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Journal

Authors

Opfer, John
Kim, Dan
Sidney, Pooja
et al.

Publication Date

2018

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John Opfer

The Ohio State University, Columbus, Ohio, United States

Dan Kim

The Ohio State University, Columbus, Ohio, United States

Pooja Sidney

Kent State University, Kent, Ohio, United States

Charles Fitzsimmons

Kent State University, Kent, Ohio, United States

Clarissa Thompson

Kent State University, Kent, Ohio, United States

Abstract

East Asian students routinely outperform American peers in mathematics. One source of this learning gap may be linguistic, such as explicitly naming part-whole relations in fractions (e.g., of four parts, one in Korean vs. one-fourth in English). Our study examined whether adopting such language would improve American children's number-line estimates. To test this, 83 10-year-olds were read fractions using either Korean-style or English names over pretest, training, and posttest. In both conditions, number-line problems either had no landmarks, landmarks that matched the denominator, or landmarks that did not match the denominator. As expected, we observed a session by problem type interaction ($F=2.71$, $p<.05$), indicating that feedback improved accuracy most for problems involving matching landmarks. Surprisingly, the effect of Korean naming was to reduce accuracy across all problems and test phases ($ps < .01$). Results offer an important warning against linguistic reform that may be harmful for American students.