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**Language supports for mathematics understanding and performance.**

Baroody, Arthur J. et al., The development of arithmetic concepts and skills: Constructing adaptive expertise. Mahwah, NJ: Erlbaum (ISBN 978-0-8058-3155-9/hbk; 978-0-8058-3156-6/pbk). Studies in Mathematical Thinking and Learning Series, 229-242 (2003).

In this chapter, we review our collaborative efforts with colleagues around the world to examine the influence of language characteristics on children's mathematics understanding and performance. Using cross-national comparisons of numerical language characteristics and children's related mathematical activities, we have attempted to explain the often-reported superior achievement of students from Asian countries from a language-based perspective. Variations in home and school experiences are typically given as explanations for these achievement differences, and their influence cannot be discounted. However, Asian children demonstrate superior performance on measures of mathematical skills such as verbal counting base-ten understanding and place-value understanding before teaching effectiveness and other school-related factors come into play. We suggest that numerical language characteristics may also be a factor in the superior mathematics performance exhibited by Asian-language speakers. In this chapter, we examine evidence on how the peculiar characteristics of children's languages can affect their understanding of mathematical concepts. Specifically, we describe three examples of language supports for mathematics understanding and performance: (a) the number naming (counting) system, (b) fraction terms, and (c) the use of numeral classifiers. We also discuss children's interpretation of grammatical number (singular and plural) and how this might influence mathematics performance. Although we use the Japanese language for our examples, our comments can be generalized to Chinese and Korean as well. (Orig.)

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