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Effects of Incidental L2 Vocabulary Learning Tasks on Communicative Knowledge of Iranian Efl Learners with Different Proficiency Levels

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Abstract: This paper investigated the effect of incidental receptive and productive learning tasks on reading comprehension and the use of taught words in writing in Persian EFL learners with different proficiency levels. To this end, a quick Oxford Placement Test (OPT) was administered to the junior students population studying English teaching in Khorasgan Azad university and based on their OPT scores, two samples of 40 male and female students were selected and assigned to low intermediate and high intermediate group. The students in each group were randomly divided into two equal groups of 20 each. One group in each proficiency level was taught 15 target words receptively, while another group learned the same target words productively. After the treatments, two tests measuring reading comprehension and writing were administered to each group. The Scores of the groups in each level were analyzed via a one-way MANOVA. The results indicated that both proficiency groups who had learned their target words productively outperformed the receptive participants on the writing test significantly. Similarly, the receptive reading groups did significantly better on the comprehension tests. The findings of this study revealed that receptive vocabulary learning may be more beneficial to understanding a text and productive learning is more effective in improving the use of students' taught words in writing. Moreover, it was found that proficiency would be of little significance in the interaction between vocabulary learning task and communicative gains of learners.

Key words: Receptive learning · Productive learning · Comprehension · Writing, EFL (English as a Foreign Language) · L2 (second language)

INTRODUCTION

L2 Vocabulary Knowledge: Although vocabulary is regarded as an essential element in L2 learning, less attention has been paid to the theoretical establishment of vocabulary learning than that of L2 grammar learning. However, there has recently been a noticeable increase in L2 research into vocabulary learning. It has been only recently, after extensive focus on grammar, that SLA researchers and second language teaching experts have started paying more attention to vocabulary learning and teaching. In fact, some researchers now claim that, compared to the other components of language, vocabulary is the most essential one [1].

Interestingly, others such as Meara have gone even further by calling it 'the heart of communicative competence'. It is one of the language components which has direct impact on academic language achievements. Lexical competence is especially needed for EFL/ESL learners. But what does it really mean to know a word?[2].

The L2 vocabulary research has mainly dealt with the issues like 'what it means to know a word' and 'how words are learned and how they are used ' That is, L2 vocabulary research has been devoted to the identification of lexical knowledge and the memorization, storage and retrieval of lexical knowledge [3].

Some researchers such as Richards, 1976; Gass and Selinker, 2001; Nation, 2001; cited in [4] propose models of word knowledge which consists of separate traits (known as separate trait models). These models divide lexical knowledge into a set of descriptive criteria. For example, Nation [5] listed the aspects of the lexical knowledge in four categories: form (spoken and written form), position (grammatical behavior and collocation patterns), function (word frequency and appropriateness) and meaning (conceptual content and word associations).

Henriksen [6] suggests that the construct of lexical competence should consist of three dimensions: a "partial-precise knowledge" dimension in which levels of knowledge are equal to different levels of word

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comprehension, a "depth of knowledge" dimension which also covers knowledge components identified in the vocabulary depth dimension and a "receptive-productive" dimension which concerns how well a learner can access and use a word. According to Henriksen [6], when learners cannot use a word correctly or cannot access it freely for production it does not mean that they do not "know" the word; but they have not yet achieved adequate control over word access. The receptive and productive dimension of lexical knowledge is "a bridging dimension between lexical competence and performance" [7].

Therefore, with regard to the acquisition of L2 vocabulary knowledge and its use, on the other hand, we also need to distinguish between receptive (passive) and productive (active) vocabulary knowledge, since these types of lexical knowledge – receptive vs. productive - require different amounts of learning time, different effects on vocabulary acquisition and different learning methods [5,8-11].

Moreover, There are two approaches to vocabulary acquisition, intentional or direct learning and incidental or indirect learning. In intentional vocabulary learning, a deliberate attempt is made to learn words. In incidental vocabulary learning, words are acquired through exposure to the language while the learner focuses on the usage. This study focuses on the incidental learning of vocabulary both receptively and productively.

Receptive vs. Productive Vocabulary Knowledge: Up to now, many scholars have made definitions from different perspectives for receptive and productive vocabulary knowledge. "Receptive knowledge" is defined as "being able to understand a word" [12]; and it includes words which can be understood or recognized as individuals can assign their meanings while listening or reading (sometimes imperfectly) and which are also less well-known and less frequent in use and not used spontaneously [13]; it is the ability to perceive the form of the word and to retrieve its meaning(s) [14]; it is the knowledge of the meaning of an L2 word; prototypically, being able to translate a word from L2 to L1 [10]; and it refers to the ability of the learners to understand a word's meaning [4].

In regard to productive vocabulary knowledge, it includes the production of a word of "one's own accord" [12]; it refers to words that can be written or spoken frequently without hesitation as they are well-known and familiar [13]; and it requires retrieving the appropriate spoken or written word form of the meaning to be expressed [14].

In general, productive vocabulary use is considered to be more difficult than receptive vocabulary use, even though the specific reasons for this relative difficulty of productive use have not yet been discovered [5]. With respect to the learning process for receptive and productive vocabulary use, Mondria and Wiersma [10] claimed that receptive learning is less difficult than productive learning, since receptive learning requires less time than productive learning and receptive retention tests result in a better performance than productive retention tests.

How does vocabulary knowledge affect reading comprehension and writing?

Success in reading comprehension is usually seen as fundamental to the academic success of second language learners. Second language proficiency often assumes vocabulary and grammar as knowledge and reading as the ability to understand the text [15]. Research consistently reveals that vocabulary knowledge heavily relates to reading comprehension more so than other factors such as grammar knowledge [15]. Laufer [16] has written, "No text comprehension is possible, either in one's native language or in a foreign language, without understanding the text's vocabulary" (p. 20). Hence, without understanding the meaning of words, second language readers may have a hard time developing comprehension. Consequently, vocabulary seems to be an important factor in reading comprehension [17].

While there have been many Ll studies investigating the effects of vocabulary instruction on comprehension, there have been very few L2 studies. Johnson [18] found that studying the definitions of target words prior to reading a passage had no significant effects on two comprehension tests. However, very little detail was given about the instruction including how much time was spent on the task.

Webb [19] investigated the effects of pre-learning vocabulary on reading comprehension and writing. Japanese students studying English as a foreign language (EFL) learned word pairs receptively and productively; four tests were used to measure reading comprehension, writing and receptive and productive vocabulary knowledge. The findings suggest that pre-learning EFL vocabulary may be an effective method of improving reading comprehension and writing. Participants who completed the productive learning task had higher scores on the writing test and on the test of productive vocabulary knowledge, while participants who completed the receptive learning task had higher scores on the comprehension test.

The results of previous research comparing receptive and productive learning from word pairs [8-20] indicate that the productive task is more effective than the receptive task in increasing productive knowledge. Since writing is essentially a productive task, the findings suggest that productive learning from word pairs may be more effective. Since there have been so few studies, further investigation of the effect of vocabulary instruction on writing is needed. This is particularly apparent with L2 research for which there do not appear to be many studies that have specifically addressed this issue.

The relatively few empirical studies that have addressed receptive and productive learning have produced contradictory findings and, therefore, offered conflicting implications for foreign language teaching. Moreover, these studies are limited to a certain proficiency level and therefore their results are not generalizable to all levels of proficiency. Informed by the previously cited research, this study investigated the size of communicative gains in knowledge (reading comprehension and writing) through incidental receptive and productive learning of vocabulary in students with different levels of proficiency. Specifically it examined the following hypotheses:

Hypotheses: To investigate the effects of incidental L2 vocabulary tasks (productive vs. receptive) on communicative knowledge of Iranian EFL learners with different proficiency levels, the following hypotheses were formulated:

- Receptive learning of vocabulary leads to more successful comprehension of the vocabulary in reading than productive learning in both low intermediate and high intermediate EFL learners.
- Productive learning of vocabulary leads to more successful use of the vocabulary in writing than receptive learning in both low intermediate and high intermediate EFL learners.
- Results do not differ among individuals with different proficiency levels.

Methodology

Participants: The participants in this experiment were two groups of 40 Iranian EFL learners (both male and female) in Azad University of Khorasgan, Iran. They were chosen through a quick OPT (Oxford Placement Test) and divided into two groups, low intermediate and high intermediate, based on their OPT scores. Subjects whose scores ranged from 30 to 39 were considered as low intermediate and those who scored 40 to 47 were regarded as high intermediate group. The subjects in each proficiency level were randomly assigned to the experimental groups.

Material: A quick OPT was used in this study to determine the level of proficiency of potential subjects. 15 target words (9 nouns and 6 verbs) were chosen from Nation's BNC list at 10^{th} level of frequency. Nine nouns and six verbs were selected as target words because nouns and verbs are the most common parts of speech found in natural text and the 9:6 ratios approximates their proportional frequency of occurrence in language use [20] The number of target words was determined during pilot studies. Pilot studies were conducted with five EFL learners in Shahrekord Azad university to determine the time needed for the subjects to complete the treatment and the dependent measures and the number of words needed to carry out the experiment. The selected target words were replaced with disguised forms to ensure that the subjects had no prior knowledge of the target words. All of the disguised forms were two syllables and resembled English words phonetically and orthographically.The disguised forms and their English meanings were as follows: napid (bubble), zotel (hairdryer), tamel (bookshelf), folid(yarn), todest(sunflower), labit(subway), heper(bangle), raggle (dormitory), jartner (aquarium), melect (glisten), tansel (hunch), nasin(brandish), toncop (dabble), cader(chuckle), hodet(clasp).

Moreover, 2 tests were used to measure the effects of receptive and productive learning tasks on writing and reading comprehension. The first test that was administered after the treatments was a picture description test. It was used to measure the subjects' use of the target words in writing. The comprehension test followed the picture description test. The comprehension test used a true/false format (See appendix).

Design and Procedure: Four experimental groups (two low intermediate and two high intermediate groups) were used in this study to examine the effects of receptive and productive learning on writing and reading in both low intermediate and high intermediate levels of proficiency. One experimental group in each proficiency level studied l5 L2 target words receptively and the other group studied the same target words productively. Subjects in the receptive treatment met each target word in word pairs and in three sentences. The target words were presented

on the left of their Persian equivalents followed by the sentences. The contexts were from the British National Corpus. In each sentence, the target words were underlined and written in bold. In the following example the meaning of the target word
'Napid' is *bubble*.

Napid حباب

- Use tubes of varying diameters and lengths and special napid pipes.
- That the air napid or the gas napid, I keep saying air napid, that's wrong.
- He was burning something in a small crucible, watching it napid.

In the productive treatment, the target words were presented in the same word pairs followed by space to write each target word in a sentence. For example,

Napid حباب

Each group was given six minutes to complete their task. Two tests measuring writing and comprehension were administered immediately after the treatments. The writing test was given first followed by the comprehension test. The results of the groups in each proficiency level were compared via a multivariate analysis of variance (MANOVA) to determine if the type of task (receptive and productive) affects the performance of learners on the dependent variables (picture-description and true-false tests) in both levels of proficiency.

RESULTS

The descriptive statistics (means, standard deviations and number of subjects) of picture description test and reading comprehension test in low intermediate group are reported in Table 1. The results show that the subjects that learned the target words in the productive task outperformed those that completed the receptive task on the picture description test. To determine whether there were any overall differences among the treatment groups, a multivariate analysis of variance (MANOVA) was performed using the scores on the two dependent measures (picture description test and reading comprehension test). The independent variable was the type of learning task (receptive and productive learning of vocabulary). The MANOVA revealed an overall significant multivariate main effect for the task, Wilks' lambda is. 795, F (2,37)= 4.782, P<.05.Thus, it can be concluded that task had a significant effect on the dependent variables (The results are shown in table 2).

Given the significance of the overall test, the univariate main effects were examined. Table 3 shows that the productive group significantly outperformed the receptive group on the picture description test (F(1,37)= 4.591, p<.05). Moreover, the receptive group demonstrated larger gains on the reading comprehension test (F(1,37)= 6.866, p<.05). A summary of the statistical analysis is shown in table 3.

In the high intermediate group, like the low intermediate group, subjects in the productive tasks outperformed the receptive group on the picture description test. A summary of the statistical analysis is shown in table 4.

Table 1: Descriptive Statistics(LOW-INTERMIDIATE)

	TASK	Mean	Std. Deviation	N
pic_description	RECEPTIVE	7.8000	1.67332	20
	PRODUCTIVE	9.0000	1.86378	20
	Total	8.4000	1.85085	40
comprehension	RECEPTIVE	10.7000	1.17429	20
	PRODUCTIVE	9.7500	1.11803	20
	Total	10.2250	1.22971	40

Table 2: Multivariate Tests(c) (low intermediate)

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
TASK	Pillai's Trace	.205	4.782(a)	2.000	37.000	.014	.205
	Wilks' Lambda	.795	4.782(a)	2.000	37.000	.014	.205
	Hotelling's Trace	.259	4.782(a)	2.000	37.000	.014	.205
	Roy's Largest Root	.259	4.782(a)	2.000	37.000	.014	.205

a Exact statistic

Table 3: Tests of Between-Subjects Effects (low intermediate)

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
TASK	pic_description comprehension	14.400	1	14.400	4.591	.039	.108
		9.025	1	9.025	6.866	.013	.153

a R Squared =. 108 (Adjusted R Squared =. 084)

Table 4: Descriptive Statistics (High intermediate GROUP)

	TASK	Mean	Std. Deviation	N
pic_description	RECEPTIVE	9.2000	1.00525	20
	PRODUCTIVE	10.4500	1.53811	20
	Total	9.8250	1.43021	40
comprehension	RECEPTIVE	13.1000	1.74416	20
	PRODUCTIVE	9.0000	1.25656	20
	Total	11.0500	2.56155	40

Table 5: Multivariate Tests (High intermediate Group)

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
TASK	Pillai's Trace	.671	37.802(a)	2.000	37.000	.000	.671
	Wilks' Lambda	.329	37.802(a)	2.000	37.000	.000	.671
	Hotelling's Trace	2.043	37.802(a)	2.000	37.000	.000	.671
	Roy's Largest Root	2.043	37.802(a)	2.000	37.000	.000	.671

a Exact statistic

Table 6: Tests of Between-Subjects Effects(High intermediate Group)

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	PartialEtaSquared
TASK	pic_description	15.625	1	15.625	9.256	.004	.196
	comprehension	168.100	1	168.100	72.754	.000	.657

a R Squared =. 196 (Adjusted R Squared =. 175)

Table 5 shows the results of the multivariate tests in the high intermediate group. The MANOVA revealed an overall significant multivariate main effect for the task, Wilks' lambda is. 329, $F(2,37)= 37.802$), $P<.05$.Thus, it can be concluded that task had a significant effect on the dependent variables.

Given the significance of the overall test in the high intermediate group, the univariate main effects were examined (table 6). Significant differences were found on the picture description test ($F(1,37) = 9.256$, $p<.05$).On the reading comprehension test, receptive group significantly outperformed the productive group($F(1,37) = 72.754$, $p<.05$).

Following the results, task did have a significant effect on the dependent variables in both low intermediate and high intermediate groups. As table 1 and 4 show, the receptive group significantly outperformed the productive group on the reading comprehension test. Thus, Hypothesis 1 is supported. That is, receptive learning of vocabulary led to more successful comprehension of the vocabulary in reading than productive learning in both low intermediate and high intermediate EFL learners.

Moreover, the productive writing group outperformed the receptive reading group on the picture description test and their scores were significantly higher. Therefore, Hypothesis 2 is also confirmed. That is, Productive learning of vocabulary from writing led to more successful use of the vocabulary in writing than receptive learning in both low intermediate and high intermediate EFL learners.

Although there were some differences in the univariate main effects between low intermediate and high intermediate group, the results of MANOVA revealed an overall significant multivariate main effect for the task in both groups. The same results were obtained for students with different proficiency levels, that is, task had a significant effect on reading comprehension and picture description tests in both levels of proficiency. Based on the results, hypothesis 3 is confirmed, too. Results did not differ among individuals with different proficiency levels.

DISCUSSION

This research investigated the relative effectiveness of incidental receptive and productive learning on comprehension and writing. A comparison of the two tasks in both low and high intermediate groups indicated that receptive learning contributed to significantly higher scores on the comprehension test than productive learning. Moreover, the productive writing groups in both levels of proficiency did significantly better on the picture description test.

The results of this study also revealed that proficiency was of little significance in the interaction between vocabulary learning tasks and communicative knowledge of learners since productive learning of vocabulary led to both high and low intermediate Learners' higher gains on writing and receptive learning led to their higher scores on comprehension test. Therefore, learning tasks affected communicative gains of learners in both groups in the same way, regardless of their level of proficiency.

The results of the picture description and comprehension tests suggest that receptive vocabulary learning may be more beneficial to understanding a text and productive tasks may have a greater effect on writing. This is supported by earlier findings that have shown that receptive learning from reading is better suited to developing receptive vocabulary knowledge [8-10-11-20]. Therefore, if the primary aim of instruction is to improve comprehension, receptive tasks may be more effective.

Since previous research has indicated that productive tasks may be effective [21] and that productive learning might be better suited to developing productive vocabulary knowledge than receptive learning [8-11-20], it should not be surprising that productive learning from writing was superior on the picture description test. Writing is essentially a productive task that involves several different types of productive vocabulary knowledge. To write a sentence, learners must produce the forms of the words and then use them with syntactic, semantic and grammatical accuracy. Since receptive learning tends to focus learners on understanding language rather than producing it, it would be puzzling if receptive tasks were more effective than productive tasks in improving writing.

Taken as a whole, the results of the picture description and comprehension tests suggest that L2 vocabulary learning may improve comprehension and writing with performance dependent on the method of instruction. Receptive learning from reading was found to be a more effective method of increasing comprehension than productive learning from writing. In turn, this suggests that receptive learning may be better suited to improving comprehension than productive learning. Productive learning from writing was found to be better suited to improving writing than receptive learning from reading. This suggests that productive tasks may be more effective if the aim is to use taught words.

In regard to instructional practice, the results of this study help teachers and students know that which tasks are more useful for acquiring which aspect of communication. It will also show what each task contribute to vocabulary knowledge as well as which tasks may complement each other to improve learning. Those involved in vocabulary learning should be aware that the tasks that are used might have a powerful effect on what learners can and cannot do with a word. Since the majority of tasks used in vocabulary learning are receptive, they are well suited for improving receptive knowledge or comprehension but less appropriate for improving the use of taught words productively. Common teaching methods such as providing a definition or translation and looking up words in the dictionary may be more conducive to increasing receptive knowledge. However, if the aim of a learner or an instructional program is to improve speaking and writing, teachers and learners need to be aware that they may be more successful if they use productive tasks. If their goal is to improve overall language skills, the results indicate that a combination of receptive and productive tasks may prove to be most effective.

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Appendix

(reading comprehension and writing test sample)

Picture Description Test.

Write one sentence about each picture using a word that you learned today.

1. 

2 

True/False Comprehension Test.

Circle true or false for each sentence.

1.There were a lot of napids in the air.	True/ False
2. Students sometimes bring napids to school.	True/ False
3.Children usually use a zotel when they want to eat lunch	True/ False
4. People usually use a zotel at home.	True/ False