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Bilingual students' test-taking strategies in content subject assessments

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Abstract

This study examined the potential relationship among students' test-taking strategies, language proficiency and performance through an eye-tracking experiment. 71 university students with different levels of English proficiency attempted carefully selected questions on their Biology knowledge. Their eye movement behavior was captured during the process and analyzed using both summary statistics of eye movement measures and gaze transition consistency as measured in entropy using Eye Movement analysis with Hidden Markov Models (EMHMM) to infer their test-taking strategies, which were then correlated with test performance measured in accuracy and reaction time. Results generally showed that eye movement behavior was associated with performance. In particular, gaze transition consistency predicted performance beyond summary statistics of eye movement measures. However, language proficiency was not associated with eye movement behavior or performance. These results may imply that participants' moment-by-moment, flexible problem-solving strategies when taking the test would better predict their performance than their underlying language proficiency.