An Empirical Study on the Effect of Task on L2 Incidental Vocabulary Acquisition through Reading

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Abstract

As one of the vocabulary learning methods, incidental vocabulary acquisition has become a specifically popular subject. But how do different reading tasks affect the immediate word gains and retentions of learners? Students from Qingdao University of Science and Technology participated in this experiment. The result is that students with high involvement load gain more words in both tests especially in delayed test.

Keywords: Incidental Vocabulary Acquisition, Involvement load, Empirical study

1. Introduction

1.1 Significance of the study

Vocabulary is usually considered to be one of the most significant aspects of English learning. Words of a language are just like the building materials. They are the most important element of buildings. The existing new English program for primary schools in China, New English Standard, requires much more vocabulary in new textbooks. College English learners have to pass the CET-4 and CET-6 and because of the fierce competition in job market, it is very important for them to acquire a large vocabulary.

1.2 Questions and Hypotheses

Based on the previous research findings and the English-learning situations in Chinese universities, the researcher of the study attempts to find answers to the following question:

How do different reading tasks (reading with marginal glosses, reading with marginal glosses plus making sentences with target words, reading with dictionary at one's disposal and reading with no external aid) affect the immediate word gains and retentions of learners?

1.3 The Involvement Load Hypothesis and Its Assumptions

In an attempt to translate and operate the above cognitive notions (depth of processing, degree of elaboration, and attention or noticing), Laufer and Hulstijn (2001: 1-26) proposed that the Involvement Load Hypothesis for L2 vocabulary incidental learning, whereby introducing motivational aspects of L2 learning in relation to cognition. The motivational-cognitive construction of involvement consists of three basic components: need, search, and evaluation. This proposal is the first attempt to operate the general labels of "attention", "elaboration" and "depth of processing" into concrete task-specific constructs.

The assumptions are as followings: 1) retention of words when processed incidentally is conditional upon the following factors in a task: need, search, and evaluation; 2) other factors (phonological, morphological and semantic complexity) being equal, words which are processed with higher involvement load will be retained better than words which are processed with lower involvement load.

2. Research Design

2.1 Subjects

The subjects are 125 freshmen who have been learning English as a second language in Qingdao University of Science and Technology. Although the original number of subjects for this experiment was 125, three students had to be excluded from the analysis because they did not attend all tests. They were selected randomly from non-English major department.

2.2 Selection of reading material

A reading passage from CET-4 training book was selected for the experiment. It contained 10 unknown words. The passage was in an appropriate difficulty level to roughly match the learners' ability, that is, neither too difficult nor too easy. The density of unknown words was about 2%-5%, in accordance with Laufer's (1997) argument that successful comprehension of the text and successful guessing of unknown words in the text is conditioned by familiarity with at least 95%words in the text. The topic about traffic was relatively familiar to the students.

10 words from the reading text were selected as the target words. therefore 10 words were chosen as the target words, consisting of 5 nouns, 2 adjectives, 1 verb, 1 verb phrase and 1 adverbial .

2.3 Procedures

2.3.1 Grouping

The students are divided into four groups according to their score of English in college entrance examination so that the students of each group are similar in English proficiency and vocabulary size. They are group 1, 2, 3 and 4. Different groups are given different tasks:

Task One: Reading comprehension with glosses (group1).

Task Two: Reading comprehension plus sentence making with target words with glosses (group2).

Task Three: Reading comprehension without glosses while using dictionary (group3).

Task Four: Reading comprehension without additional aid (group4).

2.3.2 Test of different reading tasks

The reading materials were handed out to the students according to their groups. They are allowed 15 minutes to do the reading comprehension without knowing the task of target word test. Each group has different task.

2.3.3 Test of target words

After the collection of the reading materials, they were tested on their knowledge of the target words.The subjects in the study were given an unexpected delayed target words test five days after they took part in the immediate test.

2.4 Scoring and Data analysis

Each correct word is given one score both in immediate test and delayed test. A word that was given the right Chinese meaning and part of word received a score of one. A wrong answer received zero.

The main instrument for the quantitative analysis is SPSS10.0. Descriptive statistics were conducted to present the sample numbers, mean scores and standard deviation for each group in the tests.The scores of immediate and delayed tests were then submitted to the One-way ANOVA respectively.

3. Results and Discussion

3.1 Results of immediate test

In order to compare task effect on word retention in the immediate test, the raw scores of the achievements of the four groups were submitted to one-way ANOVA (analysis of variance), and the mean scores and standard deviations of the immediate and the delayed test of these experiments were tabulated in table 3-1, which shows a general description of the results.

Insert Table 3-1 Here

Table 3-1 describes the mean scores, sample numbers, minimum scores, maximum scores, and standard deviations for the four groups.

The mean scores for 4 groups respectively are 7.50 for group 1; 9.10 for group 2; 6.77 for group 3 and 3.06 for group 4. From the mean scores we can see group 2 get the highest mean score 9.10 in the immediate test. Group 4 gets the lowest mean score 3.06.

Insert Table 3-2 Here

Post-Hoc tests show there is significant mean difference between the mean scores of group 1 and group 2 (sig.= 0.000<0.05). The mean scores of group 1 and group 4 are also significantly different from each other with sig.= 0.000<0.05.

Post-Hoc tests also show there is significant difference between the mean scores of group 2 and group 3 (sig.=

0.000<0.05). The scores of group 2 and group 4 are also significantly different from each other with sig.= 0.000<0.05.

However, there is no significant difference between group1 and group 3.

The difference of mean scores between group 1 and group 2, group 1 and group 4 are significant; the difference of mean scores between group 2 and group 3, group 2 and group 4 are also significant while the differences of mean scores between group 1 and group 3, is not significant.

3.2 Results of delayed test

Insert Table 3-3 Here

Table 3-3 describes the mean scores, sample numbers, minimum scores, maximum scores, and standard deviations for each level of vocabulary retentions of the four groups.

The mean scores for 4 groups respectively are 5.77 for group 1; 8.17 for group 2; 5.67 for group 3 and 2.47 for group 4. From the mean scores we can see group 2 get the highest mean score 8.17 in the immediate test. Group 4 gets the lowest mean score 2.47.

Insert Table 3-4 Here

Post-Hoc tests show there is significant difference between the mean scores of group 1 and group 2 (sig.= 0.000<0.05). The mean scores of Group 1 and Group 4 are also significantly different from each other with sig.= 0.000<0.05.

Post-Hoc tests also show there is significant difference between the mean scores of group 2 and group 3 (sig.= 0.000<0.05). The mean scores of group 2 and group 4 are also significantly different from each other with sig.= 0.000<0.05.

However, there is no significant mean difference between group1 and group 3.

The difference of mean scores between group 1 and group 2, group 1 and group 4 are significant; the difference of mean scores between group 2 and group 3, group 2 and group 4 are also significant while the differences of mean scores between group 1 and group 3, is not significant.

3.3 Discussion on Results

3.3.1 Discussion on results of hypothesis2

Hypothesis 2 predicted that different reading tasks have different impacts on learners. The tasks with higher involvement load are more effective for vocabulary retention than those with lower involvement load.

The data in Table 3-1 and Table 3-3 suggested that subjects in all four reading tasks did acquire the target words more or less, which confirmed that higher reading tasks can promote vocabulary acquisition.

3.3.2 Comparison between group 1 and group 2

The mean score of group1 is 7.50, which is lower than 9.10 of group2 in immediate test. The mean score of group1 is 5.77, which is lower than 8.17 of group2 in delayed test. The retention rate of group2 is also higher than that of group1.

Generally speaking, words that are processed with higher involvement load are retained better than words that are processed with lower involvement load. The explanation is that making sentences with target words does help students to remember the connection between the form of the word and its meaning, showing that the two cognitive components, search and evaluation, which are used to measure the involvement load are important when the students try to acquire the new words incidentally through reading.

It fully supports the hypothesis that tasks with higher involvement load will be more effective for IVA than those with lower involvement load.

3.3.3 Comparison between group1 and group3

The mean score of group3 is less than that of group1 in both tests especially in immediate test. What is the reason for the result? Consulting a dictionary is considered to be a relatively high involvement. Words that are processed with higher involvement load are retained better than words that are processed with lower involvement load. However, when the involvement load is like reading task 1 and task 2, the results are different. But the retention rate of group3 is higher than group1, which shows high involvement will lead to more retention in a long period.

The findings also partially support the Involvement Load Hypothesis proposed by Laufer and Hulstijn (2001: 1-26).

4. Conclusion

Overall, the provision of marginal glosses is more efficient in fostering learners' IVA gains than the use of dictionary, which, in turn, shows greater efficiency than no provision of external aid.

In the long-term run, all four groups under different reading tasks have lost some IVA gains but their performances in IVA retention are no longer as significantly different as their performances in IVA gains. Reading for global comprehension alone is not so effective.

Therefore, teachers may facilitate vocabulary learning by providing direct instructions and learners should take part in explicit vocabulary elaborating activities, such as making sentences, filling-in the blanks or some other vocabulary exercises after reading, making a list of important word encountered during reading and reviewing the word list regularly, etc. In this sense, for the purpose of improving vocabulary efficiency, a potentially effective way is to combine intentional learning with incidental learning rather than overemphasize one of them. They are both beneficial to vocabulary learning.

For improving the Task-induced Involvement Load Hypothesis, two directions of empirical research can be taken. One is to be carried out with the aim of modifying this hypothesis through investigating the relative weight of the three dimensions-- need, search and evaluation--which constitute the involvement construct, or investigating any other possible task variables and incorporating them in the Involvement Load Hypothesis. Another direction can be done aiming at developing the involvement load hypothesis into an integrated vocabulary learning model.

References

Craik, M. & Lockhart, R. S. (1972). Levels of Processing: A framework for Memory Research. *Journal of Verbal Learning and Verbal Behavior*, 11: 671-684.

Craik, F. I. M. & Tulving, E. (1975). Depth of Processing and the Retention of Words in Episodic Memory. *Journal of Experimental Psychology: General*, 104(3): 268-294.

Laufer, B. (1997). *The Lexical Plight in Second Language Reading*. Cambridge: CUP.

Laufer, B. & Hulstijn, J. (2001). Incidental vocabulary acquisition in a second language: The Construct of Task-Induced Involvement. *Applied Linguistics*, 22(1): 1-26.

Schmidt, R. (1994a). Deconstructing Consciousness in Search of Useful Definitions for Applied Linguistics. *Consciousness in Second Language Learning*, (11):11-26.

Table 3-1. Descriptive statistics for scores of the four groups in immediate test

Descriptives

SCORE

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1	30	7.50	1.68	.31	6.87	8.13	3	10
2	30	9.10	1.27	.23	8.63	9.57	6	10
3	30	6.77	1.52	.28	6.20	7.34	3	10
4	32	3.06	1.46	.26	2.54	3.59	0	6
Total	122	6.55	2.69	.24	6.07	7.03	0	10

Table 3-2. Scheffe Post-Hoc tests of mode differences

Multiple Comparisons

Dependent Variable: SCORE

LSD

(I) GROUP	(J) GROUP	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-1.60*	.38	.000	-2.36	-.84
	3	.73	.38	.059	-2.77E-02	1.49
	4	4.44*	.38	.000	3.69	5.19
2	1	1.60*	.38	.000	.84	2.36
	3	2.33*	.38	.000	1.57	3.09
	4	6.04*	.38	.000	5.29	6.79
3	1	-.73	.38	.059	-1.49	2.77E-02
	2	-2.33*	.38	.000	-3.09	-1.57
	4	3.70*	.38	.000	2.96	4.45
4	1	-4.44*	.38	.000	-5.19	-3.69
	2	-6.04*	.38	.000	-6.79	-5.29
	3	-3.70*	.38	.000	-4.45	-2.96

*. The mean difference is significant at the .05 level.

Table 3-3. Descriptive statistics for scores of the four groups

Descriptives

SCORE

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1	30	5.77	1.83	.33	5.08	6.45	2	9
2	30	8.17	1.62	.30	7.56	8.77	4	10
3	30	5.67	1.63	.30	5.06	6.27	2	8
4	32	2.47	1.34	.24	1.98	2.95	0	5
Total	122	5.47	2.60	.24	5.00	5.93	0	10

Table 3-4. Scheffe Post-Hoc tests of mode differences

Multiple Comparisons

Dependent Variable: SCORE

LSD

(I) TYPE	(J) TYPE	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-2.40*	.42	.000	-3.22	-1.58
	3	1.00E-01	.42	.810	-.72	.92
	4	3.30*	.41	.000	2.49	4.11
2	1	2.40*	.42	.000	1.58	3.22
	3	2.50*	.42	.000	1.68	3.32
	4	5.70*	.41	.000	4.89	6.51
3	1	-1.00E-01	.42	.810	-.92	.72
	2	-2.50*	.42	.000	-3.32	-1.68
	4	3.20*	.41	.000	2.39	4.01
4	1	-3.30*	.41	.000	-4.11	-2.49
	2	-5.70*	.41	.000	-6.51	-4.89
	3	-3.20*	.41	.000	-4.01	-2.39

*. The mean difference is significant at the .05 level.