

UC Merced

Proceedings of the Annual Meeting of the Cognitive Science Society

Title

Childrens Mathematical Strategy Choices are not Influenced by NumberMagnitude

Permalink

<https://escholarship.org/uc/item/3fs8c58h>

Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 42(0)

Authors

Cook, Susan

Mistak, Andy

Publication Date

2020

Copyright Information

This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>

Peer reviewed

Childrens Mathematical Strategy Choices are not Influenced by Number Magnitude

Susan Cook

University of Iowa, Iowa City, Iowa, United States

Andy Mistak

University of Iowa, Iowa City, Iowa, United States

Abstract

When solving mathematical equivalence problems (e.g. $5 + 3 + 6 = _ + 6$), children use a variety of problem-solving strategies (Perry, Church, & Goldin-Meadow, 1988). We investigated factors potentially influencing how children choose strategies and solve problems, including the size of the numbers, the problem structure, and the structure of childrens strategy repertoires. We predicted that childrens strategy choices would be influenced by both the size of the numbers and the problem structure. We found that, contrary to our expectations, childrens strategy choices and their accuracy were not influenced by the size of the numbers in the problem. We also predicted that there would childrens strategy repertoires would reveal conceptual structure. Children were highly consistent in their strategy choices across problems, and individual strategies showed evidence of varying affinity with one another. Childrens repertoires appear to reflect childrens emerging understanding of equivalence, providing a potential target for personalizing instruction in mathematical equivalence.