

High vs. Low Load Vocabulary Learning Tasks: A Case for Intentional Learning

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Abstract:

The present study aimed at investigating whether the amount of task-induced involvement load has any effects on the immediate and delayed retentions of words in an intentional learning environment. To meet this end, two groups of college students were selected as the participants of the study. The immediate and delayed retentions of ten unknown words were measured in two learning tasks (reading comprehension vs. reading comprehension plus sentence production) which induced different amounts of involvement loads. The time-on-task also differed in the two groups. No significant difference was found between the two groups on the immediate retention tests. However, the results demonstrated that the group with higher involvement load significantly outperformed the group with lower involvement load on the delayed post-tests. The theoretical and pedagogical implications are also discussed.

Keywords: Task-Induced Involvement Load Hypothesis; Intentional Learning; Word Retention

1. Introduction

Vocabulary forms an important part of language and has been the focal point of a great deal of research in the realm of SLA in recent years (Hulstijn & Laufer, 2001). Second language learners are often aware of the fact that constraints on vocabulary knowledge can significantly hinder their oral communication success in the second language, since it is the words that comprise the integral part of the intended meaning (Kim, 2008). Thus, one of the problems second language learners encounter in establishing fluent oral communication is the huge number of words they have to learn. Most of the second language instructors also acknowledge the importance of words and emphasize the necessity to learn them; however, they are hesitant on the way to help learners acquire words most effectively. Therefore, research needs to be carried out to discover what kind of tasks lead to better and more permanent learning and provide learners with more suitable opportunities to learn words. A wide range of studies have been undertaken in this direction. (Ellis and He, 1999; Ellis, Tanaka and Yamazaki, 1994; Joe, 1995, 1998; Nation, 2001; Paribakht and Wesche, 1997; Rott, 2004; Rott, Williams, Cameron, 2002).

Although the above-mentioned researchers used different methods and tasks in implementing their studies, they all confirmed the hypothesis proposed by Laufer and Hulstijn (2001) claiming that effective tasks in comparison to less effective ones cause deeper processing of words which in turn leads to better retention of words in mind. With respect to Craik and Lockhart's (1972) depth of processing hypothesis and by considering other related studies, Laufer and Hulstijn (2001) proposed task-induced involvement load hypothesis. This hypothesis was corroborated by two empirical studies conducted to investigate how effective it is (Hulstijn and Laufer, 2001; Kim, 2008). However, the two studies just mentioned only investigated the hypothesis in an incidental learning environment; therefore, there is doubt about the adequacy of this hypothesis in an intentional learning environment.

Before presenting the research question for the present study, a brief definition of incidental and intentional learning environments seems indispensable. According to Hulstijn and Laufer (2001) incidental learning environment, in contrast to intentional learning environment, refers to situations

in which learners unintentionally tend to process new words and commit related information about words to memory. Thus, incidental learning of vocabulary refers to the kind of learning in which vocabulary learning is a peripheral and secondary product, for example, learning vocabulary just by being exposed to them in watching a movie or reading a story. Intentional learning of vocabulary, on the other hand, refers to the kind of learning that considers memorization of vocabulary information as its primary purpose (Schmitt, 2008).

As it was mentioned above, investigating the hypothesis proposed by Laufer and Hulstijn (2001) in intentional learning environment seemed necessary; for this reason the present study was undertaken to answer the following questions:

1. Does task-induced involvement load in an intentional learning environment have any effect on the immediate retention of vocabulary?
2. Does task-induced involvement load in an intentional learning environment have any effect on the delayed retention of vocabulary?

To answer this question the following hypotheses were formulated:

1. Task-induced involvement load has no effect on the immediate retention of vocabulary.
2. Task-induced involvement load has no effect on the delayed retention of vocabulary.

2. Methodology

2.1. Subjects

Ninety-six male learners ranging from 19-25 in age participated in this study. These learners were engineering freshmen from different majors in a technological university in Tehran. They were considered as advanced language learners, based on my own assessment and evaluation and consultation with two sophisticated instructors there, according to ACTFL proficiency guideline classification. The sampling procedure was intact group method and participants were divided into two distinct groups of 45 and 50 subjects.

2.2. Instruments

A passage was chosen from a TOEFL book (appendix 1) written by Philips (2003) from which ten unknown word were selected. To make sure that the selected words were unknown to the participants, two learners, one from each group, were summoned to comment on whether the words are known or unknown. They asserted that all the words were unknown to them. This way we could proclaim that other participants who were in a lower level of language proficiency would not know the selected words. Also, participants were asked to tick the words they knew before instruction and those participants who knew even a single word of the target words were left out of the study. The selected unknown words along with meanings related to the passage were presented in two forms at the end of the passage, i.e., their Persian equivalents and their definition provided by Webster dictionary. A vocabulary test was designed from these unknown words to assess vocabulary acquisition (appendix 2).

2.3. Procedure

The two groups of participants were asked to read the selected passage and answer its comprehension questions. They were also informed that they will be tested on the words bolded in the passage. The participants in group 1 (high involvement load) were required to make new sentences different from the ones used in the passage and definitions in the dictionary, with all the target words. But, group 2 (low involvement load) did not make sentences with the target words. Like group 1, they were required to read the passage and answer the related comprehension questions. After the completion of the tasks by the two groups, the vocabulary test was administered. The participants had to write the meanings of the target words either in Persian or English. Reading the passage, answering the questions and making sentences with specified words took 40 minutes in group 1 and 30 minutes in group 2. The longer time on task for group 1 was because of the sentence production activity of which group 2 was exempted. Five minutes were devoted to immediate test of vocabulary. The delayed test of vocabulary was akin to the immediate test and was run in the same manner in both groups two weeks after the initial instruction of words.

2.4. Results

Independent t-test was applied to compare the grades obtained by group 1 (high involvement load) and group 2 (low involvement load). Descriptive statistic of both groups has been presented in tables 1 and 2. The results of immediate test is $M=8.61$, $SD=1.37$ for group 1 (high involvement load) and $M=8.04$, $SD=2.22$ for group 2 (low involvement load). The delayed test showed these results: $M=6.04$, $SD=2.77$ for group one and $M=4.61$, $SD=2.25$ for group 2.

Table 1. Descriptive statistic of groups for the immediate test

	N	M	SD	Std. Error Mean
High Load(Group 1)	46	8.61	1.37	.28
Low Load(Group2)	50	8.04	2.22	.44

Table2. Descriptive statistic of groups for the delayed test

	N	M	SD	Std. Error Mean
High Load(Group 1)	46	6.04	2.77	.57
Low Load(Group2)	48	4.61	2.25	.46

The result of two groups' comparison of means for the immediate test is displayed in table 3 and summarized as: Significance level (two-tailed) = .289, $t(40-41) = 1.07$, mean difference = .56 with 95% confidence interval of the difference.

Table 3. The result of independent t-test for the immediate test

	t	df	Sig. (2-tailed)	MD
Equal variances assumed	1.07	94	.297	.56
Equal variances not assumed	1.07	94.41	.289	.56

The result of two groups' comparison of means for the delayed test is displayed in table 4 and summarized as follows: Significance level (two-tailed) = .061, $t(42-22) = 1.92$, mean difference (MD) = 1.43 with 95% confidence interval of the difference.

Table 4. The result of independent t-test for the delayed test

	t	df	Sig. (2-tailed)	MD
Equal variances assumed	1.92	92	.06	1.43
Equal variances not assumed	1.92	92.22	.061	1.43

3. Discussion and conclusion

The results of the t-test did not demonstrate any significant difference between group 1's (high involvement load) and group 2's (low involvement load) performance on the immediate retention of the given words. For this reason, the research null hypotheses mentioned as "Task-induced involvement load has no effect on the immediate retention of vocabulary" is confirmed.

Although the positive effect of increasing involvement load in incidental learning environment on immediate and delayed L2 vocabulary learning has been proven in previous studies (Hulstijn and Laufer, 2001; Kim, 2008), it seems that the induced involvement load has little and very imperceptible

effect on immediate learning of words in an intentional learning environment. In fact, the findings of this study suggest that although the hypothesis proposed by Laufer and Hulstijn (2001) predicts a positive correlation between task-induced involvement load and vocabulary retention in incidental learning environment, it does not demonstrate sufficient adequacy in an intentional learning environment. To explain this discrepancy, it is speculated that learners mostly used similar learning strategies like "repetition" for the immediate memorization of words that might have resulted in almost good immediate retention of words, but with lower depth. In other words, the learners might have concentrated solely on making formal-semantic relationship of words. This was indeed the very relationship assessed in the vocabulary test. Thus, high amount of involvement load that usually results in learning other vocabulary features such as morphosyntactic, orthographical properties, and collocational rules had become rather ineffectual in the study because they were not assessed in the vocabulary post-test employed in the study at all. Thus, further research needs to be conducted concerning this special case to investigate what happens if more features, in addition to formal-conceptual relationship, are incorporated in the vocabulary test. Would it produce the same results?

The findings of study, however, invalidate the second research hypothesis stated as "Task-induced involvement load has no effect on the delayed retention of vocabulary." which, in turn, is in harmony with the prediction made by the Laufer and Hulstijn's (2001) hypothesis. In fact, the heightening of the involvement load resulted in better delayed retention of the target words. It can be inferred that the added involvement load caused by sentence-making task in the second group had created more depth of processing in learning since this group had to make sentences with the target words that demanded more cognitive ability to learn additional lexical features such as morphological, syntactic, and orthographic features, and collocational restrictions. It can be concluded that enhancing the task-induced involvement load in an intentional learning environment has no significant effect on the immediate retention of words. However, the contrary of this assertion is true for the delayed retention of words, i.e., the increase of the task-induced involvement load has a positive effect on the delayed retention of words in an intentional learning environment.

In addition, the findings of this study imply that more emphasis and insistence should be put on vocabulary learning tasks which induce high involvement loads since the prime and ultimate goal in teaching vocabulary is not the immediate retention, rather, it is the delayed retention of words that has educational importance and value.

In undertaking this study, only formal-semantic relationship was dealt with, thus the generalizability of results is limited to just this sphere. So more research needs to be conducted to demonstrate what results would be obtained if more lexical features are incorporated in the vocabulary test.

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Appendix 1. The Reading Comprehension Passage and the Target Words [in bold]

It is often the case with folktales that they develop from actual happenings but in their development lose much of their factual base; the story of Pocahontas quite possibly fits into this category of folktale. This princess of the Powhatan tribe was firmly established in the **lore**¹ of early America and has been made even more famous by the Disney film based on the folktale that arose from her life. She was a real-life person, but the actual story of her life most probably differed considerably from the folktale and the movie based on the folktale.

Powhatan, the chief of a confederacy of tribes in Virginia, had several daughters, none of whom was actually named Pocahontas. The nickname means “playful one,” and several of Powhatan’s daughters were called Pocahontas. The daughter of Powhatan who became the subject of the folktale was named Matoaka. What has been **verified**² about Matoaka, or Pocahontas as she has come to be known, is that she did marry an Englishman and that she did spend time in England before she died there at a young age. In the spring of 1613, a young Pocahontas was captured by the English and taken to Jamestown. There she was treated with **courtesy**³ as the daughter of chief Powhatan. While Pocahontas was at Jamestown, English gentleman John Rolfe fell in love with her and asked her to marry. Both the governor of the Jamestown colony and Pocahontas’s father Powhatan approved the marriage as a means of **securing**⁴ peace between Powhatan’s tribe and the English at Jamestown. In

¹ **lore** [lawr] *noun*

1. **knowledge handed down verbally**: acquired knowledge or wisdom on a subject such as local traditions, handed down by word of mouth and usually in the form of stories or historical anecdotes

2. knowledge from teaching or experience: knowledge that has been acquired through teaching or experience (*archaic*)

افسانه ها و روایات قومی، مجموعه معارف و فرهنگ یک قوم یا نژاد

² **ver·i·fy** [vérrə f] (past and past participle **ver·i·fied**, present participle **ver·i·fy·ing**, 3rd person present singular **ver·i·fies**) *transitive verb*

1. **prove something**: to prove that something is true

2. **check whether something is true**: to check whether or not something is true by examination, investigation, or comparison اثبات کردن، تایید کردن

³ **cour·te·sy** [kúrtəsee] *noun* (plural **cour·te·sies**)

1. **polite or considerate behavior**: consideration for other people, or good manners

• He didn't even have the courtesy to offer me a seat.

2. **polite or considerate action**: something done out of politeness or consideration for another person

• We should certainly go, if only as a courtesy to Helen.

ادب، مهر بانی، احترام

⁴ **se·cure** [sə kyoor] *verb* (past and past participle **se·cured**, present participle **se·cur·ing**, 3rd person present singular **se·cures**)

1616, Pocahontas **accompanied**⁵ her new husband to England, where she was royally received. Shortly before her planned return to Virginia in 1617, she **contracted**⁶ an illness and died rather suddenly.

A major part of the folktale of Pocahontas that is unverified concerns her love for English Captain John Smith in the period of time before her capture by the British and her rescue of him from almost certain death. Captain John Smith was indeed at the colony of Jamestown and was **acquainted**⁷ with Powhatan and his daughters; **he** even described meeting them in a 1612 journal. However, the story of his rescue by the young maiden did not appear in his writings until 1624, well after Pocahontas had aroused widespread interest in England by her marriage to an English gentleman and her visit to England. It is this **discrepancy**⁸ in dates that has caused some historians to doubt the **veracity**⁹ of the tale. However, other historians do argue quite **persuasively**¹⁰ that this incident did truly take place.

1. **transitive verb attach something firmly**: to attach something firmly in position

2. **transitive and intransitive verb make safe**: to make a building or area safe to occupy, usually by ensuring that all internal sources of danger are removed or that it is defended against attack

3. **transitive verb acquire something**: to obtain something, especially after using considerable effort to persuade somebody to grant or allow it

- *secure an agreement*

4. **transitive verb FINANCE ensure payment for something**: to provide security for something or otherwise guarantee payment

- *a loan secured against your house*

5. **transitive and intransitive verb guarantee**: to guarantee or ensure something

تامین کردن، تحکیم کردن

⁵ **ac·com·pa·ny** [ə kúmpənee, ə kúmpnee] (*past and past participle ac·com·pa·nied, present participle ac·com·pa·ny·ing, 3rd person present singular ac·com·pa·nies*)
verb

1. **transitive verb escort somebody**: to go with somebody

2. **transitive verb be present with something**: to be enclosed, attached, or present with something

همراهی کردن

⁶ **Contract** [kən trákt, kón trákt] (*past and past participle con·tract·ed, present participle con·tract·ing, 3rd person present singular con·tracts*)

transitive verb get illness: to catch or develop an illness or disease

مبتلا شدن

⁷ **ac·quaint·ed** [ə kwáyntəd] *adjective*

1. **familiar**: having some, often not very much, knowledge of something

- *not acquainted with this software*

2. **known**: known to somebody or to each other from a previous introduction

آشنا

⁸ **dis·crep·an·cy** [di skréppənee] (*plural dis·crep·an·cies*)

noun failure to match: a distinct difference between two things such as sets of figures that should match or correspond

- *found a discrepancy in the figures* نا همخوانی، اختلاف

⁹ **ve·rac·i·ty** [və rássətee] (*plural ve·rac·i·ties*) *noun*

1. **truth**: the truth, accuracy, or precision of something

- *They questioned the veracity of our claims.*

2. **truthfulness**: the truthfulness or honesty of somebody

3. **true statement**: a truth or true statement

راستی، صحت

¹⁰ **per·sua·sive** [pər swáyssiv] *adjective*

able or tending to persuade: having the ability to persuade people or the effect of persuading them

مجادب کننده، متقاعد کننده **per·suade** [pər swáyd] (*past and past participle per·suad·ed, present participle per·suad·ing, 3rd person present singular per·suades*) *transitive verb*

1. **get somebody to do something**: to succeed in convincing somebody to do something, especially by reasoning, pleading, or coaxing

2. **convince somebody of something**: to make somebody believe something, especially by giving good reasons for doing so

1. The main idea of the passage is that
 - a. folktales are often not very factual .
 - b. Pocahontas did not really exist.
 - c. any one of Powhatan's daughters could have been the Pocahontas of legend .
 - d. Pocahontas fell in love with John Smith and saved his life.
2. What is true about the name Pocahontas, according to the passage?
 - a. It was the real name of a girl named Matoaka.
 - b. It meant that someone was playful.
 - c. Only one girl was known to have used this name.
 - d. Powhatan was one of several people to be given this nickname.
3. How was Pocahontas treated when she was held at Jamestown?
 - a. With respect
 - b. With disdain
 - c. With surprise
 - d. With harshness
4. Why are some historians doubtful about the portion of the Pocahontas folktale dealing with John Smith?
 - a. Captain John Smith probably never knew Pocahontas.

Appendix 2 . The Vocabulary Retention Test

Provide the meaning of the words in Persian or English

Name:		Group:
1.	Lore	
2.	Verify	
3.	Courtesy	
4.	Secure	
5.	Accompany	
6.	Contract	
7.	Acquainted	
8.	Discrepancy	
9.	Veracity	
10.	Persuasively	

- b. Captain John Smith was never actually in Jamestown.
 - c. His rescue purportedly happened while Pocahontas was in England.
 - d. His account of the rescue did not appear until well after the event supposedly happened.
5. It can be inferred from the passage that Pocahontas
- a. never intended to return to Virginia
 - b. had a long marriage
 - c. suffered from a long illness
 - d. did not mean to remain in England
6. The pronoun “he” in line 4 of the third paragraph refers to
- a. the governor
 - b. Pocahontas
 - c. John Smith
 - d. Powhatan
7. When did John Smith most likely meet Pocahontas?
- a. In 1612
 - b. In 1613
 - c. In 1616
 - d. In 1624