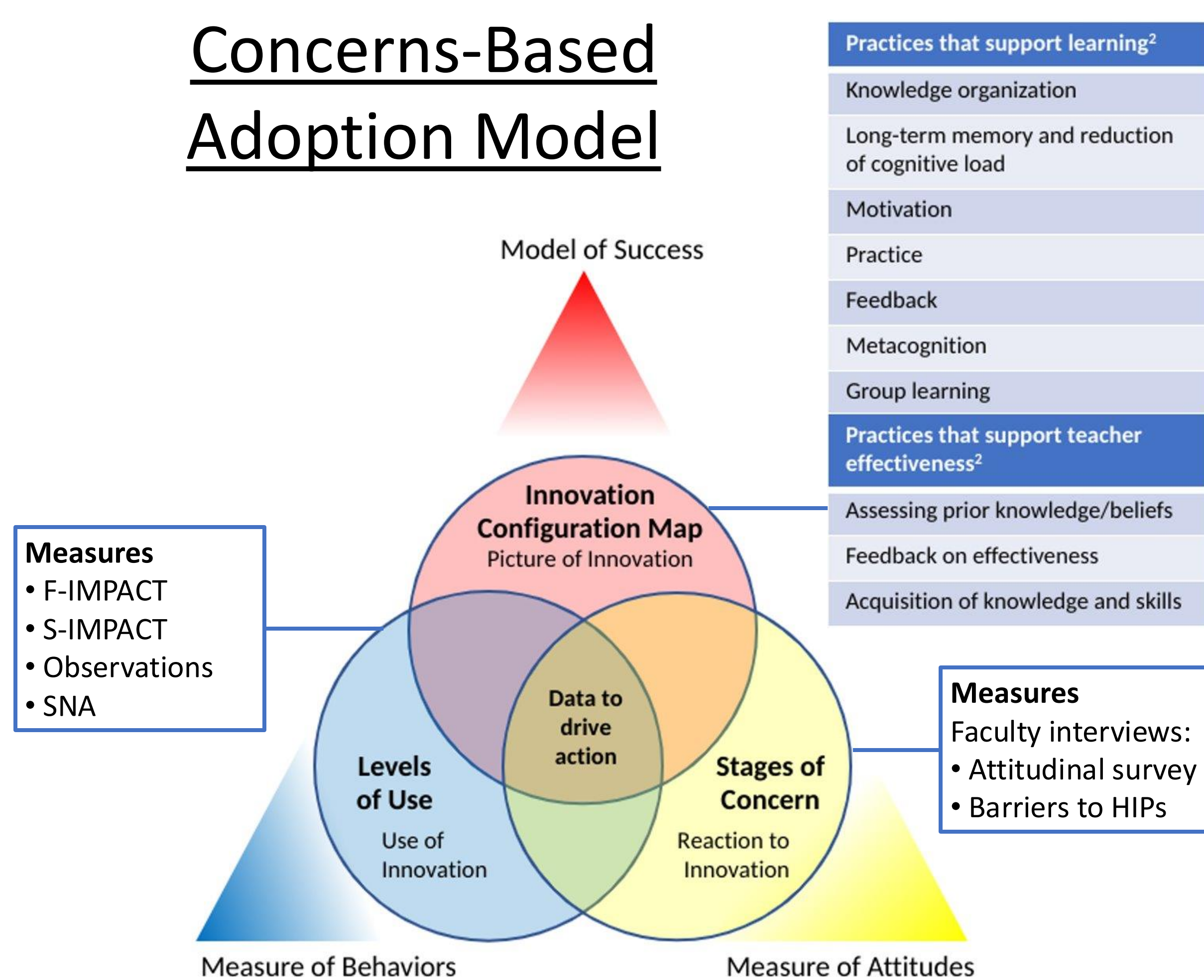




UNO STEM TRAIL CENTER

This project is using a **Concerns-Based Adoption Model** (CBAM) as the basis for acquiring data from stakeholders about the use of **high-impact teaching practices** (HIPs) in general education science, mathematics, and social science (STEM) courses at the University of Nebraska Omaha. Specifically, the project has been determining the current **types and prevalence of research-verified HIPs used** in these courses and is identifying **faculty concerns and barriers to their broader adoption**. Key findings from this work are being used by both administrative and faculty leaders to allocate resources based on need, potential for measurable impact, and in a manner that addresses faculty concerns and attitudes.

Concerns-Based Adoption Model



Research Questions

1. What HIPs are faculty using in their general education science, math, and social science courses, and what is their prevalence?
2. What faculty-perceived barriers/concerns exist with respect to adoption of HIPs?

Measures of Prevalence

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, pencil, 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	☐

IMPACT Score (%)

Individual **action**

- Inventory of Methods and Practices Associated with Competent Teaching (IMPACT) - Measures faculty **action**
- Two versions:
 - Faculty self-report (F-IMPACT)
 - Student Observation (S-IMPACT) – *Potential SET replacement*

Prevalence of and barriers to the adoption of high-impact practices in the teaching of general education STEM courses

Christopher Moore, Physics Department
Julie Pelton, Sociology Department
Sarah Edwards, Teacher Education Department

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

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



4

Reliable

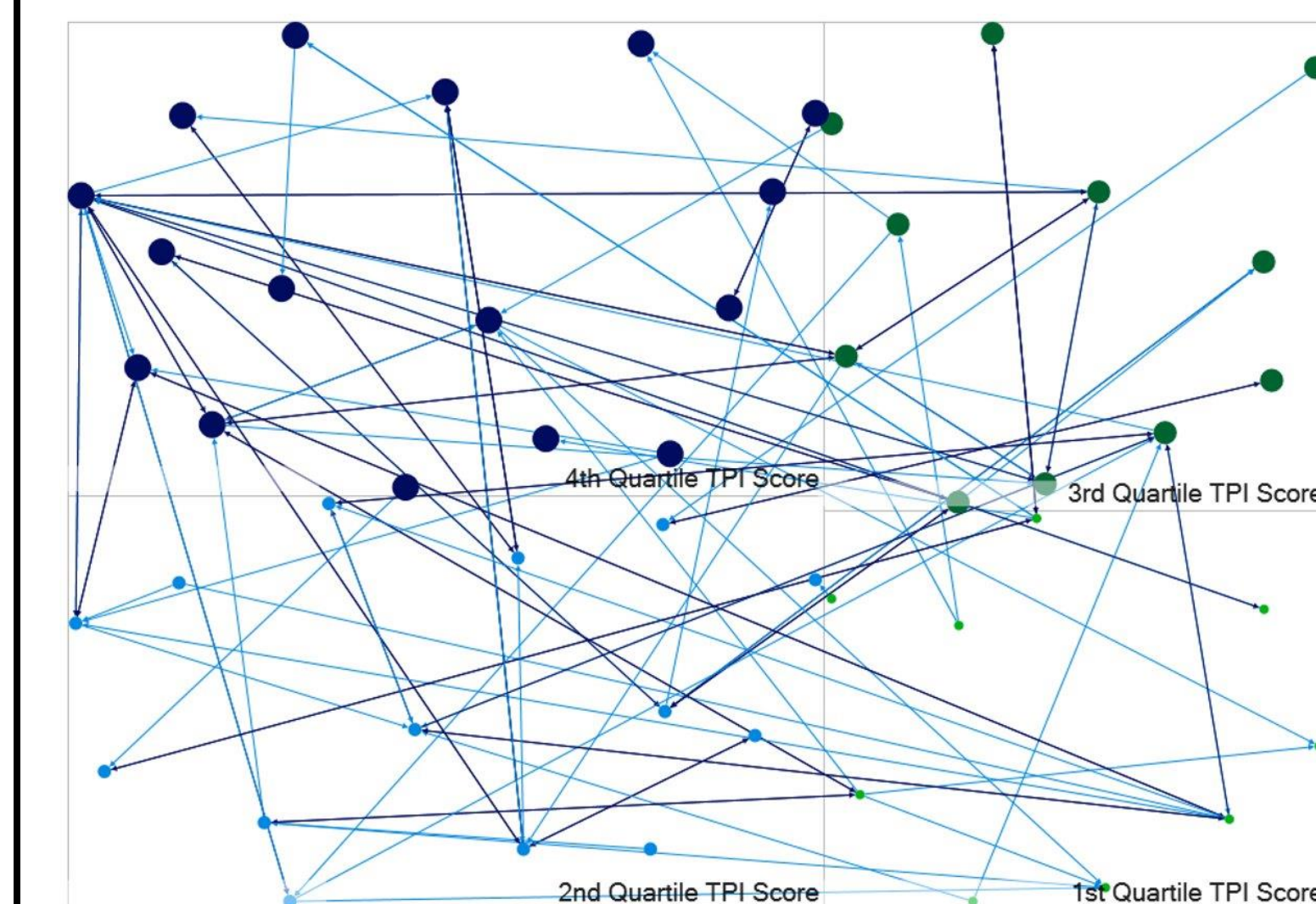
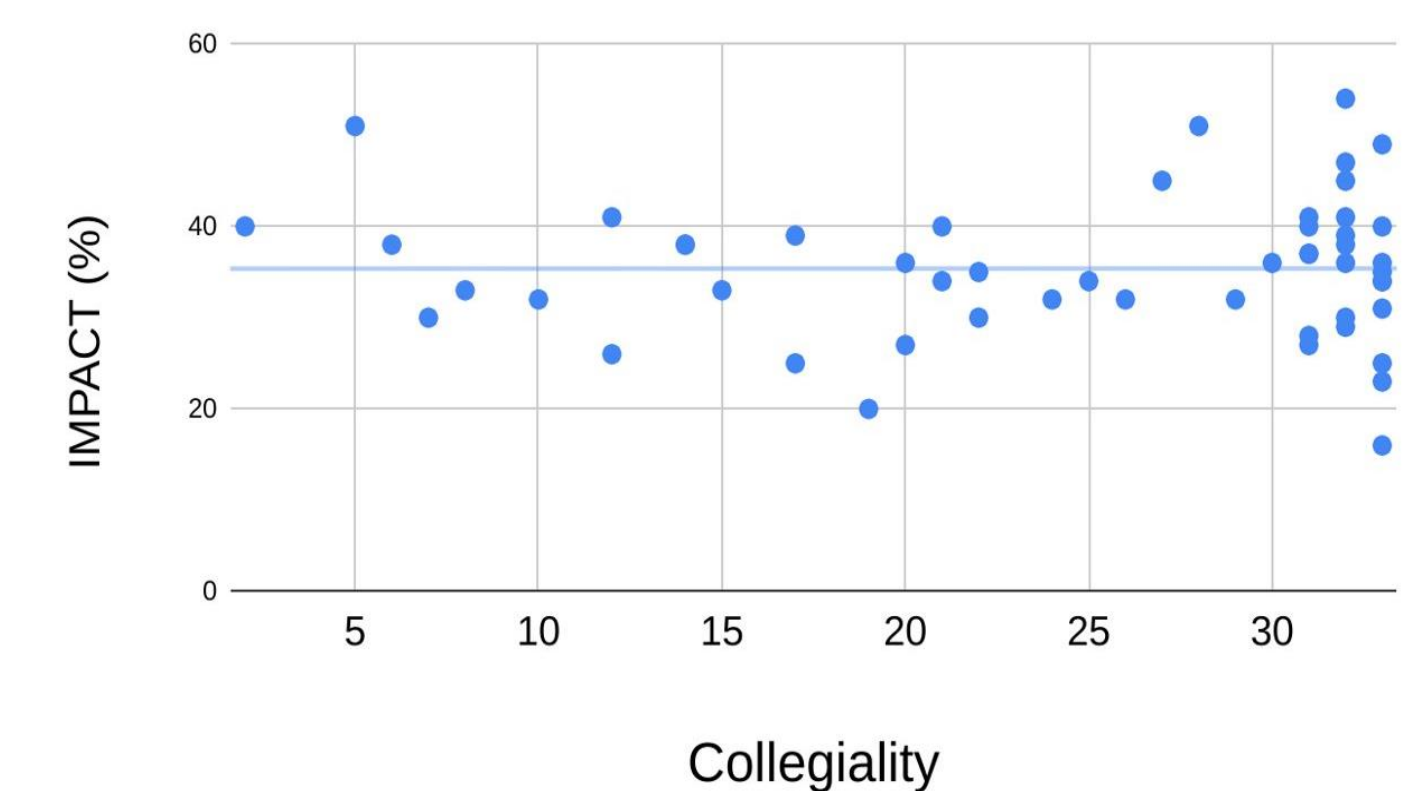
Consistent results so that instructors know change will make a difference

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Social Networking Analysis

Do faculty interactions about teaching **correlate** with greater use of HIPs?

NO!



- 1st quartile HIP users are reporting teaching interactions w/ 4th quartile users.
- Preliminary results suggest **they are** talking about HIPs
- **Why no changes in behavior?**

A strong social network is a **necessary** but **not sufficient** condition for diffusion of HIPs.

Barriers to Use

Barriers	Factors related to decisions made by the university (i.e., institution) that are outside of the control of instructors.
Obstacles	Factors outside the control of individuals that prevent them from adopting change.
Concerns	Personal/individual factors within the control of individuals that prevent them from making improvements or engaging in change.

- Interviews - 13 participants from a stratified random sample
- Included adjuncts, instructors, and tenure-stream faculty
- Range of disciplines
- Instructors reported they would benefit from:
 - **access to a consultant** who supported curriculum development and implementation
 - **ongoing educational coaching**
 - **increased access to professional development** opportunities
 - **communities of inquiry** to discuss teaching strategies

Barriers

Resources

"I have forever used my own personal computer ... does [the university] have the ability to say hey, let us help you purchase a laptop?" (Adjunct)

Evaluations

"I requested [money] for a budget for that class. And that's not to pay me, that's to buy [resources for student experiences]" (Instructor)

"Yeah, instead of being able to sit down with someone and talk about that negative feedback, they rewarded me by removing the class from me." (Adjunct)

Obstacles

COVID-19

"... my evaluations were lower than what I had in the past, and so that was frustrating and disappointing to me." (Instructor)

Students

"one of the challenges is bringing students into college setting, and they're ill-equipped ... they don't know basic sentence structures." (Adjunct)

Concerns

Time

"You have to develop that and that and that takes, that takes some time. And so, where do you fit that time in?" (Tenured)

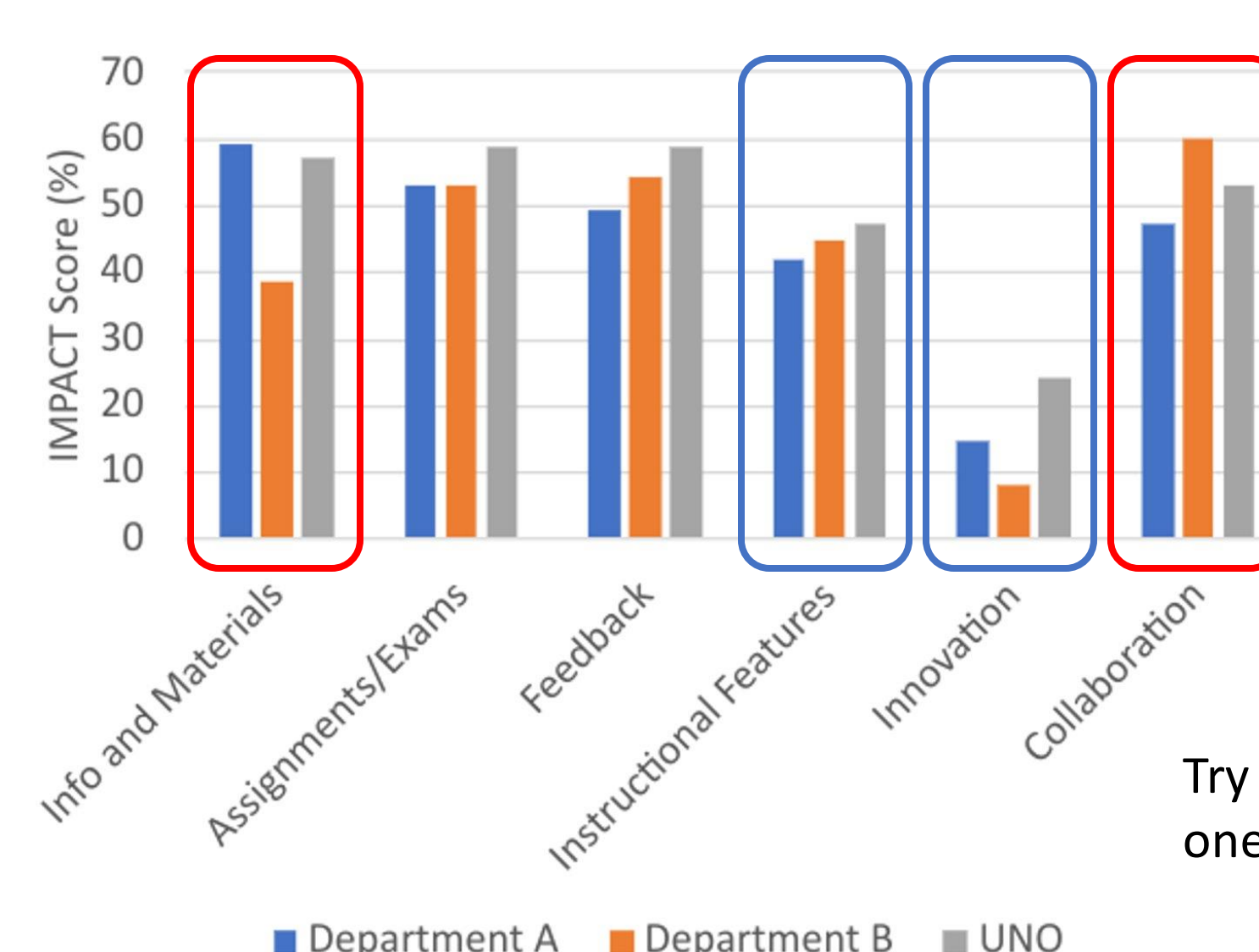
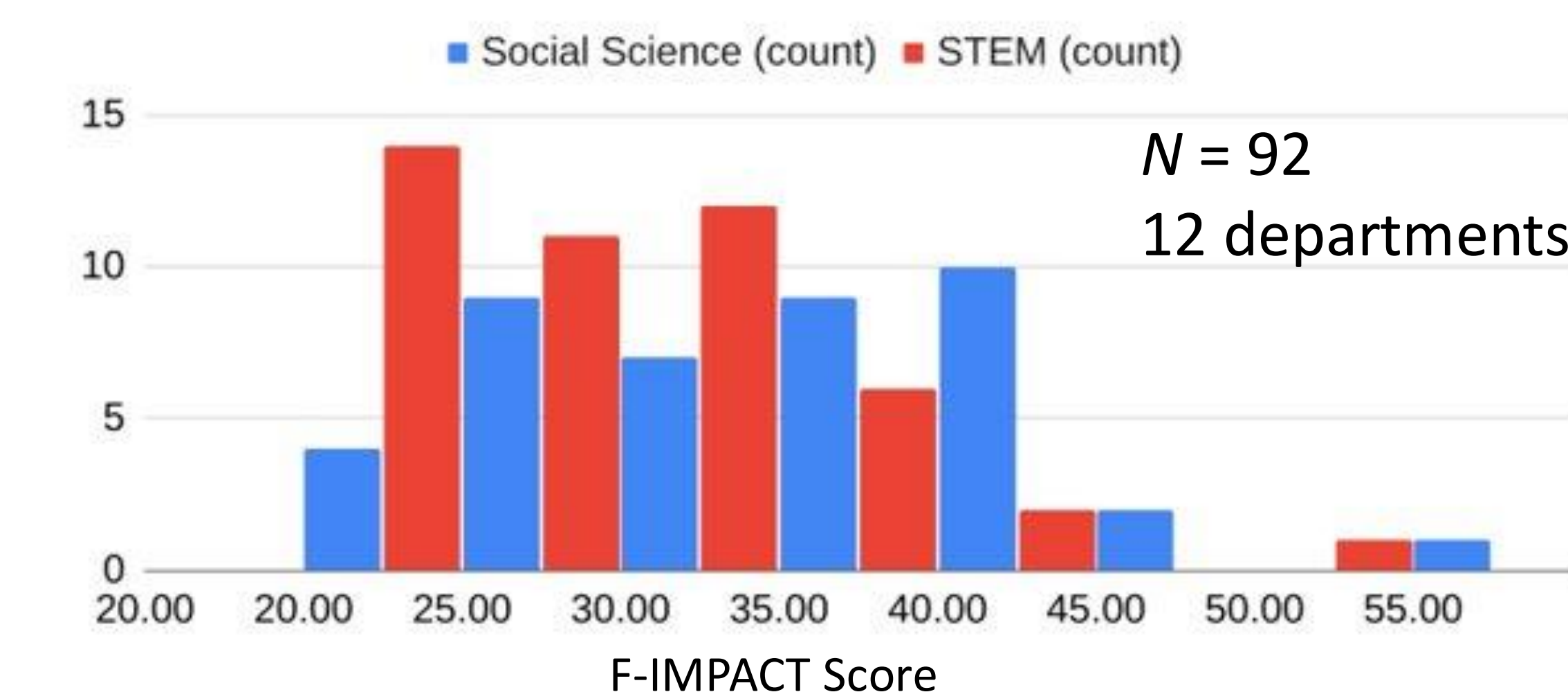
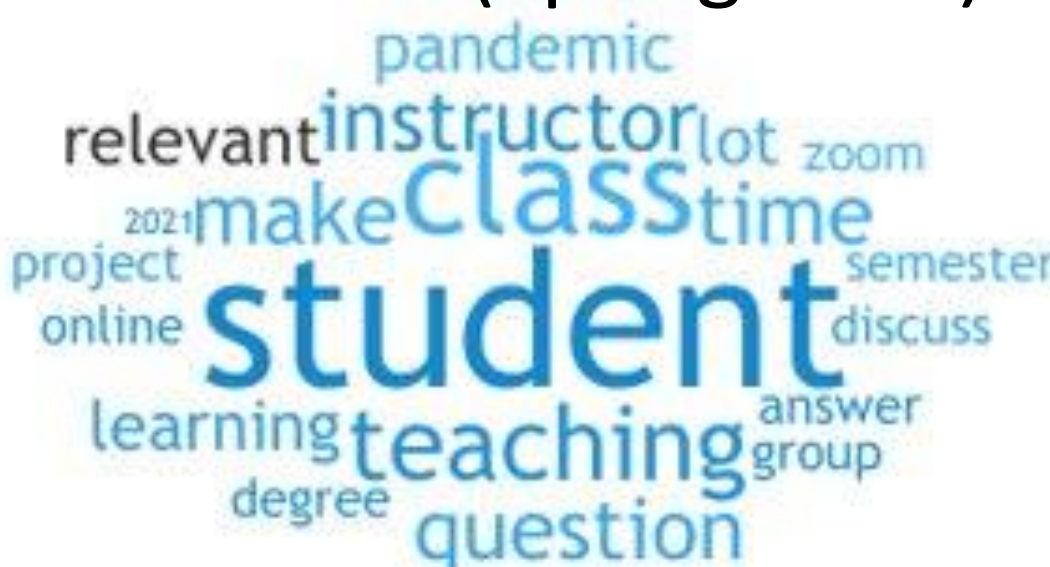
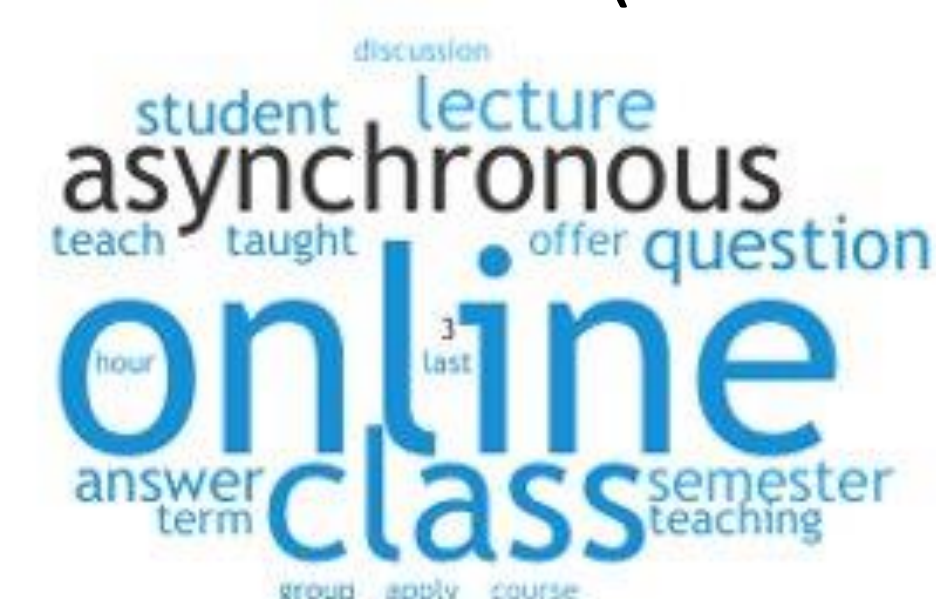
Workload

"It's definitely tricky if you're trying to do in the middle of the semester, while still doing your research pursuits" (Tenured)

- Modified from the Teaching Practices Inventory (TPI)
- **Validated for in-person and online courses**

Unmodified TPI (Fall 2020)

F-IMPACT (Spring 2021)



Identify areas needing improvement or strengths at an **individual**, **department**, and **institutional** level

Try the F-IMPACT for one of your courses!



Learn more: stemtrail.unomaha.edu

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