

Organizing and Examining Currently Available Quantitative Assessments

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PI: Jonathan D. Bostic, Bowling Green State
University
Co-I: Michele Carney, Boise State University



NSF ECR PI Convening Roundtable
Rigorous Research Methods
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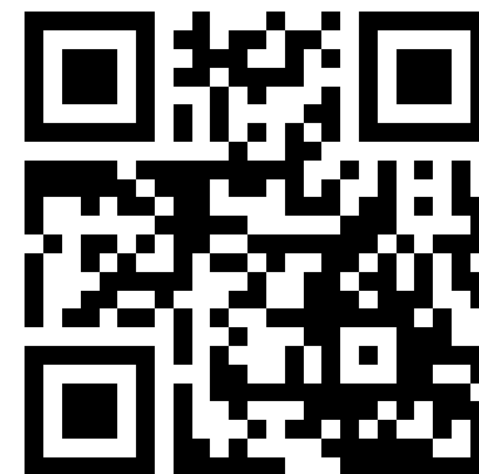


V-M²Ed

Validity Evidence for Measurement
in Mathematics Education

San Antonio, TX April 2 – 3, 2017

measuresinmathed.org



Need for Conference

- There are few syntheses of quantitative tools available for mathematics educators to employ and even fewer discussions of the validity evidence necessary to support the use of measures in a particular context.
- “Evidence of instrument validity and reliability is woefully lacking” (Ziebarth, Fonger, & Kratky, 2014, p. 115) in the literature.
- To make matters worse, validity and evidence for validity for quantitative tools and measures are not necessarily conceptualized or defined consistently in the research literature (e.g., Lissitz & Samuelsen, 2007; Mislevy, 2007).
- Hill and Shih (2009) reported that only 8 of 47 studies published in the *Journal for Research in Mathematics Education* provided any evidence related to validity and the majority provided only psychometric evidence.

Conference Goals

- Promote conversation and collaboration among researchers with expertise in mathematics education and measurement.
- Identify a set of recommendations for the elements of a purpose statement with examples.
- Develop a set of example validity arguments situated in mathematics education.

Conference Purpose

- To contextualize current conceptions of validity within the field of mathematics education with a focus on an argument-based approach to validation.

Associated Publications and Presentations

- Bostic, J. (2017). Moving forward: Instruments and opportunities for aligning current practices with testing standards. *Investigations in Mathematics Learning*, 9(3), 109-110.
- Bostic, J., Carney, M., Krupa, E., & Shih, J. (in press). *Exploring and examining quantitative measures* (Working Group). In (Eds.), Proceedings for the 39th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (pp. XXXX-XXXX). Indianapolis, IN.
- Bostic, J., Carney, M., Krupa, E., & Shih, J. (2016, October). *Exploring and examining quantitative measures*. In M. Wood, E. Turner, M. Civil, & J. Eli (Eds.), Proceedings for the 38th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (pp. 1641-1647). Tuscon, AZ.
- AERA presentations are currently under review.
- Edited book proposal under review. Twenty chapters authored by V-M²ED participants.

Mathematics Assessment Repository

- During 2016, we worked to create a measure repository with information related to different assessments that have been used in large-scale studies of mathematics education.
- We will update this repository at the 2017 PME-NA meeting (October 2017).



<https://goo.gl/uhYAAT>

Questions to consider

- How do other fields add and maintain useful information about quantitative measures for use across diverse contexts within a field of study (e.g., math, science, and STEM)?
- What information is helpful for other scholars who might be interested in this repository?
- Who maintains (and funds) such a repository?
- Is a current repository describing specific quantitative measures valuable for fields to execute work?