



Investigating the Use of Measures for Mathematics Instructional Improvement

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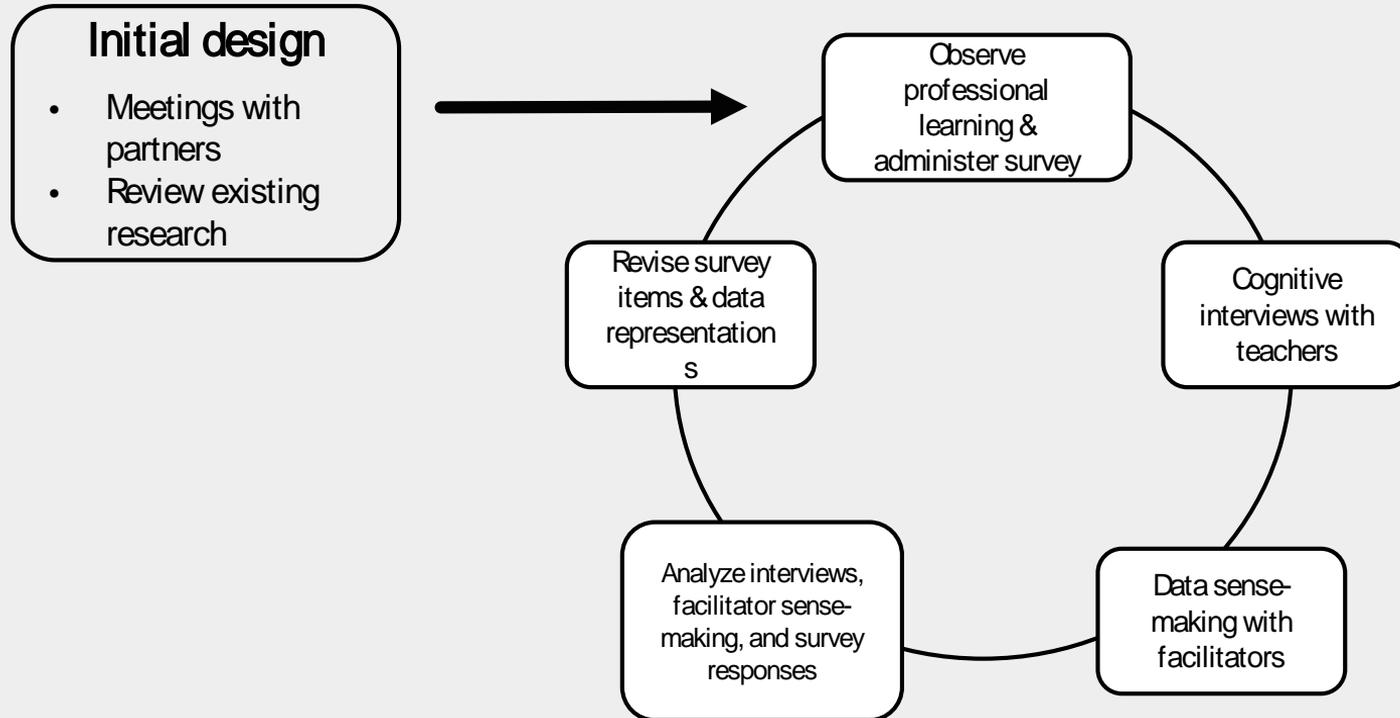


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Validity as the degree to which accumulated
evidence and theory support specific
interpretations of a score for a given **use**

Intended





Intended



Actual



Intended

≠

Actual



Actual

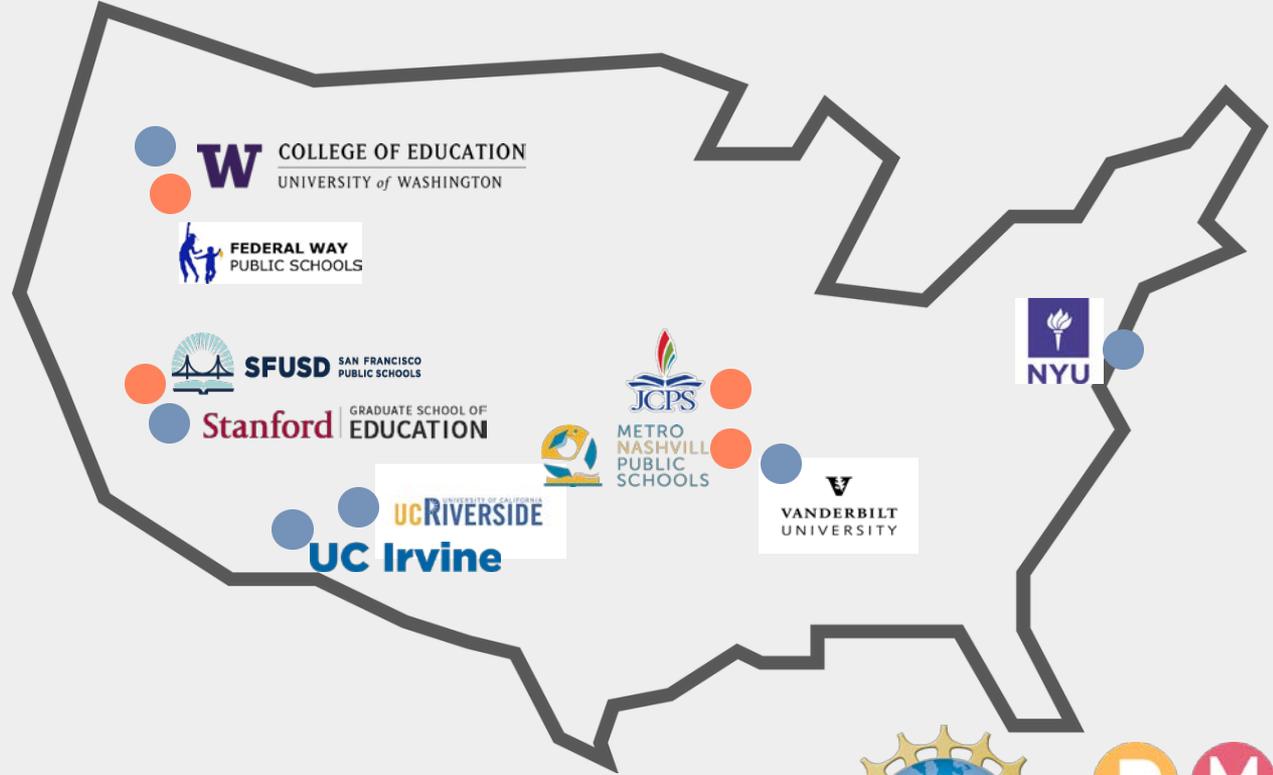


the current project: 3 research-practice partnerships working to improve secondary mathematics teaching and learning

Develop a system of practical measures, data representations & routines to enable the improvement of supports for teachers' learning



Investigate the use of the measures, data representations & routines in context



System of Practical Measures, Representations, & Routines

Practical measures of key aspects of the classroom learning environment that research has linked to *student* learning



Practical measures of key aspects of professional learning supports (e.g., collaborative professional development, one-on-one coaching) that research has linked to *teacher* learning



social routines



multiple users
(e.g., teachers, PD
facilitators, system leaders)





Clarifying the focal issue: Improving the quality of mathematics teaching and student learning at some scale

worthwhile, rigorous learning goals for students

- make sense of mathematics, reason about mathematical ideas
- view themselves and others as people who 'do' mathematics

vision of teaching to enable students to attain these goals

- select and implement cognitively demanding tasks
- elicit and build on students' contributions to achieve mathematical agendas
- press and support students to elaborate their reasoning, connect their ideas



Practical Measures of Key Aspects of Classroom Learning Environment

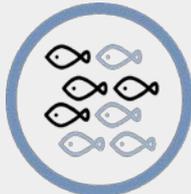
- Quick, easy to administer (e.g., surveys are 2-3 minutes, electronic or paper form)
- Developed in **partnership** with students, teachers, coaches, professional learning facilitators, and district math specialists



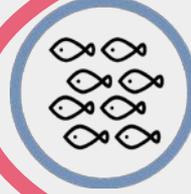
rigor of the task



launch

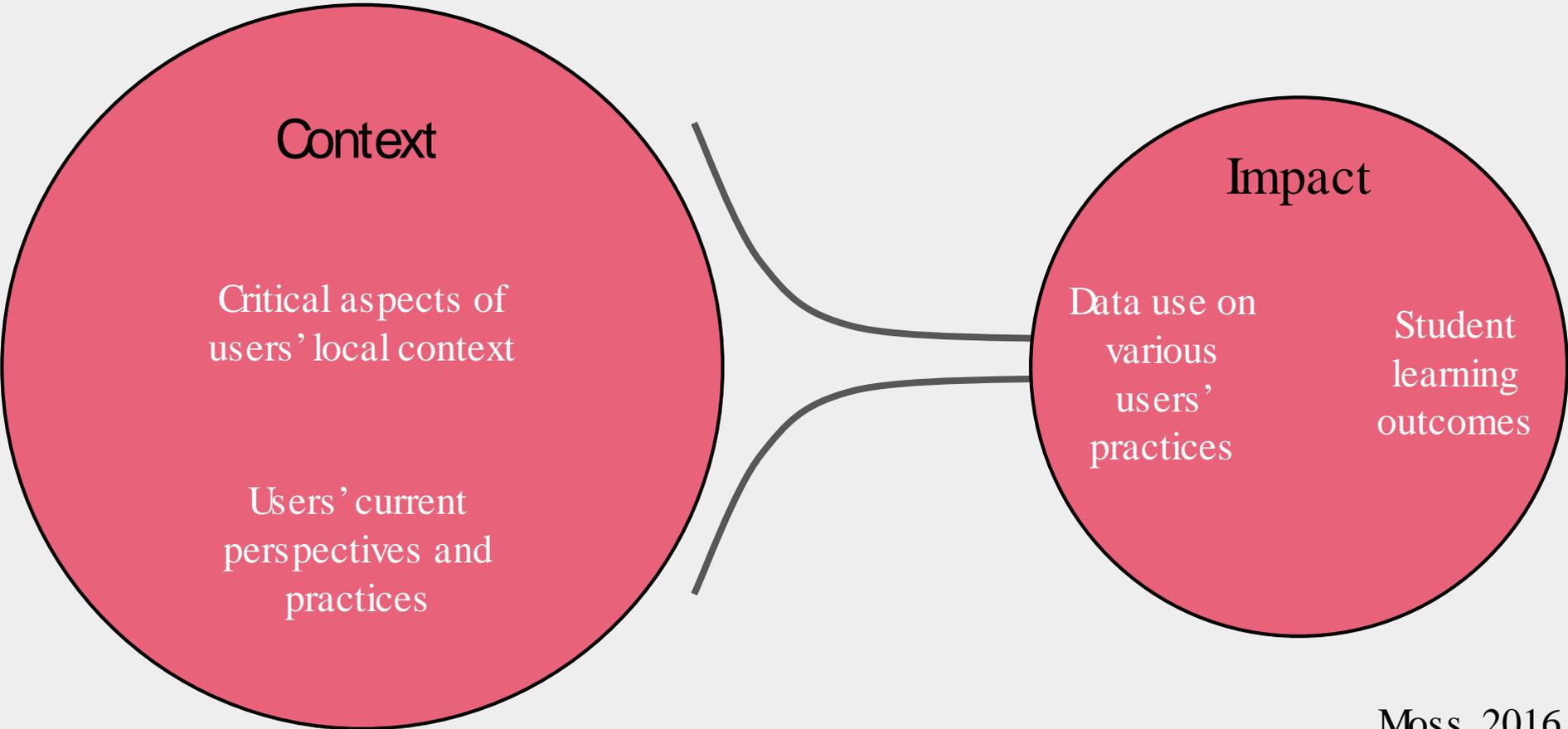


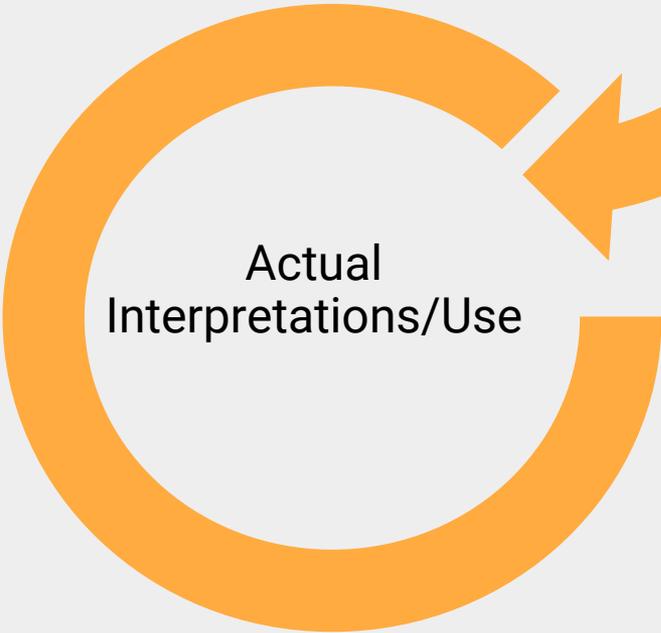
small-group
work



whole-class
discussion

Understanding Actual Interpretations

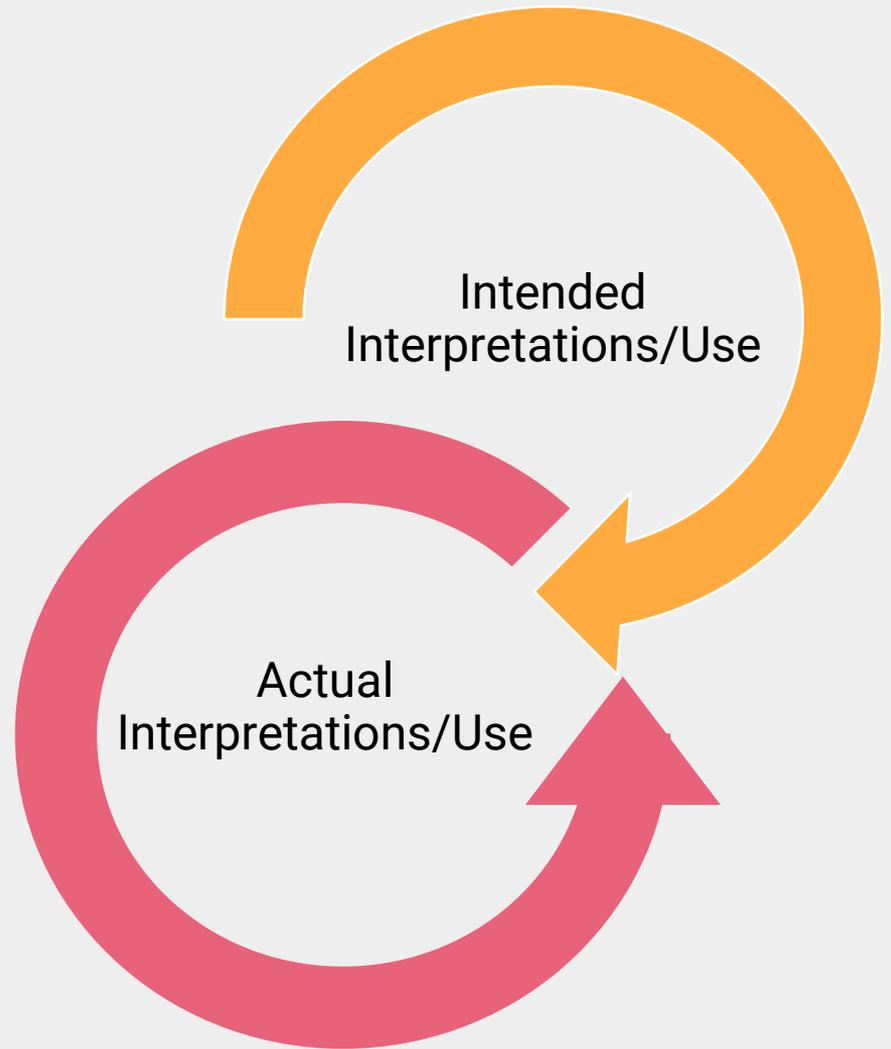




One and done...

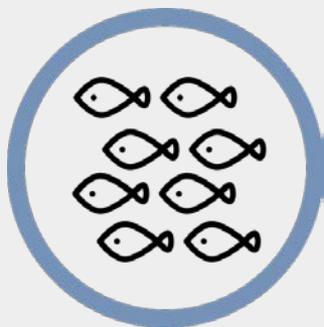


..Ongoing

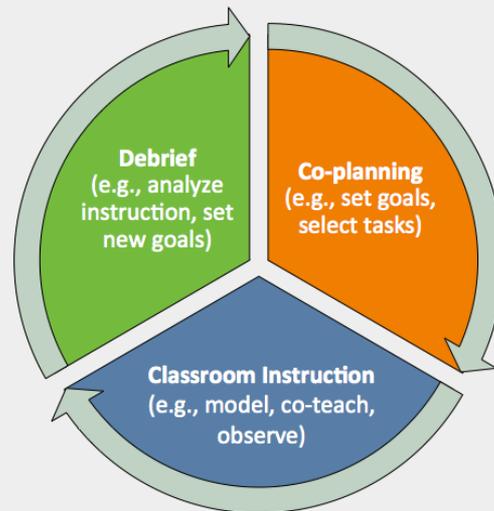




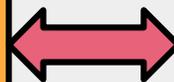
Example from Classroom Measures



Whole Class
Discussion



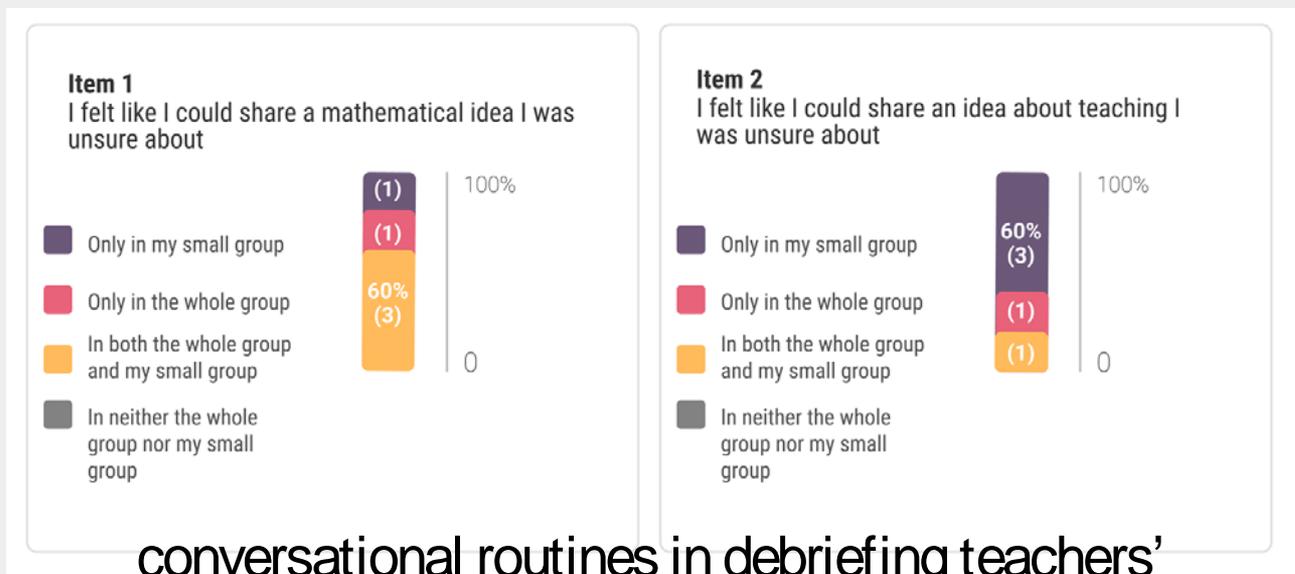
12 episodes:
Enhanced debrief



14 episodes:
Missed opportunity



Example from Professional Learning Measures



conversational routines in debriefing teachers' responses



Collaborative Professional Learning



Intended

+

Actual



Practical Measures, Routines and Representations for Improving Instruction

<https://www.pmr2.org/>



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