BAR-ILAN UNIVERSITY

Artificial grammar learning is facilitated by distributed practice: Evidence from a production task

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Submitted in partial fulfillment of the requirement for the Master's degree in the School of Education, Bar-Ilan University

Ramat-Gan, Israel

2020

Abstract

Previous studies have shown that distributed practice—a training strategy that is known to facilitate memory—is likely to result in greater learning than massed practice. The purpose of this study was to test whether artificial grammar learning performance is affected by the amount of spacing between practice sessions overall and in high and low chunk strength levels. Two groups (massed and distributed practice) of individuals learned strings of letter created according to a set of rules and were required to produce new strings using given letter sets. For the massed practice group, training was performed continuously within the same day, whereas for the distributed practice group, training was distributed across two days (about 24-hour spacing). Overall results showed that the edit distance of the produced strings was smaller after 24 hours than after just 10 minutes. The results also indicated that in the low chunk strength strings (indicating structure learning), both groups demonstrated similar improvement from first to second testing, while in the high chunk strength strings (indicating similarity learning), improvement in string production performance was significantly higher when practice was distributed across two days. These results provide novel evidence indicating that spacing practice sessions across two days seems to be superior to massed practice in enhancing similarity-based artificial grammar learning.

Key words: distributed practice, massed practice, artificial grammar learning, statistical learning, chunks, sequence production.