

ZMATH 2015b.00622

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Notions of equivalence through ratios: students with and without learning disabilities.

J. Math. Behav. 37, 94-105 (2015).

Summary: Students with learning disabilities (LD) specific to mathematics historically underperform in foundational content such as rational number equivalence. This study examined the strategy usage and multiplicative thinking of three third grade children (i.e., Bill, a child identified as having a learning disability specific to mathematics, Carl, a child labeled as low achieving in mathematics, and Albert, a child labeled as typically achieving) before, during, and after participating in tutoring sessions consisting of student-centered pedagogy and equivalence tasks presented through an underutilized interpretation of rational number: namely, the ratio interpretation. Constant comparison analysis of the children's work during the tutoring sessions as well as responses to tasks during two clinical interviews seemed to indicate that all three children increased their use of viable strategies, with notable differences in the sophistication of the strategies as well as the level of multiplicative thinking utilized before and after the ratio-based tutoring sessions. Yet, Bill's continued use of rudimentary strategies reflects a need for continued research to investigate why the use of such strategies persists and how supporting the development of more sophisticated strategies (especially among children with LD) can be achieved.

Classification: F42 C42 C32 D72

Keywords: rational number concepts; learning differences; learning disabilities; equivalence; intervention
doi:10.1016/j.jmathb.2014.12.002