Measurement Study

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Context

There is a need for high-quality measures of teachers’ instruction that align with expectations in new college- and career-readiness standards.

• These measures are needed for our intervention study later in the project.
• More common/standard measures of instruction would also benefit the field (both research and practice).
• The purpose of this portion of the work is to develop and provide initial validity and reliability evidence for survey and observational measures of teachers’ instruction.
Questions driving this study

• What is the validity of teacher reports of their instruction for a single lesson? Over a semester?
• What is the reliability of content analyses of assignments and assessments? Of classroom observations?
• Do any of the above differ based on subject area?
Data Sources

• Teacher logs and surveys
  – Based on revised Surveys of Enacted Curriculum content languages in mathematics and ELA
  – Instructional content defined at the intersection of topics and levels of cognitive demand
  – Also includes questions about standards for mathematical practice and text type/complexity

• Teacher observation protocol
  – Based on the logs and surveys
  – The rater breaks the lesson into smaller activities, of no more than 10 minutes a piece, and then codes each segment with the SEC topics and cognitive demands
The Revised SEC

- Convened expert three-day meeting in fall 2015
- Revised SEC surveys and content taxonomies against Common Core and TEKS standards
- Revisions included:
  - Cognitive demands revised from 5 levels to 3 (ELA) and 7 (math)
  - List of topics in each subject updated to be inclusive of all content in CCSS and TEKS grades K-12. Final: 137 topics in ELA, 228 topics in math
  - Math practices section added to mathematics SEC teacher survey
  - Text complexity section added to ELA SEC teacher survey
Data Collection

• Pilot of surveys in ~60 classrooms (30 math, 30 ELA)
  – Biweekly log surveys
  – End-of-semester surveys
  – Two weeks’ worth of student assignments and assessments (non-scored versions)

• Pilot of observations in ~40 classrooms (20 math, 20 ELA)
  – Video/survey of a single lesson’s instruction
Findings/ Anticipated findings

• Findings:
  – To what extent do teachers’ reports of their instruction based on a single lesson correspond to what an expert observer identifies in that lesson?
  – To what extent do teachers’ reports of their instruction on a biweekly log survey correspond with their reports based on an end-of-semester survey?
  – How reliably can expert raters evaluate teachers’ instruction based on our observational protocol?

• Anticipated findings
  – I expect that raters will be able to reliably code teachers’ assignments and assessments.

• Anticipated working paper date
  – January 2017
Connection to FAST Program

• For our intervention to work, we need to have good data on what and how teachers are teaching.
• The goal of the measurement study is to develop instruments that allow us to gather the information we need.
• Our instruments may also be able to be used by other researchers and school and district policymakers.