

The Arousal of Cognitive Processes in Vocabulary Learning

Jobert Ngwenya, University of Jyväskylä, Jyväskylä, Finland
Héctor Pijeira Díaz, University of Jyväskylä, Jyväskylä, Finland

Introduction

- Foreign language vocabulary learning (VL) is a critical yet challenging fit that affects learner motivation. Explicit vocabulary learning using word lists is a common strategy that has been used to promote vocabulary acquisition (Hoshino, 2010).
- Wordlist evaluation considers cognitive load (mental effort), improved self-efficacy through performance, and electrodermal activity (EDA) as a measure of arousal and sympathetic nervous system activity to understand cognitive and affective processes.

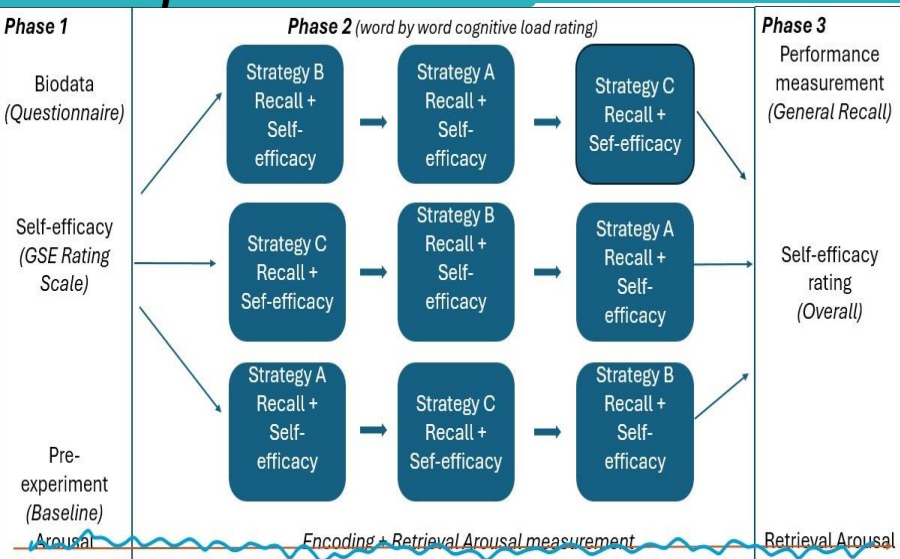
Aim

Evaluates the effectiveness of various word list learning strategies based on word difficulty with self-efficacy, cognitive load, sympathetic arousal and performance.

Hypothesis

Alternating easy & difficult words can enhance self-efficacy and motivation.

Experiment



Methods & Material

- Randomised experimental design principles $N=100$ within subject vocabulary learning.
- Physiological data (sympathetic arousal) and self-reports (for self-efficacy and cognitive load) and trace data.

Expected Results and Impact

- Alternating easy and difficult words will boost self-efficacy and balance cognitive load encouraging recall.
- Increase in skin conductance (sympathetic arousal) may signal higher cognitive engagement and better memory encoding and retrieval.
- Results likely to inform design and instruction of foreign vocabulary instruction to learning designers, CALL & MALL developers, and teachers.

References:

- Marliana, E., & Marlisa, M. (2023). English learning strategies used by the students in English education department in solving their learning difficulties. GANEC SWARA. Retrieved from <https://api.semantic.scholar.org/CorpusID:261603723>
- Hoshino, Y. (2010). The Categorical Facilitation Effects on L2 Vocabulary Learning in a Classroom Setting. RELC Journal. <https://doi.org/10.1177/0033688210380558>
- Stratton, J. M. (2022). Intentional and Incidental Vocabulary Learning: The Role of Historical Linguistics in the Second Language Classroom. The Modern Language Journal, 106(4), 837-857. <https://doi.org/10.1111/modl.12805>



forthem.

Fostering Outreach
within European Regions,
Transnational Higher Education
and Mobility

Second Annual FORTHEM conference

FORTHEM – Connecting Worlds of Science and Society

January 29-31, 2025