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Does Motor Engagement Influence Memory for STEM Abstract Concepts?

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Abstract

Theories of embodied cognition have suggested that motor activity may influence the consolidation of conceptual knowledge. In line with this prediction, behavioral studies have shown retrieval interference effects of a manual motor task for manipulable object concepts. On the other hand, research investigating such effects for abstract concepts is limited. Here, we examined in a behavioral experiment potential effects of the recruitment of the motor system for the consolidation of different kinds of abstract concepts. Participants were presented auditorily and asked to memorize abstract concepts with movement referents (e.g., fluidity), abstract concepts without movement referents (e.g., theory), and concrete concepts (e.g., microscope) while engaging in a full-body motor task. All concepts were specific to Science Technology Engineering and Mathematics (STEM) disciplines. Analysis of free recall and recognition performance suggests influence of motor engagement for certain types of STEM concepts during memory encoding and subsequent retrieval.