

## The Effect of Object Presentation on Action Memory in School-Aged Children

**Authors :** Farzaneh Badinlou, Reza Kormi-Nouri, Monika Knopf

**Abstract :** Enacted tasks are typically remembered better than when the same task materials are only verbally encoded, a robust finding referred to as the enactment effect. It has been assumed that enactment effect is independent of object presence but the size of enactment effect can be increased by providing objects at study phase in adults. To clarify the issues in children, free recall and cued recall performance of action phrases with or without using real objects were compared in 410 school-aged children from four age groups (8, 10, 12 and 14 years old). In this study, subjects were instructed to learn a series of action phrases under three encoding conditions, participants listened to verbal action phrases (VTs), performed the phrases (SPTs: subject-performed tasks), and observed the experimenter perform the phrases (EPTs: experimenter-performed tasks). Then, free recall and cued recall memory tests were administrated. The results revealed that the real object compared with imaginary objects improved recall performance in SPTs and EPTs, but more so in VTs. It was also found that the object presence was not necessary for the occurrence of the enactment effect but it was changed the size of enactment effect in all age groups. The size of enactment effect was more pronounced for imaginary objects than the real object in both free recall and cued recall memory tests in children. It was discussed that SPTs and EPTs differentially facilitate item-specific and relation information processing and providing the objects can moderate the processing underlying the encoding conditions.

**Keywords :** action memory, enactment effect, item-specific processing, object, relational processing, school-aged children

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