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Applying adaptive distributed practice to self-managed computer-based anomia treatment: A single-case experimental design, *Journal of Communication Disorders*, Volume 99,106249, <https://doi.org/10.1016/j.jcomdis.2022.106249>

Introduction; There is a pressing need to improve computer-based treatments for aphasia to increase access to long-term effective evidence-based interventions. The current single case design incorporated two learning principles, adaptive distributed practice and stimuli variability, to promote acquisition, retention, and generalization of words in a self-managed computer-based anomia treatment.

Methods; Two participants with post-stroke aphasia completed a 12-week adaptive distributed practice naming intervention in a single-case experimental design. Stimuli variability was manipulated in three experimental conditions: high exemplar variability, low exemplar variability, and verbal description prompt balanced across 120 trained words. Outcomes were assessed at 1-week, 1-month, and 3-months post-treatment. Statistical comparisons and effect sizes measured in the number of words acquired, generalized, and retained were estimated using Bayesian generalized mixed-effect models.

Results; Participants showed large and robust acquisition, generalization, and retention effects. Out of 120 trained words, participant 1 acquired ~77 words (trained picture exemplars) and ~63 generalization words (untrained picture exemplars of treated words). Similarly, participant 2 acquired ~57 trained words and ~48 generalization words. There was no reliable change in untrained control words for either participant. Stimuli variability did not show practically meaningful effects.

Conclusions; These case studies suggest that adaptive distributed practice is an effective method for re-training more words than typically targeted in anomia treatment research (~47 words on average per [Snell et al., 2010](#)). Generalization across experimental conditions provided evidence for improved lexical access beyond what could be attributed to simple stimulus-response mapping. These effects were obtained using free, open-source flashcard software in a clinically feasible, asynchronous format, thereby minimizing clinical implementation barriers. Larger-scale clinical trials are required to replicate and extend these effects.