Abstract

Es una realidad que los estudiantes en los estados unidos están cambiando and a sizable population is now comprised of English Language Learners (ELLs). In 2009, 21% of 5- to 17-year-olds in the United States (or 11.2 million) were ELLs (NCES, 2011). Tambien, ELLs' mathematics achievement is disproportionately lower than that of their non-ELL peers (Abedi & Gándara, 2006). Finalmente, data from the 2008-09 school year illustrate that the overwhelming majority (77.2%) of ELLs are Spanish-speakers (Téllez, 2010). Considerando that most Spanish-speaking students in the U.S. are Latina/os, it is important to understand the complex interdependence between language and mathematics and how such relationship mediates assessment measures of mathematical understanding (Martiniello, 2008). Guided by a perspective of cultural relevance, this paper will exemplify one formative assessment instrument that measures language, literacy, and mathematical understanding as a promising possibility for exploring the inextricable link between culture and assessment.

The mathematics underachievement of Latina/o ELLs is a matter of national importance. When assessment measures are standardized test scores, it is important to qualify that any test “that employs language is, in part, a measure of language skills” (AERA, APA, NCME, 1999, p. 91). Therefore, when Latina/os’ mathematical understanding is assessed, it is necessary to discern the relationship between proficiency in: English-language, academic literacy and mathematical understanding. For Latina/o ELLs, degree of English-language proficiency (ELP) is an influence on mathematics assessment scores. Generally, Latina/o ELL students are immigrants or the U.S.-born children of immigrants and represent a wide variety of linguistic backgrounds that span from emergent to proficient in ELP. Additionally, assessments of Latina/o ELLs’ mathematical understanding must consider measures of academic literacy. Academic literacy is a subset of academic language, which can be understood as an overlapping landscape of discourses, registers, and genres. Academic language intersects with ELP and given that standardized mathematics assessments are primarily administered in English, Latina/os are simultaneously evaluated on their mathematical understanding, academic literacy and ELP. Current assessment approaches raise uncertainties as to whether scores are more indicative of mathematical understanding or English language and literacy conventions (AERA, APA, NCME, 1999).

Designing formative assessments that are culturally valid instruments requires the considering the complex relationship between Latina/os’ mathematical understanding, academic literacy, and English language proficiency. Although capturing the conceptual essence of validity, truthfulness, is relatively straightforward, in application, forms of validity are characteristically isolated from assessments (Koretz, 2008). Crooks, Kane, & Cohen (2008) articulate the dependency of validity on human judgment as follows, “difficult to work with in practice” and challenging “to carry out, report, and defend” (p. 151). One poignant example of the complex challenges of capturing assessments’ degree of truthfulness is cultural validity. As an overview, cultural validity refers to the effectiveness in
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which assessments address the sociocultural influences that shape student thinking and the ways in which students make sense of and respond to items (Solano-Flores & Nelson-Barber, 2001). By presenting one assessment instrument that measures Latina/os’ language, literacy, and mathematical proficiency, the inextricable link between culture and assessment is centralized.

References


