



Developing A System of Practical Measures, Routines and Representations to Inform and Enhance Middle-Grades Mathematics Instructional Improvement Initiatives

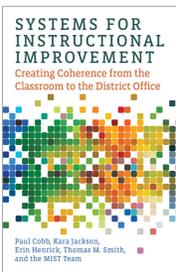
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Goal

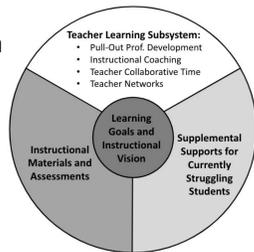
To develop a **system of measures, routines, and representations** that can support the **implementation of strategies** aimed at improving the quality of middle-grades mathematics teaching, and thus student learning.

Theory of System-Wide Improvement



Prior research: Identify potentially productive instructional improvement strategies

- o Coherent instructional system
- o School leadership
- o District leadership



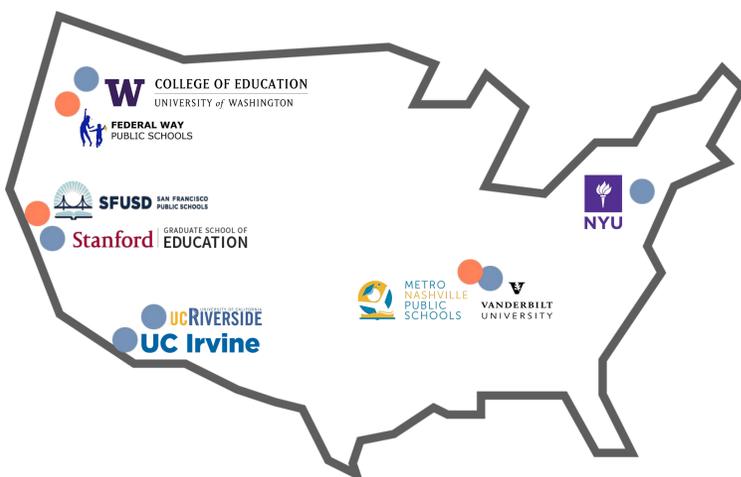
Current research:
Reliably implement improvement strategies

Measures for Improvement

- Unobtrusive and minimally burdensome to users
 - o Quick to administer (< 3 minutes)
 - o Easy to analyze
 - o Enable practitioners to assess and adjust their practices
- Intended for improvement work, not for accountability purposes
- May also serve as **levers for improvement**

Partnerships

Our team is comprised of three Research-Practice Partnerships (RPPs) between U.S. school districts and universities.



Developing a System of Measures (and Routines & Representations) in Support of a Theory of Improvement

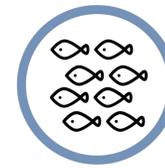
Measures of Key Aspects of High-Quality Mathematics Instruction



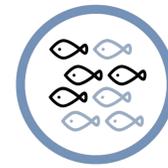
rigor of the task
A rubric designed to be used by a coach or district leader with a teacher to assess and discuss the rigor of the task(s) used for a specific lesson



launch of the task
A short (1 minute) student survey designed to be administered immediately after the launch of (introduction to) a task, to assess whether students can begin to work productively on the task



whole-class discussion
A short (2-3 minute) student survey that provides information about students' experiences with whole-class discussion in a specific lesson



small-group discussion
A short (2-3 minute) student survey that provides information about students' experiences with key aspects of discussion during small group work

Measures of Key Aspects of High-Quality Professional Learning

This work is in progress. Our team is currently designing, piloting, and revising measures of **collaborative professional learning** (e.g., teacher collaborative time; collective professional development sessions) and **one-on-one coaching**.

Infrastructure for Storing, Analyzing, and Representing Data

edsight.io



EdSight provides users with an opportunity to investigate data from the measures for individual classrooms and multiple classrooms over time.

A coach / district leader-facing snapshot of the EdSight platform with data from administrations of the survey with a group of 6th, 7th, and 8th grade teachers over time:



Multiple Users and Uses

The measures & representations were designed to be meaningful to **users** at different levels of the system:



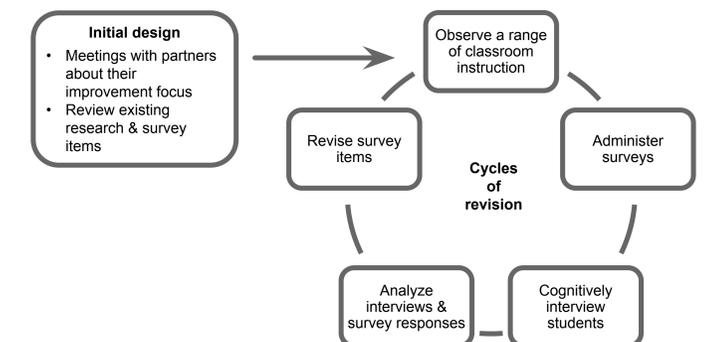
The measures & representations have been **used** to inform the implementation of a range of improvement strategies in our partner districts, including:

- (1) curriculum guide writing initiative
- (2) one-on-one coaching
- (3) professional development program

Attending to Issues of Rigor

In Design

The measures were developed through multiple rounds of design, analysis and revision:



In Use

Systematically investigating the inferences made and actions taken by the various users in relationship to the organizational conditions, supports, and individuals' current perspectives and practices

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