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Preschoolers' understanding of subtraction-related principles.

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Summary: Little research has focused on an informal understanding of subtractive negation (e.g., $3 - 3 = 0$) and subtractive identity (e.g., $3 - 0 = 3$). Previous research indicates that preschoolers may have a fragile (i.e., unreliable or localized) understanding of the addition-subtraction inverse principle (e.g., $2 + 1 - 1 = 2$). Recognition of a small collection's cardinal value and computational experience, particularly with subtractive negation, may play a key role in the construction of an understanding of inversion. Testing with eighty 3 to 7 year olds revealed that most children demonstrated a reliable and general understanding of subtractive negation and identity at 4 years of age. In contrast, such an understanding of the inverse principle was not achieved by most children until 6 years of age and was preceded by recognition of "two" and "three" and an understanding of subtractive negation and identity. (Contains 2 footnotes, 5 tables and 2 figures.) (ERIC)

Classification: F31 F32 C31 C32

Keywords: subtraction; arithmetic; number concepts; preschool children; elementary school students; mathematical concepts; computation

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