**ZMATH 2015d.00691**

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**A specific misconception of the equal sign acts as a barrier to children's learning of early algebra.**

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Summary: Children's equal sign understanding affects learning of early algebra. Most studies to date have focused exclusively on the presence of relational interpretations of the equal sign (e.g., "the same as" or "equal to"), without examining how different types of non-relational interpretations affect learning. Children's (3rd and 5th graders; $M$ age = 9 yrs, 11 mos) equal sign interpretations were measured prior to instruction on mathematical equivalence. In addition to helpful effects of relational interpretations, we hypothesized that an arithmetic-specific interpretation (e.g., "what something adds to") would be more likely to hinder children's learning than would other non-relational interpretations. Results supported these hypotheses. Presence of relational interpretations was helpful in both grades, and an arithmetic-specific equal sign interpretation negatively predicted 5th graders' end-of-year early algebra performance. Equal sign interpretations were not associated with arithmetic performance in either grade. Results extend our understanding of how equal sign interpretations shape children's mathematics learning.

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