Abstract

English language learners (ELLs) must take the mathematics portion of state standardized tests regardless of their time spent in U.S. schools. This practice follows the misconception that mathematics is a ‘universal language’ and less language dependant, however, a significant performance gap between non-ELLs and ELLs on high stakes mathematics tests persists and must be addressed. In order to investigate the impact of language proficiency on high stakes test performance a cross-sectional study was conducted. The study included item performance data, by group, for 24,693 seventh and eighth grade students who took the 2007 and/or the 2008 mathematics Michigan Education Assessment Program (MEAP) assessment, and a questionnaire completed by 16 seventh and eighth grade participants for triangulation. The item performance data set was analyzed using a logistic regression model to determine the interaction effects between ELLs and non-ELLs based on item type, item language, and item strand. Cross tabulation, content, descriptive, and frequency analyses were conducted on the questionnaire responses. Findings from the logistic regression analyses show that the ratio in the odds of passing an item for ELLs and non-ELLs is affected by both whether that item was a computation or word problem, and also if a non-linguistic feature was present with p <.0001. The difference in passing rate for non-ELLs and ELLs was not affected by the GLCE Strand. The majority of the 19 words identified as confusing or unfamiliar on the questionnaires were context-specific or technical mathematics language features, only one of which was circled by an ELL. Results from this study have important implications for classroom instruction, test design and score interpretation.