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Author

Prather, Richard

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Change in Encoding Facilitates Principle Acquisition

Richard Prather

Indiana University

Abstract: This study addresses the interaction between stimulus encoding and learning. Specifically I address the acquisition of arithmetic principle knowledge and its relation to learners arithmetic equation encoding. Arithmetic principle knowledge has been shown to be a key aspect of early mathematical development. Behavioral results suggest that children with experience encoding relevant characteristics show a change in their principle knowledge. Computational results mirror this finding. Model instantiations in which the same equation encoding is used show similar behavior. I take this as preliminary evidence of a direct connection between the encoding of arithmetic equations and knowledge in the arithmetic domain. This has clear applications to both developmental theory and educational practice.