

BAR-ILAN UNIVERSITY

**Combining Interface Components that Support Accelerating
Learning in a Virtual Reality Environment for the Acquisition of
Vocabulary in Hebrew as a Foreign Language**

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ABSTRACT

This research investigated the impact of a technological system on learning a foreign language. The system intended to impact and alter states of awareness by combining conscious and sub-conscious components, along with influencing three variables involved in learning a foreign language: (1) anxiety, (2) time (3) depth of processing. We tested the system in two different learning environments that used (a) a computer with headphones and (b) a virtual reality headset to establish the most effective learning environment in retaining capabilities in a short time. We recruited 100 French native speakers adults and taught them Hebrew for five days using the technology developed for this study: 30 minutes each evening and 5 minutes every morning. The post-learning tests indicated that both groups improved their knowledge scores by 80% relative to the pre-learning test.

Furthermore, in sustained knowledge retention tests we conducted one month after the end of the intervention, the learned vocabulary was maintained and improved. The results of this study confirm that the roles of (A) learning, (B) processing depth, and (C) lowering stress level could accelerate memory, processing, and word recall in both tested technological environments. Variance analysis did not show any influence of background variables on learning (e.g., gender, age, previous knowledge). These findings slightly reorient the discussion from the learning mode and broaden the view on technological perspectives. The apparent confirmation of the research hypotheses suggests that accelerated learning practices are more effective than initially realized.