Examining the Psychometric Properties of the Standards Assessment Inventory

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ABSTRACT

The purpose of this article is to assess the psychometric properties of the Standards Assessment Inventory (SAI) in order to confirm its construct validity using modern statistical procedures. The SAI is a 50-item assessment designed to measure the degree to which professional development programs align with seven factors related to “high quality” teacher learning (Learning Forward, 2011). These seven factors are Learning Communities, Leadership, Resources, Data, Learning Design, Implementation, and Outcomes. In their original evaluation of the factor structure of the SAI, Learning Forward (2011) tested one model containing all 50 items loading onto a single factor, and seven individual factor models, each containing one of the seven standards of professional development. To date there has been no published report related to the psychometric properties of a seven-factor model, which allows each of the seven standards to covary. The initial test of this model produced a poor fit, after which a series of modifications were attempted to improve the functioning of the SAI. After all meaningful modifications were added, the overall fit of the SAI was still outside of a range that would suggest a statistically valid measurement model. Suggestions for SAI modification and use are made as they relate to these findings.

KEYWORDS
Measurement Validity, Professional Development, Standards Assessment, Standards Assessment Inventory

INTRODUCTION

A significant portion of school district expenditures go towards developing and maintaining effective practices pertaining to classroom instruction for teachers (Zepeda, 2012). Well-constructed professional development programs are essential in aiding teachers to achieve higher standards of learning and development (DuFour & DuFour, 2013). To engage the adult learner, professional development programs address certain key components (Learning Forward, 2011). All professional development experiences attempt to ensure that teachers have the necessary school environment and the proper support levels to be successful in the classroom (Zepeda, 2012). Furthermore, professional development experiences should be intensive, experiential, connected to the classroom, collaborative through data, research, reflective practices, and sustainable during implementation. Additionally, professional development efforts should have the proper leadership to support and nurture the work teachers are attempting to accomplish. As such, the Learning Forward Standards for Professional Learning provide a framework for developing and assessing professional development in schools that addresses these areas.

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Standards-Based Professional Learning: A Framework for Evaluating Professional Development

In an era of accountability and a climate of heightened expectations for outcomes from professional learning, evaluations of professional development are necessary to assess teachers’ knowledge, skill levels, behavior, and student outcomes, as well as to document the quality of program practices and services (Desimone, 2009). The foundation and guidance for evaluating a participating school district’s professional learning can be found in Learning Forward’s Standards for Professional Learning and its corresponding Standards Assessment Inventory (SAI) (Learning Forward, 2011). As the Standards for Professional Learning outline, the questions pertaining to what educators need to learn and what they will do with their learning are the foundation for a professional learning evaluation plan.

The Standards for Professional Learning (Learning Forward, 2011) can guide the planning and implementation of educator learning that makes a significant difference for schools, educators (teachers and administrators at all levels), and students. Learning Forward, is a nationally recognized organization dedicated to supporting high quality professional learning for educators and fostering “high-quality” professional development. Learning Forward suggests that professional development programs be aligned with and measured by state academic content standards, student achievement standards and assessments, as well as the following standards: Learning Communities, Leadership, Resources, Data, Learning Design, Implementation, Outcomes (see Figure 1). These domains are a compilation of the literature detailing characteristics of professional learning that compose the seven factors found within the SAI (Garet, Porter, Desimone, Birman & Yoon, 2001; Smith & Gillespie, 2007).

The initial analysis of the SAI published by Learning Forward (2011) tested the functioning of its 50 items in the context of a single factor model containing all items and then as individual single factor models isolating each of the seven standards. Both the total and individual single factor models demonstrated good fit indicating sound psychometric qualities. Justification for conducting further psychometric assessment of the SAI also relates to a technical consideration associated with the original analysis. Although the developers of the SAI (Learning Forward, 2011) did assess its functioning within a total one factor model containing all 50 items and then seven individual one factor models for each professional standard, a single model containing all seven professional standards has not been assessed. Due to the interactive and potentially overlapping nature of many of the SAI subscales, it would make logical sense to assess the way in which these subscales function together rather than separately and observe their model fit.

Although the contemporary literature would suggest the use of a confirmatory approach to establish the factor structure of the SAI, no such studies utilizing this approach can be found in the literature. Thus, it is not clear how the seven-factor model would fit the population of teachers in this sample and how the 50 items perform in terms of their measurement of their proposed factor using a more technically appropriate psychometric procedure. Hence, the purpose of this study was to use confirmatory factor analysis to examine the seven factor-SAI model among elementary, middle, and secondary teachers.

METHOD

Participants
A large suburban public-school district in the northeastern United States was used for this study. During the 2015-16 school year, it contained 424 K-12 teachers and 5448 students. Of those students 83% were Caucasian, 10% African American, 3% Hispanic, 2% Asian, and 2% American Indian, with 39% receiving free or reduced-price lunch. Within the district there are seven elementary schools (K-5), one middle school (6-8) and one high school (9-12). During the 2014-15 academic years state
Building Connections Between Teacher Education Candidates and Urban Middle School Students Through Social Action: A Community Literacy Partnership
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A Self-Study of Factors Affecting the Collaboration Between University and School Professionals
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