

# The Impact of Retrieval Task on Learning Vocabulary of Iranian EFL Learners

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Received for publication: 04 March 2013.

Accepted for publication: 07 April 2013.

## Abstract

This study was an attempt to investigate the effect of retrieval activity on learning vocabulary. To fulfill the purpose of this study, 40 female and male students of Parto Institute in Sardasht were selected from among a total number of 60 based on their performance on the Preliminary English Test (PET) and randomly put into two experimental and control groups. The same content was taught by the teacher/researcher to both groups throughout the treatment. The only difference was that the experimental group was taught the vocabulary through retrieval activities, which consisted of the four-step including Learning Phase, Retrieval Activity Phase, Retrieval Interval Test Phase and Post Test Phase while the students in the control group were taught the vocabularies without any retrieval processes. Finally, a posttest within the content taught was given to the students in both groups at the end of the instruction and the mean scores of both groups on the test were compared through an independent samples t-test. The result showed that retrieval activity had a significant effect on the vocabularies learning of Iranian EFL learners.

**Keywords:** Mnemonic strategy, retrieval, vocabulary learning.

## Introduction

Learning a language without vocabulary is impossible. In recent years, second or foreign language vo-

cabulary learning has become a topic of much interest for researchers, teachers, curriculum designers and theorists. Rivers (1984) believes that vocabulary cannot be taught although it can be explained, presented, demonstrated along with other techniques and activities, it must be learned by individuals. Individuals differ in their knowledge of vocabulary. The vocabulary we understand and use varies in nature and quantity from one person to the other. This is also the exact case for native speakers.

Acquiring his/her first language, one develops concepts by means of learning how our surroundings express these concepts. Later on, as our competence develops, we use the language to express new concepts to our fellows. However, when we are learning a second language or foreign language, we need not to form new concepts but it is just learning new ways of expressing these already existing concepts in the new language. Allen (1983) says that since students already have words in their own language, they feel the need to learn other words to express their feeling or labeling things. However, learners should be taught that except in a restricted number of cases, a word in a second language is hardly precisely equivalent in meaning to a word in first language. Precise equivalents are quite limited.

Looking at the learning words from another channel, Cook (1991) says the problem is not just in learning second language words; rather in remembering them. She quotes Bahrick (1984) that how well people remember something depends on deeply how they process it. He claims that a word that is learned after only one or two presentations

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is remembered better than one takes several presentations to learn. Repeating words as strings of sounds is low-level processing and badly remembered. Working out how words fit in the grammatical structure of the sentences deeper and leads to better memory, using the meanings of words together within the whole meaning of the sentence is the deepest level of processing and ensures best memory.

Another factor contributing to the retention of vocabulary is the “frequency” of words. In the TEFL literature, frequency has two separate implications: One is what refers to the most frequent word in the target language. It is believed that the most frequently used words must be taught first; however, second language research, according to Cook (1991), has little support about it. Dullenrup, *et al.* (1989) find that Danish University between good Danish readers and slow readers was not a straightforward matter of the better the students the rarer the words they knew. Hence a simple grading word step by step does not seem justified. The second implication of frequency refers to “how often something is repeated by students”. In other words, it means to learn a word a student has to use it several times. However, Bahrick’s study supported the reverse. He noted that words are remembered best if they are learned quickly with few presentations. Therefore, how the word is practiced is more important than how often it is practiced. To make a word memorable, the first occurrence of the word is very important than practicing it several times. Bahrick’s approach suggests that if teachers want students to remember something for periods longer than a year or two, they need to space the presentation over quite long intervals of day. He explained this as a word is remembered best if it is practiced every 30 days rather than at more frequent intervals (Bahrick & Phelps, 1987).

### ***Statement of the Problem***

Vocabulary is a major obstacle to many Iranian students. Most of them are faced with the problem of lack of lexical storage. They always complain about lexical problems in reading and translating, in listening to English news, in watching English cartoons, and even in writing a simple letter in a foreign language. Words fade away after a few days of memorization. Is there a better way of learning (retaining and retrieving) words? These problems brought a new idea to the mind of the researcher to

see if the notion of “retrieval” promotes learning vocabulary or not.

In past, vocabulary teaching and Learning were often given little priority in second language programs, but the status of Vocabulary now seems to be changing. Vocabulary Learning has long been an area of language learning which gives the students the headache. They keep complaining that no longer after they have memorized a word, it evades. Allen (1983) says, “even where teachers have devoted too much time to vocabulary teaching, the results have been disappointing. Sometimes after months or even years of English- many of the words most needed have never been learned” (p.50).

### ***Significance of the Study***

As a teacher, when faced with the dilemma of low-performing students, the simple solution to the problems would appear to be retention, holding a repetition of a year’s worth of material does little to help students who have failed. Several comprehensive reviews of the literature on retention have resulted in similar conclusions: grade retention as typically practiced is an ineffective if not harmful practice. The findings of this study will path the way for the teachers to enhance learning and retard forgetting.

At the pedagogical level, the learning activities designed for this study can serve as guides for ways in which both to design new learning activities and modify existing ones to more effectively tap into the cognitive processes of second language vocabulary learners. In this way, this study can contribute to second language vocabulary learning research, curriculum and materials development, pedagogical practice, and self-study methods.

The intended audience for this study is researchers, materials designers, curriculum developers, teachers, and language learners. The findings of this study should encourage researchers to continue to look beyond the limited boundaries of second language research to fields such as educational and cognitive psychology for theories and ideas to test in the field of second language learning. This study should also serve as an impetus to curriculum and materials developers to consider how people learn, and to design second language learning experiences and materials that more fully exploit those learning process. Additionally, I hope that this study stimulates curriculum and materials developers and teachers to think “outside the box” when design-

ing learning activities. Finally, individual learners can benefit from this study in that it provides them with a clearer idea of what they can do to make new words “stick” in their memory.

### Research Question

To fulfill the purpose of this study, this research question was raised:

Do retrieval activities have any significant effect on vocabulary learning of Iranian EFL Learners?

### Retrieval Task

People often lament that they have a bad memory for names. However, failing to remember a name may have more to do with the inherent difficulty of remembering names, and the social conditions under which people try to learn names, than with people’s bad memory for names. There are several reasons why it is not surprising that we have difficulty remembering names in social situations. Introductions often involve a single presentation of a person’s name, and the person’s name is rarely repeated in the conversation. Little additional information about the person is given during the introduction.

The most important factor is that the ongoing conversation diverts attention away from learning the person’s name. Researchers have identified techniques that can help people improve their ability to learn and remember names. The face name mnemonic represents an encoding strategy that emphasizes what the learner can do at the time the face name pair is presented in order to be able to recall the name at a later time. Carney, Levin, and Stackhouse (1997) describe three steps for using the face name mnemonic. For example, to learn the name “Belmont” the steps would be: (1) identify a prominent feature of the person’s face (e.g., a large protruding ear); (2) recode the person’s name as a more familiar “name clue” that acoustically resembles a salient part of the name (e.g., bell); and (3) create an interactive image of the “name clue” and the prominent facial feature (e.g., imagine the person is wearing a bell as an earring on his large protruding ear). Research studies have confirmed the effectiveness of this imagery-based mnemonic when the participants’ only activity was learning names (e.g., Carney *et al.*, 1997; Morris, Jones, & Hampson, 1978). When participants learned names while engaged in brief conversations, however, the face name mnemonic was not effective. The substantial

effort required to learn and to implement the technique make it a less desirable option for learning names.

Morris, Fritz, Jackson, Nichol, and Roberts (2005) demonstrate the effectiveness of a semantic encoding strategy that is less demanding than the face name mnemonic. This strategy involves paying careful attention to the person’s name when he/she is introduced to foster semantic encoding. To implement the strategy participants were encouraged during the introductions to think carefully about the meanings of the names to make it easier to remember them. Name recall for participants who used the semantic encoding strategy was nearly double that of those who did not use it. The benefits of encoding strategies represent only one way to enhance name recall.

Landauer and Bjork (1978) propose that retrieval could be helpful in learning and remembering names in social situations. In social situations names are not likely to be repeated during the conversation. Landauer and Bjork argue that this obstacle could be overcome by successfully retrieving the name using self-administered tests after the person has been introduced. The ease with which retrieval can be done makes it a viable option when people try to learn names while engaging in conversation. Landauer and Bjork (*ibid*) conduct two experiments to determine the effectiveness of retrieval practice for learning names and to identify the optimum schedule for the retrievals. College students in the first experiment were “introduced” to 12 people using a deck of cards with each card having the first and last names of a fictitious person. Repeated tests followed the introductions of 10 of the 12 people (presentation of the first name as a retrieval cue for recall of the last name). These within-list tests were presented according to a massed schedule (no interval between tests), a uniform schedule (equal intervals between tests), or an expanding schedule (increasing intervals between tests).

Balota, Duchek, and Logan (2007) summarize the conditions that are necessary to confirm that effects like those found by Landauer and Bjork (1978) are due to retrieval processes and, more specifically, to the distribution of retrievals. One critical comparison contrasts retrieval conditions with conditions in which to-be-remembered items are re-presented. This comparison is essential to determine whether the improvement in name recall could be due to the re-presentation of the name that accompanies a successful retrieval.

As a teacher, when faced with the dilemma of low-performing students, the simple solution to the problems would appear to be retention, holding a student back to repeat a particular grade level for a second year. Simple repetition of a year's worth of material does little to help students who have failed. Several comprehensive reviews of the literature on retention have resulted in similar conclusions: grade retention as typically practiced is an ineffective if not harmful practice. The findings of this study will path the way for the teachers to enhance learning and retard forgetting.

At the pedagogical level, the learning activities designed for this study can serve as guides for ways in which both to design new learning activities and modify existing ones to more effectively tap into the cognitive processes of second language vocabulary learners. In this way, this study can contribute to second language vocabulary learning research, curriculum and materials development, pedagogical practice, and self-study methods.

### **Memory Retrieval Strategies**

There is also evidence that memory retrieval processes have a strategic component and can be different from one individual to another depending on the activity at hand. Explicit retrieval involves many demands that can be separated broadly into processes related to memory search (attempt) and processes related to retrieval success (recognition or recall) (Buckner & Koutstaal, 1998). The concept of search captures, heuristically, the set of processes by which we attempt effort fully to gain access to past information and has generally been discussed in terms of two prominent retrieval strategies: direct retrieval and familiarity/plausibility judgment (Singer, Gagnon & Richard, 2002; Reder, 1978). Virtually all viewpoints are in agreement on the assertion that a person's preferred strategy for question answering is direct retrieval (unambiguous matching of probe to target in memory). However, when the relevant information to make a direct retrieval decision is not highly available, for instance, in the case of uncertainty, then familiarity/plausibility judgments are actively inferred (Reder, 1982). Retrieval strategies have been alternately evaluated using either response times or signal detection analyses, which are derived from response accuracies. In signal detection analyses of memory phenomena, it is assumed that studied target items and no studied distracters differ in their average familiarity ("strength"). In a recognition test, items are accepted as being

old/studied if their strength exceeds a response criterion. Criterion placement is influenced by factors such as the relative frequency in the test list of targets and distracters, and the costs associated with missing a target or accepting a distracter (a "false alarm") (MacMillan & Creelman, 1991).

## **Methodology**

### **Participants**

The subjects who participated in the present study were 40 Iranian adult (aged 17- 24) female and male EFL learners at the intermediate level of English proficiency studying in Parto Institute. Moreover, the participants had 10 to 18 months of experience in learning English in aforementioned institute. Therefore, to find a homogenous group of participants, a PET was administered to 60 learners, out of which 40 participants who scored one standard deviation above and below the mean were finally chosen for this study. They were then, equally divided into two groups on a random basis. 20 students were assigned to the experimental group and 20 were assigned to the control group.

### **Procedure**

Before starting the instruction, the researcher-made vocabulary test was administered as a pretest: the researcher gave a word list included 80 multiple-choice vocabulary items to the participants in both control and experimental groups; Eighty concrete nouns, adjectives and verbs were chosen from the book "Vocabulary for High School students" By Levin. Students were instructed to read each item carefully and answer the questions to the best of their ability. This test was administered to make sure learners are not familiar with target vocabulary items. Finally, 60 unknown vocabulary items were selected for the treatment. Then, the treatment was done based on the following stages:

**Learning Phase:** During this stage, subjects were presented a vocabulary word with its definition as well as its synonyms (cue-target pairs). After a study presentation, subjects were given an additional chance to learn each pair. In each session, 5-6 vocabularies were demonstrated and explained by the teacher.

**Retrieval Activity Phase:** Participants were instructed to retrieve exemplar words in response to a cue consisting of the first two letters of the exemplar (e.g., initiate → beg) or vice versa (begin → ini). Participants were allowed 10 seconds to complete each

exemplar. This first retrieval attempt occurred after the item's presentation has been cleared from the primary memory. Subjects were not given feedback about the accuracy of their responses on these stages.

**Retrieval Interval Test Phase:** This test was administered at 4 different intervals of the study. The students were asked to complete the synonym of the words by given cues. The purpose of the test was to see to what extent the subjects could remember the learned words. It was given only to the experimental group on the 1st, 2nd, 3rd and 4th week after the treatment started.

**Post Test Phase:** The posttest was researcher-made, which was administered 4 weeks after the instructional period and were given to both groups. From sixty items, forty vocabulary items randomly selected from among the provided words to the control and experimental groups to reveal the efficacy of the treatment.

As cited above, the purpose of the study was to see if using retrieval activity had any significant effect on vocabulary learning. Subjects were randomly selected and homogenized regarding their level of proficiency. They were randomly assigned to control and experimental groups. Thus this study had a quasi-experimental design with two sample groups. Then the experimental group went through the intervention in comparison to the control group with no treatment. At the end of the treatment both groups were exposed to a post-test.

## Results and Discussion

First, to check the normality within each group, the statistic of skewness was divided by the stan-

dard error of skewness. As it is clear from Table 1, the results were 1.29 (.66 / .51) for the experimental group and 1.43 (.73 / .51) for the control group. Because the values were between -1.96 and 1.96, we can conclude that the scores were normally distributed in each group. Therefore, the researcher was able to run a t- test.

**Table 1. Descriptive statistics of the experimental and control group before doing main study.**

Group	N	Mean	Std. Deviation	Skewness	
				Statistic	Std. error
Experimental	20	20.90	6.94	.73	.51
Control	20	21.95	8.09	.66	.51

Now, before doing the main data analysis, the PET, as the pre-test of the study, was administered to see whether there is any significant difference between the experimental and control groups before treatment. The results of the independent sample t-test for PET were shown in table 2.

According to table 2, the p-value for PET is 0.662. Therefore, we can conclude that there is no difference between the PET mean scores of the experimental and control groups. In other words, there is no significant difference between the PET mean scores of the experimental and control groups.

Now, in order to see whether there is any significant difference between the experimental and control group after doing the treatment, another independent sample t-test was run.

**Table 2. Independent sample t-test for pretest in experimental and control group.**

		Levene's test for equality of variances			t-test for equality of means					
		F	Sig.	df	Sig. (2-tailed)	Mean difference	Std. error difference	95% confidence interval of the difference		
								Lower	Upper	
Vocabulary scores in pretest	Equal variances assumed	1.60	.214	38	.662	1.05000	2.38457	-3.777	5.8773	
	Equal variances not assumed			37.14	.662	1.05000	2.38457	-3.781	5.8810	

**Table 3. Mean sample posttest for experimental and control group.**

Group	N	Mean	Std. Deviation	Std. Error Mean
Experimental	20	30.20	4.37	.97
Control	20	15.55	3.47	.77

As it is clear from table 4, there is a statistically significant difference between students' performance in experimental and control group ( $t=11.7$ ;  $P=.001$ ). In addition, according to table 3, subjects scored higher in experimental group ( $M=30.20$ ,  $SD=4.37$ ) than pretest ( $M=15.55$ ,  $SD=3.47$ ). With respect to these results, we can verify the effect of retrieval activity on the subjects' vocabulary scores. In other words, using retrieval activity can play a role in enhancing vocabulary learning of Iranian EFL learners.

**Table 4. Independent sample t-test for posttest in experimental and control group.**

		Levene's test for equality of variances		t-test for equality of means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean difference	Std. error difference	95% confidence interval of the difference	
									Lower	Upper
Vocabulary scores in posttest	Equal variances assumed	1.935	.172	-11.7	38	.001	-14.65000	1.24831	-17.18	-12.1
	Equal variances not assumed			-11.7	36.14	.000	-14.65000	1.24831	-17.18	-12.1

## Conclusions and Recommendations

The present study took a critical look at the use of retrieval activity in the classroom, and the researcher believes that the evidence suggests that repeated retrieval could be effectively used in an education setting to increase learning. Repeated retrieval could be particularly helpful when the long-term retention of material is important. This study produced a small but significant improvement in performance by requiring just retrieval of the material. Consistent with previously cited research, it would be useful to confirm the prediction that additional retrieval could increase learners' performance in vocabulary learning.

Practicing retrieval is a powerful way to enhance learning and retention. Wheeler et al. argued that when items are retrieved they become more resistant to being forgotten, and this was true for the retrieved items in the item-specific measure. It is possible that the act of retrieval fixes an item in memory, strengthening the memory traces, and increasing the accessibility of the item in the memory

system. It is assumed that the more an item is retrieved the stronger the trace will become and the more resistant the memory will become to being forgotten.

Consistent with the belief that the quantity of separate retrieval events would increase retrieval strength is the related idea that the quality of retrieval would have an effect on future retrieval. It was predicted that the strength of the memory trace would be related to the level of effort needed to retrieve the material, i.e., more retrieval effort would create stronger memory traces.

### *Pedagogical Implications*

The findings of this study can be of great help to different groups of people ranging from curriculum developers to learners of English in different ways. It will help curriculum developers and syllabus designers through which they will be able to plan the course books to enhance vocabulary learning. That is, by considering the fact that students learn and retrieve new vocabularies more properly through retrieval activity, curriculum developers and syllabus

designers will have the opportunity to design and put more effective and practical exercises on vocabulary in the course books.

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