

Vocabulary Acquisition through Written Input: Effects of Form-focused, Message-oriented, and Comprehension Tasks

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Abstract

The present study investigated the effect of form-focused and non-form-focused tasks on EFL learners' vocabulary learning through written input. The form-focused task aimed to draw students' attention to the word itself through word recognition activities. Non-form-focused tasks were divided into (a) the comprehension question task, which required an overall understanding of the text without focusing on any words; and (b) the message-oriented task, which pushed the learners into considering the context surrounding the word. The selection of the tasks was based on the notion of *task-induced involvement* and the *Involvement Load Hypotheses* (Laufer & Hulstijn, 2001). Forty-five EFL learners were given a list of words in order to discover unfamiliar target words. During the treatment phase, participants were asked to read a text containing target words and to perform one of the three tasks. Results show that the retention of unfamiliar words was higher in the two experimental groups (form-focused and message-oriented) than the control group (comprehension-question). Furthermore, the form-focused task yielded better results than the non-form-focused tasks (comprehension-question and message-oriented). These findings provide evidence for Laufer and Hulstijn's involvement model in which task effectiveness hinges upon the degree of involvement tasks induce.

Keywords: comprehension-questions task, form-focused task, incidental vocabulary learning, involvement load hypothesis, message-oriented task, task-induced involvement

Introduction

Vocabulary acquisition is considered to be an important aspect of foreign language learning. L2 educators often assume that one main source of vocabulary growth is

instruction. Toward the second half of the 1980s, vocabulary began to receive attention after a period of neglect. Seal (1991) explains three reasons that would account for this renewal of interest in vocabulary: (a) the notion that second language learners develop their own internal grammar deemphasized the traditional teaching of structure; (b) shifts toward communicative methodologies; and (c) the perceived needs of EAP (English for Academic Purposes) students have had the effect of elevating the importance of vocabulary in recent years. Although the long neglected issue of vocabulary acquisition is currently receiving more attention in second language pedagogy and research, it is still far from clear how learners acquire vocabulary or how it can best be taught. As Milton (2009) argues, “[F]or much of the last half century or so, therefore, the consideration of vocabulary in the process language learning, testing and teaching appears to have been sidelined” (p. 1). In view of the fact that more than two decades of findings on incidental/intentional and form-focused/non-form-focused vocabulary acquisition are far from conclusive, there is a need for research on the effect of various tasks in terms of involvement load they produce during learners’ processing of new lexical items. This study aims to contribute to scholarship on vocabulary acquisition.

Review of the Literature

As the focus of the present study was on the impact of different tasks on lexical development, this section will be allocated to the nature of vocabulary learning, particularly in the context of reading and through different form-focused and non-form-focused tasks.

Deliberate or intentional vocabulary learning

Deliberate vocabulary learning is an important part of a vocabulary learning program. Schmitt (2008) argues that although research has demonstrated learning can occur through incidental exposure, intentional vocabulary learning almost always leads to greater and faster gains as well as better retention. Studies comparing incidental vocabulary learning with direct vocabulary learning show that direct learning is more effective (e.g., Lehmann, 2007; Peters, Hulstijn, Sercu, & Lutjeharms, 2009) and that Focus on Form (FonF) vocabulary tasks, at least in the short run, leads to greater gains than FonF activities (e.g., Laufer, 2006). This is not surprising as intentional or deliberate learning is more focused and goal-directed than incidental learning. Nonetheless, Nagy (1997) claims that teaching vocabulary is a waste of time. His two main justifications given for this position are the large number of words in English and the large amounts of time needed to deliberately teach vocabulary (Nagy, 1997).

On the contrary, according to Nation (2001), the strong argument supported by L1 research cannot be applied to second language learning. He claims that the arguments against direct teaching mostly apply to low-frequency words, not the high-frequency words that non-native speakers need to know. His second reason in favour of direct teaching for second language learners is that direct teaching can add to incidental learning of the same words and can raise learners’ awareness of particular words so that they will notice them when they see them while reading. According to Nation and Meara (2002), deliberate vocabulary learning can have three major goals. It can result

in well-established vocabulary learning, raise learner's consciousness of particular words, and help learners gain knowledge of strategies that will be useful while learning a large number of words.

Incidental vocabulary learning

In its general educational sense, incidental learning refers to learning without the intent to learn. For instance, a learner might learn vocabulary even though the primary goal may be to comprehend the general idea of a text or communicate. (Schmidt, 1994; as cited in Laufer & Hulstijn, 2001). According to Laufer and Hulstijn (2001), in this general definition the presence or absence of an upcoming test after the task is not addressed. Nonetheless, the absence of learners' awareness of the upcoming test makes incidental learning so widely used in the field of foreign and second language learning domain.

Incidental vocabulary learning is defined as the acquisition of vocabulary as a by-product of any activity not explicitly related to lexical acquisition. Laufer (2003) states:

Incidental learning does not mean that the learners do not attend to the words during the task. They may attend to the words (for example, using them in sentences, or looking them up in dictionary), but they do not deliberately try to commit these words to memory. (p. 574)

As the size of L1 vocabulary cannot be explained by formal instruction only and considering the definite gap between what is taught and what is known, researchers argued that many words are acquired incidentally through reading input (Krashen, 1989; Nagy, 1997; Nagy, Herman, & Anderson, 1985). Compared with intentional learning, incidental learning is associated with more natural vocabulary learning (Bruton, López, & Mesa, 2011). It is also strongly believed by some researchers that learners can acquire words through exposure to texts and by guessing the meaning of unknown words while reading (Coady, 1997; Krashen, 1989; Nagy, 1997). Based on Schmitt's (2008) review of vocabulary learning research in the context of L2 learning, early studies of incidental learning were rather discouraging in that they documented small vocabulary gains; however, a number of studies have reported more gains (Brown, Waring, & Donkaewbua, 2008; Horst, 2005; Pigada & Schmitt, 2006; Waring & Takaki, 2003). There is even evidence that incidental vocabulary learning is either greatly or slightly more effective than the intentional (Ahmad, 2011; Lehmann, 2007). For instance, Ahmad (2011) found that incidental learning brought about better results in the acquisition of 50 new words by Saudi learners than intentional learning.

Many variables may also affect incidental vocabulary learning, such as context (Webb, 2008), L1 and L2 glosses (Yoshii, 2006), text comprehension (Pulido, 2004), L2 proficiency and topic familiarity (Pulido, 2003), and exposure frequency (Rott, 1999). Nevertheless, using the context as the main strategy for incidental learning is not always a successful process because it is slow and prone to errors (Laufer, 2005; Nation, 2001; Read, 2004). Learners sometimes simply "fail to notice the presence of unfamiliar words or believe that they know a word when, in fact, they do not" (Hulstijn, Hollander, & Greidanus, 1996, p. 327). In some cases, when the meanings of unknown words are not inferable from the context, readers make erroneous inferences and learn

words incorrectly (Hulstijn, 1992). Even when correct guesses are made, they do not necessarily lead to word retention. As Carter (1998) claims, learners may be able to infer the meaning of lexical items, but this is not the same as recalling them. Evidence in support of this claim shows that a limited number of words can be acquired only through reading. Studies on second language vocabulary acquisition from reading (without enhancement tasks) show that pick-up rates of unfamiliar words range from one to five words in a text of over 1,000 words (Knight, 1994; Luppescu & Day, 1993; Meara, 1997; Zahar, Cobb, & Spada, 2001). Incidental vocabulary learning through reading alone does indeed take place suddenly, but incrementally and in small quantities. At this rate of growth, a second language learner would have to read thousands of texts in order to increase their vocabulary, which may prove to be a daunting and time-consuming means of vocabulary development.

There is widespread agreement in the literature that a lot of L2 vocabulary acquisition occurs incidentally. In support of this view, Hatch and Brown (1995) claim that although there are more than 450,000 entries in *Webster's Third International Dictionary*, university students in the United States know at least 200,000 of them. This is more than a person could ever possibly learn through direct instruction. The large number of words that are at the command of native speaker can only be accounted for by incidental means. The same reasoning would also apply to L2 vocabulary acquisition. According to Nation and Waring (1997), a second language learner should know the 3000 or so high frequency words of the language. Indeed, such gains in vocabulary could not be accounted for only by direct vocabulary acquisition. A way to manage such growth in vocabulary is through incidental learning.

Vocabulary learning through reading context and tasks

In the literature of foreign and second language, there is a general consensus that most vocabulary is learned through reading. Krashen (1989) emphasizes the importance of reading and claims that reading is comprehensible input, which provides an opportunity for the reader to comprehend language and develop more vocabulary. For this reason, it is important to investigate how L2 learners develop their vocabulary through reading, particularly with respect to the notions of vocabulary learning context and vocabulary learning task.

Regarding the notion of context, Nation and Coady (1988) define it as "context within a text" and "general context" (p.102). The authors define "context within a text" as the morphological, syntactic, and discourse information given in a text and "general context" as background knowledge of the subject matter. Several studies have emphasized the role of context and relevant strategies in guessing the meaning of unknown words while reading (e.g., Fraser, 1999; İstifçi, 2009; Skokouhi & Askari, 2010). Nagy (1997) also explains the importance of context in vocabulary learning from two different views: (a) what a word means in different occasions can be guessed from the contexts in which it is used; and (b) these contexts provide input of large amount of vocabulary that learners can pick up. Other studies have focused on incidental learning of vocabulary from the reading context (e.g., Brown, Waring, & Donkaewbua, 2008; Webb, 2008). According to Nation and Meara (2002), learning from meaning-focused input, which is learning incidentally through listening and reading, accounts for most

first language vocabulary learning. For such learning to be effective for non-native speakers, there needs to be a low unknown vocabulary load, a large quantity of input, and some deliberate attention to vocabulary. It is believed that reading and exposure to context result in incidental vocabulary acquisition (Coady, 1997; Nagy, 1997). The extent to which this exposure leads to retention of the meaning of unknown words is based on the degree of attention that is paid to them. This attention can result from tasks that cause learners to focus on specific features of input. One essential question is whether instructional tasks can be classified based on their vocabulary-learning achievements.

A vocabulary learning task can be approached from the cognitive perspective, which suggests that words are retained better if reading is supplemented with word-focused activities (Hill & Laufer, 2003; Hulstijn, 1992; Knight, 1994; Paribakht & Wesche, 1997). These activities can include using a dictionary, consulting a gloss, and performing text-based tasks. In each of these studies, one task is superior to others in terms of incidental vocabulary acquisition. Researchers (Craik & Lockhart, 1972; Craik & Tulving, 1975; as cited in Hulstijn & Laufer, 2001) believe that the superiority of the task is based on its depth of processing, degree of elaboration, quality of attention and awareness, and, in general, the nature of the information processing. However, it is hard to categorize tasks based on their degree of information processing, so it is difficult to know if a task is more effective than another task. According to Laufer and Hulstijn (2001) “research on task effectiveness would require the identification of criteria which could be observed, manipulated, and measured (p. 13).” In order to address this issue, they proposed a motivational-cognitive construct of involvement, defined as *Involvement Load Hypothesis*, which is based on the levels of processing framework and the attentional models in SLA. Laufer and Hulstijn proposed the notion of “involvement” to operationalize the construct of depth of processing. The thrust of the Involvement Load Hypothesis, as Martínez-Fernández (2008) describes, is that incidental tasks inducing higher involvement enhance the type of processing that is regarded as crucial for vocabulary retention. The notion of involvement comprises three task-specific components: the motivational component of “need” and the two cognitive components of “search” and “evaluation.” “Need” refers to “the drive to comply with task requirements, whereby the task requirements can be either externally imposed (moderate need, +N) or self-imposed (strong need, ++N)” (Laufer & Hulstijn, 2001, p. 14). “Search” (+S) and “evaluation” (+E) require the allocation of attention to form-meaning relationships. “Search” involves the attempt to discover the meaning of an unknown word through various strategies such as contextual guessing, consulting a dictionary, or asking the teacher. Finally, “evaluation” is defined as “a comparison of a given word with other words, a comparison of a specific meaning of a word with its other meanings, or combining the word with others in order to assess whether a word (i.e., a form-meaning pair) does or does not fit its context” (p. 14). The degree to which tasks may induce involvement leads to the noticing and processing of the words. Vocabulary retention hinges on the presence or absence of these three involvement components.

Input enhancement in vocabulary learning

Input enhancement is a pedagogical tool that aims to increase learners' awareness of language. The concept of input enhancement was introduced to address the assumption that comprehensible input is all that is needed for second language acquisition, a notion often associated with Krashen (1981). Schmidt (1990) and others (Barcroft, 2004; Leow, 1998; Simard & Wong, 2004; Wong, 2001) have challenged this position, emphasizing that while comprehensible input is a necessary ingredient for second language acquisition, it may not be sufficient. These researchers point out that some attention paid to form is beneficial and necessary for acquiring certain aspects of an L2.

Input enhancement for vocabulary learning refers to techniques that cause certain words to stand out so that learners may pay more attention to them. An example of input enhancement techniques is textual enhancement or typographical enhancement. It involves manipulating typographical features of written input (such as underlining, bolding, or capitalizing) in order to enhance the perceptual salience of a linguistic feature. In this technique, learners pay more attention to the enhanced forms as they process input for meaning because the forms are visually enhanced for them (Barcroft, 2004; Simard & Wong, 2004).

Another technique of input enhancement is input flooding. This technique exposes L2 learners to an artificially large number of instances of some target words or structures in the language. In this technique, the main hypothesis is that the very high frequency of the structure in question will attract the learner's attention. White (1998), incorporating typographical input enhancement in her study and comparing it to input flooding, believes that "typographical enhancement which involved the manipulation of italics, bolding, enlarging, and underlining was selected for the investigation, because it was expected to direct the learner's attention to the target forms more explicitly than input flooding..." (p. 86). White compared the effectiveness of four specific conditions of learner engagement with input, input enhancement, input enhancement plus extensive reading (book flood), and a natural input condition, on the acquisition of third person singular possessive determiners. Results showed some advantage for the enhanced plus extensive reading condition, but there was no significant difference between the three conditions (White, 1998).

Comparing the two approaches to facilitating L2 vocabulary acquisition from written input, Kim (2006) investigated the effectiveness of lexical elaboration (as a type of input modification), typographical enhancement (as a type of input enhancement), and the combination of both on vocabulary acquisition of Korean EFL learners. The results of the study showed that lexical elaboration and typographical enhancement alone did not aid form and meaning recognition of vocabulary, but their combination facilitated meaning recognition of unknown L2 words.

Purpose of the Study

The present study examined the effectiveness of different types of tasks in vocabulary acquisition through reading. The aim of this study was to compare form-focused and non-form-focused tasks in terms of their effectiveness on the retention of unfamiliar words encountered during reading. Form-focused tasks are form-oriented, drawing the

attention of students to the word itself through word recognition activities. Non-form-focused tasks are divided into (a) general reading comprehension questions, which require the reader to have an overall understanding of the text without focusing on any words; and (b) message-oriented tasks, which draw attention to the context surrounding the word. The selection of the tasks in this study was based on the notion of *task-induced involvement* and the *Involvement Load Hypotheses* of Laufer and Hulstijn (2001). The following research questions were addressed in this study:

1. Is there any difference between form-focused tasks and non-form-focused tasks (comprehension questions and message-oriented tasks) in vocabulary acquisition?
2. Is there any difference between two non-form-focused tasks, i.e., comprehension questions tasks and message-oriented tasks, in vocabulary acquisition?

Method

Participants

50 EFL learners from pre-intermediate classes at a language center voluntarily participated in the study. The criterion for considering the students as pre-intermediate was based on their scores on the placement test used at the language center, Key English Test (KET), which was administered at the end of the elementary level. KET is a Cambridge proficiency exam that measures language proficiency. In order to ensure that participants were homogenous in terms of their language proficiency level, especially reading and vocabulary, Preliminary English Test (PET) was administered to students. First, students whose scores fell between one standard deviation above and one standard deviation below the mean on the PET test were chosen. Those who had not been present for all the five readings and could not complete the related tasks were eliminated from the study. Based on the above-mentioned criteria, 45 students were chosen as the participants for data analysis. These students were assigned to three groups; two groups as the experimental group (message-oriented and form-focused), each with 14 participants and one group as the control group (comprehension question) with 17 participants.

Instruments

In order to carry out this study, the following teaching and testing materials were used:

Reading texts and tasks

Five texts were selected from the book *504 Absolutely Essential Words* (Bromberg, Lieb, & Traiger, 2005), which was not part of any of the groups' instructional or supplementary textbook. The texts for all three groups were the same, except for the tasks following the texts. Each task required the participants to attend to the target words in the passage in a different manner.

The texts for the first experimental group were followed by form-focused tasks, which drew the attention of the students to the target word itself, rather than to the context surrounding it. In this task, the target words and their definitions or synonyms were provided and the learners had to match each word with its corresponding meaning. In

order to reduce the chances of that participants would guess the meaning of the words, the number of definitions was greater than the words.

The texts used for the second experimental group were followed by message-oriented tasks. These tasks consisted of true or false questions, for which each question on a different part of the text contained one target word. In order for the students to answer these questions correctly, the target word in the sentence had to be understood. This task did not require the learner to do anything with the word; rather, it drew the learner's attention to the entire sentence in which the word was located.

The reading texts for the control group were followed by general reading comprehension questions that required the learners to have an overall understanding of the passage. In addition, it did not draw the readers' attention to the target words.

Testing materials

The tests used in this study were classified into two pre-tests (a homogeneity test and a vocabulary test) and a post-test.

1. Homogeneity test: This study required homogenous learners who had no familiarity with the target words selected from the texts that they were going to read. To this end, a standard English proficiency test entitled PET, one of Cambridge proficiency exams, was administered to students in the pre-intermediate level of the language center. PET consists of reading, writing, listening, and speaking sections. For the purpose of this study, the reading section, made up of 35 items of reading and vocabulary, was employed. Students whose scores fell between one standard deviation above and one standard deviation below the mean on the PET test were chosen as the participants for the main data analysis.
2. Vocabulary test: To select the target words, two procedures were followed. First, most of seemingly difficult words in the texts, except for pronouns, conjunctions, articles, and prepositions, were listed and presented to the participants. Then the participants were asked to provide a synonym, definition, or L1 equivalent for any of the words they knew. The words that were unknown to nearly all of the students were chosen as target words for the study. Thus, out of 60 words that were included on the vocabulary checklist, 27 words were chosen as the target words for the study.
3. Post-Test: The post-test was given at the end of the treatment. After being exposed to all the reading texts and completing the related tasks, the participants were given a list of all 27 target words and were asked to provide an L1 translation or L2 definition for the words they knew. All the selected target words were presented in a separate sheet, with two blank lines for each word where the students could write the definition. The post-tests provided data on the acquisition of target words through exposure to reading texts.

Data collection

Before the experiment, the homogeneity of participants and the possibility of target-word familiarity among the students were assessed. To compare the effects of the three tasks on incidental vocabulary acquisition, five reading texts were selected for the

study. In each session, one text was administered during normal class time. The participants were asked to read the text and complete the tasks without being told in advance that they would be tested on their vocabulary learning. The texts for all the three groups were the same, except for the tasks that followed the texts.

In every session, one text was presented to the learners. Since the aim of the study was to investigate task effectiveness on the retention of unknown words, time on task was equal for all the participants. All the students in the three groups were required to finish within 20 minutes. Once the task was completed, the teacher wrote the correct answers to the related tasks (matching, true or false, and comprehension question) on the board. The students had two minutes to check their answers. At the end of the treatment, when all the reading texts were read, the post-test was administered.

Data analysis

Data include the pre-test and the post-test. The pre-test was PET, for which the mean and standard deviation were calculated. In order to ensure that the participants were homogeneous, a one-way ANOVA was performed. The result of this calculation provided evidence for the homogeneity of the participants.

The post-test required the participants to provide a definition for the listed target words chosen from the texts they had read in the previous sessions. Each word, whether translated, explained, or left unanswered, was scored dichotomously. A score of 0 was given for an incorrect or not attempted answer and a score of 1 was given for a correct answer. Spelling and minor grammatical errors were disregarded as the primary focus was on the ability to recall the meaning of the words. As the post-test provided data on the acquisition of target words and a basis for comparing the effects of the tasks on vocabulary retention, a one-way ANOVA was performed to provide evidence for the existence of difference between the three groups. In order to determine where the differences had occurred, the post-hoc Scheffe Test was performed.

Results

To ensure the homogeneity of the population, the PET was administered. The application of the Kuder-Richardson 21 (KR21) formula as a measure of test reliability showed that the reliability of the test was .75. Table 1 displays the descriptive statistics for the three groups' (form-focused, comprehension question, and message-oriented) performance on the PET.

Table 1. Descriptive statistics for the three groups' performance on the PET (the pre-test)

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Comprehension-question	17	15.7647	2.96920	.72014	14.2381	17.2913	11.00	21.00
Message-oriented	14	16.5714	3.43543	.91816	14.5879	18.5550	10.00	22.00
Form-focused	14	18.0714	2.49505	.66683	16.6308	19.5120	14.00	21.00
Total	45	16.7333	3.07778	.45881	15.8087	17.6580	10.00	22.00

To determine whether there was any difference between the mean scores of the three groups on the PET, a one-way ANOVA was run (Table 2). The F-observed value of 2.31 was lower than the critical value of 3.21 at 2/42 degrees of freedom, which indicates that the three groups were homogeneous in terms of language proficiency.

Table 2. One-way ANOVA for the three groups' performance on the PET

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	41.384	2	20.692	2.315	.111
Within Groups	375.416	42	8.938		
Total	416.800	44			

To investigate whether there was any difference between form-focused tasks and non-form-focused tasks in vocabulary acquisition, the difference between the mean scores of the form-focused and non-form-focused groups (consisting of two groups: message-oriented and comprehension question) on the post-test was measured. Table 3 displays the performance of the form-focused group (M=6.92, SD=4.85) and non-form focused groups (M=2.93, SD=3.50).

Table 3. Descriptive statistics for the performance of form-focused vs. non-form-focused groups on the vocabulary test

Group	N	Mean	Std. Deviation	Std. Error Mean
Non-form-focused	31	2.9355	3.50177	.62894
Form-focused	14	6.9286	4.85900	1.29862

A *t*-test test was run to compare the mean scores of the form-focused and non-form-focused groups. As displayed in Table 4, the contrast value of 3.81 ($t=3.21$; $df=42$, $p<.05$) indicates that there was a significant difference between the mean scores of the form-focused and non-form-focused groups on the post-test. As the mean of the form-focused group was higher than that of the non-form-focused group, the significant *t*-value shows that the form-focused task resulted in more effective vocabulary acquisition.

Table 4. *t*-test for the difference in vocabulary acquisition between form-focused and non-form-focused groups

		Value of Contrast	Std. Error <i>t</i>		df	Sig. (2-tailed)
Post-test	Assume equal variances	3.8109	1.18380	3.219*	42	.002

* $p<.05$

To investigate whether the form-focused group performed differently from both groups completing non-form-focused tasks (comprehension question and message-oriented), and whether there was a difference between the two non-form-focused group, descriptive and inferential statistics were employed. Table 5 shows the results of descriptive statistics. The form-focused group gained a higher score than both message-oriented and comprehension-question groups. There was also a great difference between the two non-form-focused groups: message-oriented ($M=5$, $SD=4.26$) and comprehension-question ($M=1.23$, $SD=1.20$).

Table 5. Descriptive statistics for the three groups' performance on the vocabulary test

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Form-focused	14	6.9286	4.85900	1.2986	4.1231	9.7341	1.00	19.00
Message-oriented	14	5.0000	4.26073	1.1387	2.5399	7.4601	.00	14.00
Comprehension-question	17	1.2353	1.20049	.29116	.6181	1.8525	.00	4.00

A one-way ANOVA was run to compare the means of form-focused, message-oriented, and comprehension-question groups on the post-test. As displayed in Table 6, there was a meaningful difference between the means of the three groups ($F=9.74$, $df=2/42$, $p<.05$).

Table 6. One-way ANOVA for the three groups' performance on the vocabulary test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	262.590	2	131.295	9.743*	.000
Within Groups	565.987	42	13.476		
Total	828.578	44			

* $p<.01$

To determine where the differences lay, the post-hoc Scheffe test was run. As displayed in Table 7, the difference between the mean scores of comprehension-question group and form-focused group was 5.69 at $p>.01$. On the other hand, the same table shows that the form-focused group did not significantly outperform the second non-form-focused group, i.e., the message-oriented group. The two findings show that the better performance of the form-focused group was rooted in its difference only with one of the non-form-focused groups, i.e., comprehension-question group, with the other non-form-focused group, i.e., message-oriented, doing comparatively as well as the form-focused group.

In order to investigate the difference between the two non-form-focused groups, message-oriented and comprehension-question, the mean scores of the two were compared. The mean difference of 3.76 ($p<.05$) in Table 7 indicates that the two means

differed significantly. Considering the better performance of the message-oriented group, it can be concluded that the message-oriented task was more effective than the comprehension-question task in vocabulary acquisition though both tasks were non-form-focused by nature.

Table 7. Post-hoc Scheffe test for the three groups' performance on the vocabulary test

(I) GROUP	(J) GROUP	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Form-focused	Message-oriented	1.92857	1.3874	.389	-1.5925	5.4496
	Comprehension-question	5.69328**	1.3248	.000	2.3312	9.0554
Message-oriented	Comprehension-question	3.76471*	1.3248	.025	.4026	7.1268

* $p < .05$, ** $p < .01$

Discussion

This study compared the effectiveness of different types of tasks on vocabulary acquisition. Each task required the subjects to attend to all the target words in the passage in a different manner. Results showed that all three tasks led to some vocabulary learning, but the two experimental groups (form-focused and message-oriented) acquired significantly more words than the control group (comprehension question). Moreover, the form-focused task resulted in more vocabulary gains than the non-form-focused tasks (message-oriented and comprehension-questions tasks). The results from this study are compatible with what has already been achieved by Hustijn and Laufer (2001) in the experiment conducted with adult EFL learners, which indicated that retention of incidental vocabulary acquisition is contingent upon the amount of task-induced involvement. Hustijn and Laufer showed that the task of composition with incorporated target words produced best retention results and that the task of reading comprehension plus filling in target words produced better results than task of reading comprehension task with marginal glossing for target words. The results of this study are also in line with Lehmann (2007) and Peters et al. (2009), who compared incidental vocabulary learning with direct vocabulary learning and showed the greater effect of intentional learning.

To use the Laufer and Hulstijn (2001) involvement model as an explanation of these findings, all the tasks should be categorized based on their degree of involvement. Table 8 illustrates the analysis of the three tasks in the study in terms of presence/absence or degree of prominence of the involvement factors (need, search, and evaluation). If we want to describe the task in terms of an involvement index, where absence (-) of a

factor is marked as 0, moderate presence (+) of a factor as 1, and strong presence (++) as 2, then the involvement index of a task can be 3 (1+0+2).

Table 8. Task-induced involvement load index of the three tasks in the study

Task	Status of target words	Need	Search	Evaluation	Involvement index
1. Reading and comprehension questions (comprehension-question task)	Irrelevant to Task	-	-	-	0
2. Reading and true/false questions (message-oriented task)	Relevant to task	+	+	-	2
3. Reading and matching exercises (form-focused task)	Relevant to task	+	+	+	3

Task 1 (comprehension questions tasks) required the learner to have an overall understanding of the whole page without focusing on any unknown words. The task did not induce any need, because the target vocabulary was not needed to complete the task. As a result, the search and evaluation components were also absent in the task. In tasks 2 and 3, the target words were needed to complete the tasks, and the meanings were not provided by glosses; thus, both need and search were present in these two tasks. In Task 3 (matching exercises), evaluation was also present because the learners had to match the words with their meanings.

As illustrated in Table 8, the two experimental groups (tasks 2 and 3) had a higher involvement index because they had the components of need and search in them, two of the three components of involvement which are presumed to aid learning and were absent in the control group (Task 1). Task 3 had the highest involvement index. Comparing these degrees of involvement in light of the result of the study provides evidence and support for the hypothesis by Laufer and Hulstijn (2001), who state that task effectiveness is dependent upon the degree of involvement they induce: the higher the involvement, the better the retention. This could also explain the superiority of the message-oriented task over comprehension question and that of the form-focused task over non-form-focused tasks.

However, this reasoning cannot explain the behavior of the two experimental groups when compared with each other. As Table 8 illustrates, the involvement index for Task 3 was higher than Task 2. Thus, based on the above-mentioned findings and supports for the involvement load hypothesis, it would be reasonable to conclude that task 3 would result in higher retention than task 2. The two experimental groups proved to be effective, but the difference between them was not significant. Although the participants in the form-focused group (Task 3) outperformed the message-oriented group (Task 2) in the post-test, the difference between the two means was not statistically high enough to confirm the advantage of one task over the other. A possible reason for the lack of significant difference between these two tasks may lie in the

nature of the tasks. Earlier in this study, the concept of task-induced involvement and its three components (need, search, and evaluation) were introduced. Search and evaluation are two cognitive (information processing) dimensions of involvement, while need is the motivational, non-cognitive dimension of involvement. Need is the motivation to learn the meaning of the target words. According to Laufer and Hulstijn (2001), this motivation can be externally imposed or self-imposed. Need is moderate when it is imposed by an external agent (task or teacher), and is strong when self-imposed by the learner. In Task 2, the learners were not given the target words, the target words were not typographically enhanced, and more importantly the task did not require the learners to do anything with the words; thus, it might be possible to conclude that the degree of prominence of need is not clearly obvious in this task. It could be argued that motivation was self-imposed; therefore, need was strong (the learner himself or herself found the need to focus on the target word not the task). Changing the need from moderate (+1) to strong (+2) will affect the involvement index of Task 2 (2+1+0). Since both tasks 2 and 3 now have the same involvement index (3), they will be equally effective on vocabulary retention.

Conclusion and Implications

The objective of the study was to examine whether task type would affect incidental vocabulary acquisition through written input. The selection of the tasks was based on the construct of task-induced involvement proposed by Laufer and Hulstijn (2001). Findings revealed many points. First, task types following reading texts affected incidental vocabulary acquisition. Second, form-focused tasks were more effective than non-form-focused tasks in vocabulary acquisition due to the greater task-induced involvement. Third, message-oriented tasks were more effective than comprehension question tasks because they required the operation of the two involvement factors of need and search. Fourth, form-focused tasks were more effective than comprehension question tasks as their performance encouraged all three components of task-induced involvement: need, search, and evaluation. Finally, although form-focused tasks resulted in more lexical gains than message-oriented tasks, the difference did not gain statistical significance.

Based on the findings from this study and the construct of task-induced involvement, three conclusions can be drawn. First, although reading for meaning appears to result in vocabulary acquisition, such reading, if supplemented with vocabulary exercises which focus attention on features of input, can produce greater gains for the target words. Second, the results show that tasks with higher involvement load, namely, message-oriented tasks and form-focused tasks, can produce better retention results than comprehension question tasks, which produce the lowest retention. Third, the effectiveness of form-focused tasks runs counter to the claim (Nagy, 1997) that teaching of vocabulary is a waste of time. One of Nagy's arguments is the large amounts of time needed to deliberately teach vocabulary. However, the form-focused task, despite greatly enhancing vocabulary acquisition, does not seem to be time-consuming. Finally, the results lend support to Hulstijn and Laufer's (2001) Involvement Load Hypothesis, which makes it possible to translate and operationalize general cognitive notions of depth of processing and elaboration in terms of L2 vocabulary learning tasks.

Findings from this study have implications for vocabulary teaching and materials development. Since the construct of involvement can be operationalized and investigated empirically, teachers can devise tasks with different involvement loads and compare them with regard to their effects on incidental vocabulary learning. Supplementing reading with word-focused tasks can also improve the number of words learners learn incidentally. In addition, the message-oriented task, albeit non-form-focused, may result in some vocabulary gains. Educators who create EFL teaching materials can prepare reading texts that could encourage EFL learners not only to read the text for the message, but also to improve their lexical acquisition. To conclude, findings from this study can motivate EFL reading materials developers and EFL teachers to re-evaluate the widely held assumption that reading alone is adequate for vocabulary acquisition, especially in lower proficiency levels.

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