The Effect of Explicit VLS Instruction on the Vocabulary Learning Behaviors of Japanese Biology Majors

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Introduction

Learning strategies = "procedures that facilitate learning a task" (Chamot, 2005, p. 112).

Teaching language learning strategies:
- helps less successful students become better language learners (Chamot, 2005)
- increases learners' knowledge and perception of the value of strategies (Nunan, 1997)
- enhances learners' motivation (Nunan, 1997)
- increases learners' use of metacognitive strategies (Mizumoto & Takeuchi, 2008, 2009)

Teaching VLS to Japanese life science students (Little & Kobayashi, 2015):
- increased their use of self-management and input-seeking
- revealed learners prefer shallower strategies for learning general science words
- showed learners reject deeper strategies even if perceived as useful because they are time-consuming

Knowledge and use of ESP vocabulary is important because it helps learners:
- demonstrate their understanding of a disciplinary field and
- show they belong to a particular community (Woodward-Kron, 2008, p. 246)

We therefore surmised training science majors in how to use deeper VLS for learning ESP vocabulary would positively affect their vocabulary learning behavior.

Deeper Memory VLS Used in the Study

1. Imagery 2. Association 3. Affix 4. Grouping

Vocabulary Learning Behaviors

Vocabulary learning behaviors focused on in the present study were as follows:

1. Self-management
2. Input seeking
3. Use of shallower strategies
4. Use of deeper memory strategies
5. Intrinsic motivation
6. Extrinsic motivation

(Adapted from Mizumoto & Takeuchi, 2008)

Research Question

How does deeper memory VLS instruction using biology terms influence the vocabulary learning behaviors of biology major students with different vocabulary sizes?

Participants

109 (41 males and 68 females) second year Japanese biology major students of a university in Tokyo.

Tabel 1. ***Participants***

Group	Vocabulary Size	Number of Participants
LVS	5000~ (University Level)	72 (27 males, 45 females)
SVS	~5000 (Below University Level)	37 (14 males, 23 females)

Note. LVS = Larger Vocabulary Size Group, SVS = Smaller Vocabulary Size Group

Methods

1. The students were divided into SVS and LVS based on the Mochizuki Vocabulary Size Test.
2. The students took a pre-survey about their vocabulary learning behaviors.
3. Both groups received training on deeper processing memory VLS (namely, imagery, association, affix and grouping strategies) through eight weeks of instruction.
4. The students took a post-survey about their vocabulary learning behaviors.

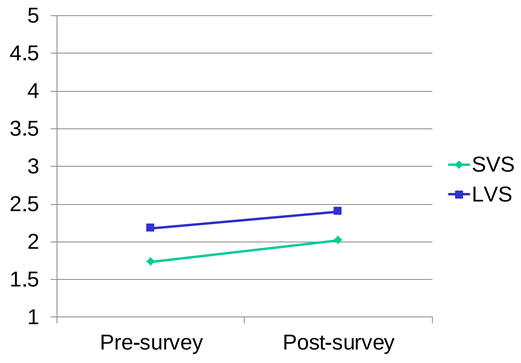
Materials

1. Mochizuki Vocabulary Size Test
2. A questionnaire about the students' vocabulary learning behaviors used for the pre- and post-surveys.

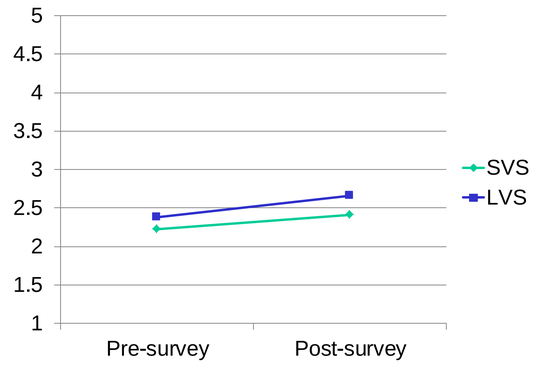
Data Analyses

1. We calculated the mean and SD of the total Likert scale scores of all the items in the same category in the pre- and in the post-surveys. We also calculated the pre-post gain between the two surveys for each category.
2. We carried out split-plot design ANOVA with the students' pre-post survey scores as a within-factor and their vocabulary size as a between-factor to see if there are any significant differences between the means of the SVS and LVS groups. The statistical analyses were carried out with JMP Version 13.

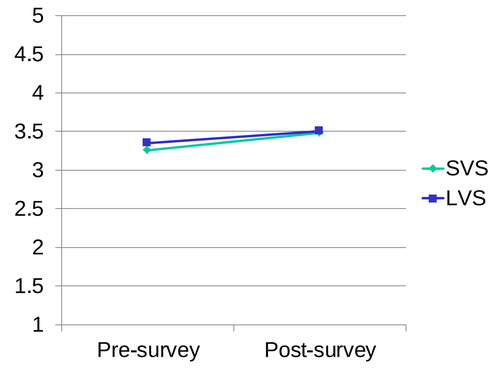
Results 1. Pre-post Gains of SVS and LVS for Each Category



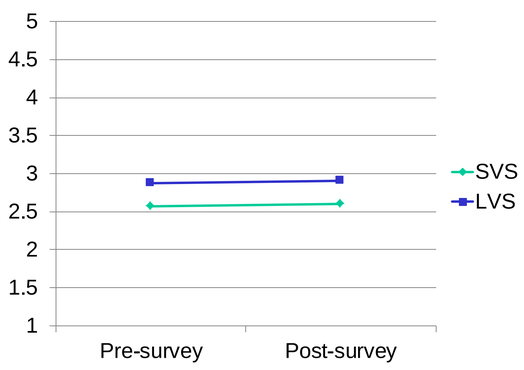
***Graph 1*. Self-management.**



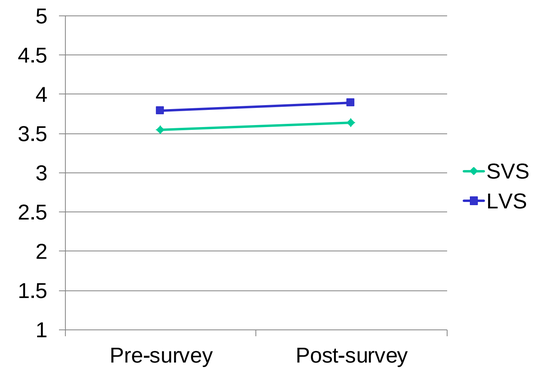
***Graph 2*. Input seeking.**



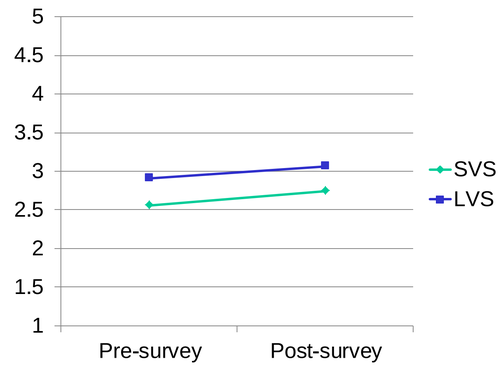
***Graph 3*. Shallower strategies.**



***Graph 4*. Deeper strategies.**



***Graph 5*. Intrinsic motivation.**



***Graph 6*. Extrinsic motivation.**

Results 2. Significance of Differences

Table 2. *Results of Split-Plot Design ANOVA*

	Vocabulary Size	Pre-Post Survey Scores	Vocabulary Size x Pre-Post Survey Scores
Self-Management	0.0059**	0.0001**	0.6070
Input Seeking	0.2895	0.0121*	0.6401
Shallower S.	0.7265	0.0074**	0.5603
Deeper S.	0.0100*	0.6304	0.9522
Extrinsic M.	0.0586	0.1393	0.9025
Intrinsic M.	0.0453*	0.0248*	0.7637

Note 1. Vocabulary Size x Pre-Post Survey Scores indicates the interaction between vocabulary size and pre-post survey scores.
Note 2. * = $p \leq .05$, ** = $p \leq .01$

Discussion

Regardless of vocabulary size, explicit VLS instruction
- **had a positive impact on metacognitive behavior; namely, self-management and input-seeking**
- **increased shallower strategy use but not deeper strategy use**
- **increased intrinsic motivation but not extrinsic motivation**

References

Chamot, A. (2005). Language learning strategy instruction: Current issues and research. Annual Review of Applied Linguistics, 25, 112-130.

Little, A., & Kobayashi, K. (2015). Vocabulary learning strategies of Japanese life science students. TESOL Journal, 6(1), 81-111.

Mizumoto, A., & Takeuchi, O. (2008). A closer look at the relationship between vocabulary learning strategies and the TOEIC scores. TOEIC Research Report, 4, 1-34. Tokyo: IIBC.

Mizumoto, A., & Takeuchi, O. (2009). Examining the effectiveness of explicit instruction of vocabulary learning strategies with Japanese EFL university students. Language Teaching Research, 13(4), 425-449.

Mochizuki, M. (1998). Nihonjin eigo gakushusha no tame no goi saizu tesuto. [A vocabulary size test for Japanese learners of English. Institute for Research in Language Teaching Bulletin, 12, 27-52.

Nunan, D. (1997). Strategy training in the language classroom: An empirical investigation. RELCJournal, 28(2), 56-81.

Woodward-Kron, R. (2008). More than just jargon – the nature and roles of specialist knowledge in Learning disciplinary knowledge. Journal of English for Academic Purposes, 7, 234-249.