

This study investigated how gesturing aids children's learning, specifically focusing on whether the accuracy of gestures matters. Researchers manipulated gesturing during a math lesson, assigning children to one of three conditions: correct gestures, partially correct gestures, or no gestures. Results showed that children using correct gestures learned significantly more than those with partially correct gestures, who in turn learned more than the no-gesture group. This effect was mediated by whether children incorporated the grouping strategy (implicitly conveyed in their gestures) into their verbal explanations. The findings suggest that body movements contribute not only to recalling existing knowledge but also to creating new knowledge, indicating that teaching learners specific hand movements can lay a foundation for learning new concepts. Even initially rote gestures, modeled after those used by successful problem-solvers, became meaningful within the learning context. This study extends previous research showing gesture's positive impact on learning and memory by proposing a mechanism: gestures help children extract information from their own movements, potentially facilitating the internalization of problem-solving strategies. The study controlled for computational speed, and the effect of gesture condition on post-test performance was significantly reduced when the mediating factor (incorporating the strategy into speech) was included in the analysis.