

# Bar-Ilan University

The effect of the study method (retrieval practice versus restudying) and medium (paper versus screen) on vocabulary learning

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## **Abstract**

It has long been established that retrieval practice—testing oneself on new vocabulary using flashcards- is a more effective learning strategy than merely restudying the materials. Indeed, vocabulary flashcards are often used on both paper and screen, but whether and how the study medium (screen vs. paper) affects the benefits of retrieval practice has been overlooked so far. Further, prior research has often demonstrated memorial benefits when the test context is congruent with the study context. However, it is unclear whether this congruency effect extends to medium as context. To examine the effect of study method, study medium, test medium, and study-test medium congruency on vocabulary learning, 18-30-year-old young adults practiced new foreign vocabulary words using virtual (on-screen) or physical (on-paper) cards by either restudying or practicing retrieval and were later tested on half of these words on screen and the other half on paper.

Results revealed that retrieval practice had a robust benefit to learning (compared to restudying) regardless of the study medium, the test medium, or their congruency. This effect could be attributed to the memorial benefits of retrieval, but also to the fact that learners spontaneously allocated more practice time for retrieval practice than for restudying. Learners' metacognitive assessments of their own learning, however, suggested that learners did not appreciate the benefits of retrieval practice as a study method, regardless of the study medium.

Importantly, the results also revealed a study-test medium congruency effect, reflecting better test performance when the test medium was congruent with the study medium than when they were incongruent. These findings have important applied implications for learning as they challenge common practices of study-test incongruency. It could therefore be beneficial for teachers to match their study medium to their test medium in order to enhance their students' learning and teach students to use retrieval practice as a learning strategy.