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The Effect of Task Features on Children's Number Ordering Performance

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Abstract

The development of numerical cognition is a critical foundation for children's later mathematics performance, with number ordering as a key predictor of advanced competence. This study examines how children's number ordering performance varies by number adjacency and size. A sample of 104 kindergartners arranged triplets of numbers in ascending order, with trials featuring adjacent or non-adjacent and small (1–10) or large numbers. Logistic regressions showed that adjacency, size, and their interaction significantly predicted performance, $p < .05$. Children were more accurate with adjacent versus non-adjacent numbers and small versus large numbers. The interaction revealed the adjacency effect was driven by a higher accuracy on small adjacent versus non-adjacent numbers ($p < .001$); response accuracy was similar for large adjacent versus non-adjacent numbers ($p = .27$). These results, significant after controlling for verbal counting, $p < .001$, underscore the importance of number adjacency and size in designing tasks to measure numerical skills.