

Second Language Vocabulary Acquisition: An Experimental Study with Turkish EFL Learners¹

Ali Merç²

Abstract

This study investigates the two types of second language vocabulary learning in an experimental design. 21 Turkish EFL learners were divided into two treatment groups. The definition group learned vocabulary through definitions of the words whereas a context group learned through a reading text. The vocabulary learning levels were checked through both recognition and recall tasks with post-tests given just after the treatment and retention-tests given two weeks after the treatment. The results of the 2X2 Mixed design ANOVA showed that the context group outperformed the definition group in both recognition and recall tasks for both post-test and retention test.

Key Words: *second language acquisition, vocabulary acquisition, psycholinguistics, explicit/implicit learning, vocabulary instruction*

1- An earlier version of this paper was presented orally at the 2nd International Conference on Language, Education and Diversity (LED 2007) in Hamilton, New Zealand, November, 21-24, 2007.

2 -Anadolu Üniversitesi Eğitim Fakültesi, amerc@anadolu.edu.tr

İkinci Dilde Sözcük Edinimi: Yabancı Dil Olarak İngilizce Öğrenen Türk Öğrencilerle Deneysel Bir Çalışma³

Özet

Bu çalışma ikinci dilde sözcük ediniminde iki farklı yöntemi deneysel olarak incelemektedir. İngilizceyi yabancı dil olarak öğrenen 21 Türk öğrenci iki deney grubuna ayrılmıştır. 'Tanım' grubundaki öğrenciler sözcükleri tanımlar yoluyla öğrenirken 'bağlam' grubundaki öğrenciler sözcükleri bir okuma parçası yoluyla öğrendiler. Sözcükleri öğrenme düzeyleri ise uygulamadan hemen sonra verilen hatırlama ve geri çağırma testleri ile uygulamadan iki hafta sonra verilen testlerle ölçüldü. 2X2 ANOVA sonuçları bağlam grubunun tanım grubuna göre her iki testte de (hatırlama ve geri çağırma) hem uygulama sonrasında verilen hem de iki hafta sonrasında verilen testlerde daha başarılı olduğunu gösterdi.

Anahtar Sözcükler: *ikinci dil edinimi, sözcük edinimi, psikodilbilim, doğrudan/dolaylı öğrenme, sözcük öğretimi*

Introduction

One of the growing interests in the language learning/teaching world is on the ways to learn and teach second language vocabulary. Perhaps, no one (with a second language) would ignore the importance of vocabulary in language learning. These words from a language teacher might be sufficient to express the importance of vocabulary in a second language (Fan, 2003: 222):

“Vocabulary forms the biggest part of the meaning any language, and vocabulary is the biggest problem for most learners. So I've always been interested in ways of helping learners in building up a big vocabulary as fast and as efficiently as possible”

Vocabulary learning through reading texts is one of the most popular ways of word learning (Horst et al., 2003) and except for the first few thousand common words, vocabulary learning occurs through extensive reading incidentally (Huckin & Coady, 1999). However, many researchers do not clearly draw the distinction between comprehension of word meaning in context and acquisition of word meaning from context (Lawson & Hogben, 1996). According to Huckin & Coady (1999), the context surrounding each word, the nature of attention, task demands and other factors may influence the acquisition.

Several researchers assert that vocabulary is best learned through reading (Horst & Meara, 1999; Rott, 1999; Hermann, 2003; Lee, 2003; Pulido, 2003). On the other hand, Laufer (2003) defends that reading is not the only way of vocabulary learning; rather, word-focused activities are needed to learn vocabulary better.

Within the discussions on second language vocabulary learning, the greatest in-

3 - Bu makalenin ilk hali 21-24 Kasım 2007'de Yeni Zelanda'da düzenlenen 2. Uluslar arası Dil, Eğitim ve Farklılık Konferansı'nda sözlü bildiri olarak sunulmuştur.

terest is on incidental vocabulary acquisition. An entire issue was devoted to this topic in the journal *Studies in Second Language Acquisition* (vol. 21, 1999). Whether incidental, accidental, intentional, or contextual the learning is, second language vocabulary acquisition has a growing interest among the second language researchers. In this respect, this study aims to present the findings of an experiment to look at the issue in a clearer eye by examining the issue in a Turkish EFL context.

Review of Literature

Researchers in the field of second language vocabulary learning were interested in learning second language vocabulary through contextual means. For example, Knight (1994) investigated context-based vocabulary learning in an experimental study. Participants were told that the purpose of the experiment was to test for reading comprehension of authentic texts. In the study, one group had access to a computerized dictionary while reading the text, but the other did not. Both were given two types of unexpected vocabulary tests: supply-definition (students had to write the English equivalent) and select-definition (students had to choose the correct English equivalent). For the supply-definition tests, scores ranged from 5 %-21 %, with the low verbal ability students without dictionary access scoring 5%, and with the high ability students with dictionary access at the upper end of 21 %. For the select-definition tests, the scores ranged from 23% to 55% with the same groups at either extreme.

In another study, Newton (1995) provided his Taiwanese subjects with text-based tasks, namely the split-information tasks in which students were required to exchange information in order to complete the given worksheets and shared-information tasks which involved interlocutors in solving problems in an agreed way. Post-test results showed significant gains in vocabulary and the subject could recognize 21 of the 56 unknown words he had not recognized in the pretest.

Furthermore, Parry (1997) asked students to keep track of unknown words. She found that students' predictions from academic texts were improved as the context provided by the course increases when the learners store unknown words.

Horst & Meara (1999) tested a 52-year-old subject for his vocabulary gain on hundreds of words through a lengthy reading test in a Dutch-learning environment. After the experiments in which the subject assessed himself on a scale for his vocabulary growth, it was found that repeated reading of a text gives beneficial results for the vocabulary growth in the long term. In a similar study, Rott (1999) exposed learners to unfamiliar words during reading either for two, four, or six times. Her results indicated that even two encounters with unknown words during reading significantly influenced learners' vocabulary gains.

In a recent study, Pulido (2003) investigated the effect of topic familiarity, L2 reading proficiency, and L2 passage sight vocabulary on vocabulary acquisition. The experiments with 99 L2 learners in retention tests with a 28-day interval showed that the passage sight vocabulary had a significant impact on vocabulary acquisition. In a parallel understanding, Lee's (2003) study revealed that vocabulary instruction through explicit means with the help of a reading text and composition writing tasks led to no vocabulary loss in the retention tests. This finding supports the idea that explicit vo-

cabulary instruction makes better in terms of both recognition and production of the vocabulary items taught.

Finally, Hermann (2003) tested the effects of reading and memorization of paired associates on vocabulary acquisition with the adult learners of English as a second language. The researcher used an experimental design in which one group of students was given a novel while the other group memorized a list of words. Both groups were tested on both post- and retention-tests. The findings of the experiment revealed that subjects who studied vocabulary through reading outperformed the ones who memorized the words.

These studies all have in common that learning vocabulary in context is a common practice and is more advantageous for language learners.

On the other hand, certain researchers looked at the vocabulary learning phenomenon from a retention perspective, in which learners were considered to be 'knowing' the word if they were able to present that knowledge in the long run.

Laufer and Hill (2000) were also interested in retention of vocabulary through dictionary lookups. Their study with 32 Israeli and 40 Hong Kong subjects revealed that multiplicity of lexical information tends to be associated with better retention. The number of times the word is looked up during a learning session bears almost no relation to its retention; what matters is greater attention during the lookup rather than the number of lookups. The study yielded that different people have different lookup preferences and the use of multiple dictionary information seems to reinforce retention.

Hulstijn & Laufer (2001) investigated the effect of involvement load on the retention of ten English words by young adult EFL learners in Israel and the Netherlands with 87 and 99 subjects respectively. The subjects were divided into three experimental groups and were treated with three different tasks: a) reading comprehension with marginal glosses, b) reading comprehension plus fill in, and c) writing a composition and incorporating the target word. The results of the analyses showed that performance in the writing groups was higher than that in the reading plus fill in groups, which, in turn, was higher than that in the reading groups.

As the literature on second language vocabulary learning suggests, the focus is on either learning through word-focused activities or learning through contextual means. After all, the aim of this study is to find out whether learning vocabulary through context is more advantageous for Turkish EFL learners than learning them by studying the definitions provided in both short term and long term retention of the words in both recognition and recall tasks. Within this aim, the study will try to put more empirical evidence related to vocabulary learning by emphasizing the two ways in a Turkish context.

Research Questions

This study employed a quasi-experimental design with two experimental groups with two different treatment types and two tasks. The study specifically addressed the following research questions:

1. Is there a significant difference between the definition group (learning vocabulary through definitions) and the context group (learning vocabulary through reading texts) in recognition and recall tasks?

2. Is there a significant difference between the definition group and the context group in recognition and recall tasks when retention is considered?

Methodology

Subjects

The subjects of his study were 21 EFL learners studying at Anadolu University English Language Teaching Department (AUELT). 17 of the subjects were female whereas only 4 of them were male. This inconsistency in the distribution of the gender is due to the natural distribution of the students studying at the specific section selected as the research group. All subjects were 3rd year students studying at AUELT, and were selected randomly considering the ease of administration related to accessibility among the six groups. All subjects were studying English for long years in the EFL context in Turkey, and were attending at several courses at the time being to become certified to teach English at the end of their fourth year. In reality, there were 32 students in the specified class; however, due to lack of attendance and insufficient data, only 21 students were used for the treatment.

Instruments

The research instruments for this study were developed by the researcher for the specific aim of this study. The vocabulary items were selected from a reading text from the book specifically designed for vocabulary learning, *The Words You Need* by Rudzka et al. (1990). This book provides its readers with many reading texts in which certain vocabulary items are taught. The vocabulary items are given in bold to get readers' attention, and the definitions for each vocabulary item are given at the end of each text. This source was selected for this study since it included vocabulary items and reading texts for relatively high level learners of English as a foreign language.

As the research instrument, a text titled "The Value of the Dog" was selected from the book (see Appendix A). This text was preferred due to the fact that it contained 16 vocabulary items, which was a reasonable number for this experiment, and since it contained a topic that might be revealing for the subjects. The text had 281 words and it was written by the researcher again to make it clearer for the learners. The sixteen vocabulary items to be studied were selected from the text as it is offered in the original text.

The selected reading text and the vocabulary items were prepared for the experimental design of this study. There were two experimental groups in the study: a definition group and a context group.

The Definition Group

The stimulus for the subjects in the definition group was the material included the target words and their definitions written next to each of them (see Appendix B). The target words were written in the order they appear in the original text.

The Context Group

The stimulus for the subjects in the definition group was the material included the reading text with target words given in bold with numbers next to each of them (see Appendix C). The definitions of the target words were given at the end of the text in response to the number of each word in the text.

In order to test the subjects' vocabulary learning, two different tasks were developed by the researcher: a recognition task and a recall task.

The Recognition Task

The recognition task was a simple matching activity (see Appendix D). The target words were given in one column in alphabetical order with numbers next to each, and the definitions for each word were given in another column with letters next to each. A circle was provided next to each word to make the subjects write their answers for the correct matching. The instruction for the task was "Match the definitions on the left with the words on the right".

The Recall Task

The recall task was a completion type of activity (see Appendix E). The target words were given at the top of the page in an alphabetical order, and sixteen sentences were created by the researcher with blanks to complete. The instruction for the task was "Complete the following sentences with the appropriate words below".

Data Collection Procedure

Data for this study were collected in two sessions. The first session included the treatment for the groups and the post-test. The post-tests were given to the subjects just after the treatments. The second session was two weeks after the treatment, and included the retention-tests. Both tests (post- and retention-tests) were in the form of the recognition and recall tasks specified above.

The Treatment and the Post-Test

The subjects were randomly divided into two treatment groups: a definition group with 11 students (8 females and 3 males) and a context group with 10 students (9 females and 1 male). The treatments were done in students' regular class hours in the 'Methodology in the Area of Specialization' course with the help of the class instructor. The instructor was told about the procedure three days prior to treatments. Each group of students were then told to study the given vocabulary items either with definitions or reading the reading texts given according to their treatment groups. The subjects were not informed about the content of the study in order to prevent the effect of working on the tasks in a different manner than they did in normal circumstances.

Before the treatments, no pre-tests were given. Instead, the subjects were asked to indicate their probable knowledge about the target words on a separate sheet in the form of a vocabulary checklist (see Appendix F). They were told to either write definitions, explanations, or anything related to their knowledge of the word either in

English or in their mother tongue, Turkish. This procedure was done to find out any words that students already know about and eliminate them in the analysis. For example, if a student proved that s/he knew the meaning of a given word, this word was not taken into final analysis; only the words that the specific student did not know beforehand were used.

As the post-test, the recognition and recall tasks were given to the subjects. The recall task was given before the recognition task to prevent the effect of memorization of the definitions in the recognition and applying it in the recall task. This would be either an advantage or a disadvantage for the learners which could destroy the reliability of the tasks.

For both the vocabulary checklist and the post-tests in the form of recognition and recall, the subjects were asked to write their names or any nicknames they would like to use in order to match the papers with each other during the analysis. On the other hand, the subjects were told that the treatments and the test results were not used to affect their performance in the courses. The treatment and post-test session lasted approximately 25 minutes.

The Retention-test

The retention test was in the form of a delayed post-test given to the subjects two weeks after the actual treatment and post-tests. Both the recognition test and the recall test were administered in the order they were given during the post-test session. Again, the subjects were asked to write their names or any nicknames that they wrote in the post-test session in order to match the papers with the previous ones during the analysis.

Data Analysis

The analysis of the data included the scoring of the tasks out of 100 by eliminating the vocabulary items that subjects already known. All of the scoring was done by the researcher and typed in Microsoft Excel 2003 software program. The statistical analysis of the data were done through descriptive statistics, and a 2X2 Mixed Design ANOVA, and the independent samples t-test statistics using the SPSS version 11.0.

Results

The descriptive statistics are presented in Table 1. The descriptive statistics work for both the recognition and the recall tasks as post- and retention-tests for both the definition group and the context group.

Table 1. Descriptive Statistics

<i>Test</i>	<i>Group</i>	<i>N</i>	<i>Mean</i>	<i>Std. Deviation</i>
<i>Recognition Post-test</i>	<i>Definition</i>	11	82,00	22,100
	<i>Context</i>	10	87,00	18,643
<i>Recall Post-test</i>	<i>Definition</i>	11	60,82	16,792
	<i>Context</i>	10	77,10	17,006
<i>Recognition Retention-test</i>	<i>Definition</i>	11	53,64	20,156
	<i>Context</i>	10	84,50	18,846
<i>Recall retention-test</i>	<i>Definition</i>	11	43,55	17,874
	<i>Context</i>	10	73,40	16,748

As table 2 shows, the mean scores for the context group is higher in both recognition tasks and recall tasks for both the post-test and the retention test. For the recognition post-test, the context group has a mean score of 87 whereas the mean score is 82 for the definition group. For the recall post-test, the context group has a mean score of 77 whereas the definition group has a mean score of 61. The context group outperforms the definition group in the recognition retention-test (84 and 53 respectively) as for the recall-retention test (73 and 44 respectively).

As it can also be seen in Table 1, the scores of both the definition group and the context group decrease from the post-test to the retention-test in both recognition (from 82 to 53 for the definition group and from 87 to 84 for the context group) and recall task (from 61 to 44 for the definition group and from 77 to 73 for the context group).

The overall aim of this study was to find out whether there were any significant differences between the two groups (definition and context) in terms of vocabulary learning via post-tests and via retention tests. A 2X2 mixed design ANOVA was conducted to find out any possible differences between the two groups separately for the recognition task and the production task.

Recognition Task

The recognition post-test and the recognition retention-test were used as the within-subjects factors and the two groups (definition and context) were used as the between-subjects factors in the 2X2 mixed design ANOVA. Table 2 shows the ANOVA results. The results suggest that there is a significant interaction in the two-way ANOVA in terms of the relationship between the two groups and time (post vs. retention) ($F= 20,378, p<.05$). It also shows that there is a significant difference between the post-test and the retention-test ($F= 29,018, p<.05$). Finally, we can see that there is a significant difference between the definition and context groups ($F= 4,693, p<.05$).

Table 2. 2X2 Mixed Design ANOVA Results for Recognition Task

<i>Time (Post-Retention)</i>	29,018	,000*
<i>Group (Definition-Context)</i>	4,693	,000*
<i>Group & Time relationship</i>	20,378	,043*

* Significant at the .05 level

To explain the significant differences between the variables in the analyses for the recognition task, one can claim that the definition group significantly decreases in the scores on retention test whereas the scores of the context group shows a little decrease from the post-test to the retention test (Figure 1).

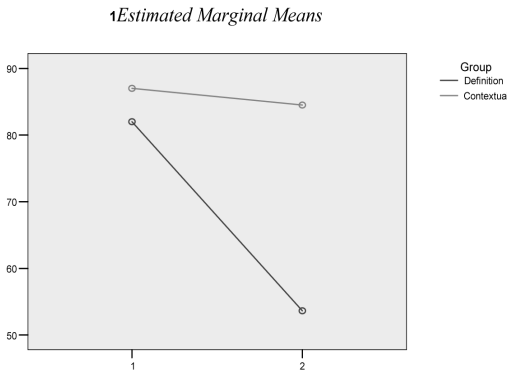


Figure 1. Estimated marginal means for the Recognition Task

Although the both groups have similar starting points after the post-tests following the treatments, the context group significantly outperforms the definition group when retention is taken into consideration in terms of the recognition task.

Recall Task

A similar approach is applied to the analysis of the recall task. The recall post-test and the recall retention-test were used as the within-subjects factors and the two groups (definition and context) were used as the between-subjects factors in the 2X2 mixed design ANOVA. Table 3 shows the ANOVA results. The results suggest that there is a significant interaction in the two-way of ANOVA in terms of the relationship between the two groups and time (post vs. retention) ($F= 20,283, p<.05$). It also shows that there is a significant difference between the post-test and the retention-test ($F= 8,495, p<.05$). Finally, we can see that there is a significant difference between the definition and context groups ($F= 10,526, p<.05$).

Table 3. 2X2 Mixed Design ANOVA Results for Recall Task

Source	F	Sig.
Time (Post-Retention)	20,283	,000*
Group (Definition-Context)	10,526	,004*
Group & Time relationship	8,495	,009*

To explain the significant differences between the variables in the analysis for the recall task, one can claim that the definition group significantly decreases in the scores on retention test whereas the scores of the context group shows a little decrease from the post-test to the retention test (Figure 2).

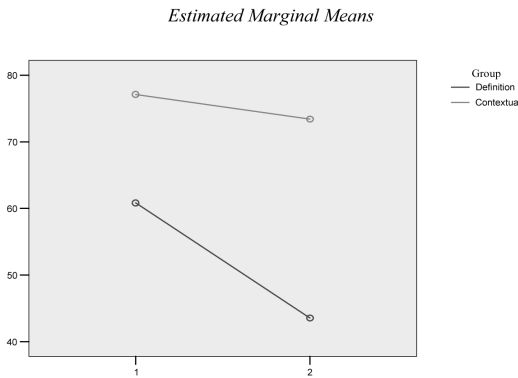


Figure 2. Estimated marginal means for the Recall Task

Despite the both groups do not have similar starting points after the post-tests following the treatments; the context group still significantly outperforms the definition group when retention is taken into consideration in terms of the recognition task.

Although the ANOVA analyses showed a significant difference among the variables, an independent samples t test was run to identify the possible significances in terms of the differences between the two groups for the four different test types. Table 4 shows the t test results.

Table 4. Independent Samples T-Test for the Definition Group and Context Group

Test	T	df	Sig. (2-tailed)
Recognition Post-test	-,557	19	,584
Recall Post-test	-2,206	19	,040*
Recognition Retention-test	-3,614	19	,002*
Recall Retention-test	-3,938	19	,001*

* Significant at the .05 level

As shown in Table 4, the differences between the definition group and context group in recall post-test, recognition retention-test, and the recall retention-test are significant. Interestingly, although the ANOVA results confirmed the significant differences among all tests, the difference between the definition group and the context group is not significant in the recognition post-test in the independent samples t-test.

Discussion

The findings of this study confirmed that learning vocabulary in context through reading texts results in better performance in recall tasks than the ones learning vocabulary through studying the definitions of the given words. In recognition task, on the other hand, no differences were found between the subjects learning vocabulary through a reading text and the ones learning through definitions. The findings related to time interval suggested that subjects learning vocabulary items in context through reading texts are better able to both recognize and recall the words than the ones learning through definitions in the long term. These findings corroborate with the findings of the previous studies conducted on second language vocabulary learning in which context-based vocabulary learning outperformed other means (Knight, 1994; Newton, 1995; Parry, 1997)

The findings of this study can be explained by the two components of psycholinguistics: (a) the information processing capacity that learners have while learning vocabulary in a second language, and (b) the working of the long term memory. As Steinberg (1993: 206) states, “the learning of the simplest word requires memory”. Although both groups’ mean scores decreased from the post-test to the retention-test, the decrease was significant for the subjects who learned vocabulary through definitions. This means that the learners who learn vocabulary items through definitions are likely to forget in the long term in a similar view to Lee’s (2003) subjects who were able to both recognize and produce the target vocabulary items in retention tests. Similarly, Hermann’s (2003) study had shown that memorization is subordinate to reading in the long term retention of words. Therefore, the learners who were given the definitions for the words to study, made use of ‘rote’ memorization (Steinberg, 2003), which resulted in vocabulary loss in the long term. However, what the context provides for the learners who studied vocabulary through reading is the ability to recognize and recall the words in the long term. Kess (1992: 87) identifies, “it is obvious that contextual information at some point influences how words are identified.”

Furthermore, the distinction between explicit learning versus implicit learning is an important consideration. Ellis (1994) takes implicit learning as “acquisition of knowledge about the underlying structure of a complex stimulus environment by a process which takes place naturally, simply and without conscious operation”, and explicit learning as “more conscious operation where the individual makes and tests hypotheses in a search for structure”. According to Hulstijn (2001), implicit learning in L2 is the construction of L2 knowledge in the form of networks with layers of hidden units representing knowledge in a distributed, sub-symbolic way. Explicit learning, on the other hand, is the deliberate construction of verbalizable L2 knowledge in the form of symbolic concepts and rules. In this study, learners with a contextual learning condition can be said to have learned vocabulary through implicit learning whereas

the learners studying the definitions in an explicit manner. Along with the findings, long-term retention of the words can be considered to be related to implicit learning condition. This finding corroborates with the findings of certain studies that put implicit learning one step further than explicit learning. In addition to these experimental studies, Williams (1999) stated that the correlation between learning and memory is the result of implicit learning in response to his experiments. In this perspective, cognitive psychologists suggest L2 researchers to “focus on the differential effects of implicit and explicit orientations on learning, rather than on attempts to demonstrate that learning is implicit in some absolute sense” (Stadler & Roediger, 1998; cited in DeKeyser, 2003, p. 339).

Conclusion

This study aimed to find out the possible differences between two different ways of vocabulary learning. The subjects provided with words accompanying the definitions of the words were subordinated to the subjects provided with words appearing in context via a reading text. The differences were significant for the recall tasks in both the post-test and retention test. A significant difference was also present for the recognition task in the retention test. The only insignificant difference was for the recognition task in the post-test. The findings were able to support the hypothesis that vocabulary learning in context is more stable in the long term than learning through definitions.

This experimental study also has certain implications for language classrooms where foreign words are taught in different manners. We can suggest the vocabulary instructors that the words might be presented to the learners in context through reading texts or any other means of contextualization. Visual materials such as pictures, photographs, maps, etc. can be good means for contextual vocabulary teaching. This idea would be a sound for any language teacher who likes his/her learners to keep their vocabulary knowledge for further use in the long term in both recognition and production tasks provided. In addition to learning vocabulary through reading, Rupley, Logan & Nichols (1998) offers the beneficial use of vocabulary in reading instruction. According to researchers, much of the criticism leveled at vocabulary teaching concerns practices in which students are not actively involved in personal discussion and use of words such as defining the words using dictionaries or using them in isolated sentences. In this respect, instead of these nonsense applications, students can be provided with opportunities where they can use vocabulary in context and use productively making connections between what they already know and the newly learnt.

This study was an attempt to identify the vocabulary learning and teaching ways in a Turkish context. As the results put forward, vocabulary learning should be based on reading and relevant context more than studying the definitions as the related literature also suggested.

Although it contains valuable information about the nature of second language vocabulary learning, the study has certain limitations. First, the results of this study can not be generalized to larger contexts since it employs a very limited number of sub-

jects under investigation. Second, the tasks used in this study were developed by the researcher and were not checked for validity and reliability. Therefore, the findings should be taken with great caution. Finally, the findings of this study are applicable to the context the study was conducted in. Further studies should be conducted in different contexts to have a clearer picture of the vocabulary learning issue in the field of second language learning.

References

DeKeyser, R. (2003). Implicit and explicit learning. In Catherine J. Doughty & Michael H. Long (eds.). *The Handbook of Second Language Acquisition*. Cornwall: Blackwell Publishing Ltd., 313-348.

Ellis, R. (1994). *The Study of Second Language Acquisition*. Oxford: OUP.

Fan, M.Y. (2003). Frequency of use, perceived usefulness, and actual usefulness of second language vocabulary strategies: A study of Hong Kong learners. *The Modern Language Journal*, 87, 222-241.

Hermann, F. (2003). Differential effects of reading and memorization of paired associates on vocabulary acquisition in adult learners of English as a second language. *TESL-EJ*, 7 (1). [<http://tesl-ej.org/ej25/a1.html>, Retrieved on 2008, Jan, 7]

Horst, M., Cobb, T. & Meara, P. (1998). Beyond a clockwork orange: Acquiring second language vocabulary through reading. *Reading in a Foreign Language*, 11 (2), 207-223.

Horst, M., Cobb, T. & Meara, P. (1999). Test of a model for predicting second language lexical growth through reading. *Canadian Modern Language Review*, 56 (2), 308-328.

Huckin, T., & Coady, J. (1999). Incidental vocabulary learning in a second language: A review. *Studies in Second Language Acquisition*, 21 (2), 181-193.

Hulstijn, J. (2001). Towards a unified account of the representation, processing and acquisition of second language knowledge. *Second Language Research*, 18 (3), 193-223.

Hulstijn, J. H. & Laufer, B. (2001). Some empirical evidence for the involvement load hypothesis in vocabulary acquisition. *Language Learning*, 51 (3), 539-558.

Kess, J. F. (1992). *Psycholinguistics: Psychology, Linguistics, and the Study of Natural Language*. Amsterdam: John Benjamins Publishing Company.

Knight, S. (1994). Dictionary: The tool of last resort in foreign language reading? A new perspective. *The Modern Language Journal*, 78, 285-299.

Laufer, B. & Hill, M. (2000). What lexical information do L2 learners select in a CALL dictionary and how does it affect word retention? *Language Learning and Technology*, 3, (2), 58-76.

Laufer, B. (2003). Vocabulary acquisition in a second language: Do learners really acquire most vocabulary by reading? Some empirical evidence. *The Canadian Mod-*

ern Language Review, 59(4), 567-587.

Lee, S. H. (2003). ESL learners' vocabulary use in writing and the effects of explicit vocabulary instruction. *System*, 31, 537-561.

Lawson, M., & Hogben, D. (1996). The vocabulary-learning strategies of foreign-language students. *Language Learning*, 46, 101-135.

Newton, J. (1995). Task-based interaction and incidental vocabulary learning: A case study. *Second Language Research*, 11, 159-177.

Parry, K. (1997). Vocabulary and comprehension: Two portraits. In J. Coady & T. Huckin (Eds.), *Second language vocabulary acquisition: A rationale for pedagogy* (pp. 55-68). New York: Cambridge University Press.

Pulido, D. (2003). Modeling the role of second language proficiency and topic familiarity in second language incidental vocabulary acquisition through reading. *Language Learning*, 53 (2), 233-284.

Rott, S. (1999). The effect of exposure frequency on intermediate language learner's incidental vocabulary acquisition and retention through reading. *Studies in Second Language Acquisition*, 21 (2), 589-619.

Rudzka, B., Channel, J., Putsey, Y. & Ostyn, P. (1985). *The Words You Need*. London: Macmillan.

Rupley, H. P., Logan, J. W. & Nichols, W. D. (1998). Vocabulary instruction in a balanced reading program. *The Reading Teacher*, 52 (4), 336-346.

Steinberg, D. D. (1993). *An Introduction to Psycholinguistics*. New York: Longman.

Williams, J. N. (1999). Memory, attention, and inductive learning. *Studies in Second Language Acquisition*, 21, 1-48.

Appendix A. The Reading Text

The Value of the Dog

In these days, the value of the dog to man is purely a psychological one, except in the few cases where the animal has a utilitarian purpose, as for the sportsmen or policemen. The pleasure which I derive from my dog is closely akin to the joy accorded to me by the raven, the greylag goose or the other wild animals that enliven my walks through the countryside; it seems like a reestablishment of the immediate bond with that unconscious omniscience that we call nature. The price which man had to pay for his culture and civilization was the severing of this bond which had to be torn to give him his specific freedom of will. But our infinite longing for paradise lost is nothing other than a half-conscious yearning for our ruptured ties. Therefore, I need a dog.

Let us not lie to ourselves that we need the dog as a protection for our house. We

do need him, but not as a watch-dog. I, at least in dreary foreign towns, have certainly stood in need of my dog's company and I have derived, from the mere fact of his existence, a great sense of inward security, such as one finds in a childhood memory or in the prospect of the scenery of one's own home country. In the almost film-like flitting-by of modern life, a man needs something to tell him, from time to time, that he is still himself, and nothing can give him this assurance in so comforting a manner as the 'four feet trotting behind.'

Appendix B. The Stimulus for the Definition Group

Study the following vocabulary items using the definitions given with them.

utilitarian: *useful*

akin: *similar*

raven: *a large, black bird resembling a crow*

greylag goose: *the common wild grey goose*

enliven: *make active, gay and cheerful*

bond: *link, feeling of being in contact*

omniscience: *all powerful, knowing everything*

severing: *cutting off*

yearning: *strong longing, feeling of desire for*

ruptured: *broken by twisting or bursting*

tie: *link between two or more separate things*

dreary: *dull, gloomy, not cheerful*

derived: *got, obtained*

prospect: *view, sight of*

flitting-by: *moving lightly and quickly from place to place*

trotting: *moving at a steady pace a little faster than walk, running slowly*

Appendix C. The Stimulus for the Context Group

Study the following vocabulary items using the definitions given with them.

The Value of the Dog

In these days, the value of the dog to man is purely a psychological one, except in the few cases where the animal has a **utilitarian (1)** purpose, as for the sportsmen or policemen. The pleasure which I derive from my dog is closely **akin (2)** to the joy accorded to me by the **raven (3)**, the **greylag goose (4)** or the other wild animals that **enliven (5)** my walks through the countryside; it seems like a reestablishment of the immediate **bond (6)** with that unconscious **omniscience (7)** that we call nature. The price which man had to pay for his vulture and civilization was the **severing (8)** of this bond which had to be torn to give him his specific freedom of will. But our infinite longing for paradise lost is nothing other than a half-conscious **yearning (9)** for our **ruptured (10) ties (11)**. Therefore, I need a dog.

Let us not lie to ourselves that we need the dog as a protection for our house. We do need him, but not as a watch-dog. I, at least in **dreary (12)** foreign towns, have certainly stood in need of my dog's company and I have **derived (13)**, from the mere fact of his existence, a great sense of inward security, such as one finds in a childhood memory or in the **prospect (14)** of the scenery of one's own home country. In the almost film-like **flitting-by (15)** of modern life, a man needs something to tell him, from time to time, that he is still himself, and nothing can give him this assurance in so comforting a manner as the 'four feet **trotting (16)** behind.'

- | | |
|--|---|
| 1. useful | 11. link between two or more separate things |
| 2. similar | 12. dull, gloomy, not cheerful |
| 3. a large, black bird resembling a crow | 13. got, obtained |
| 4. the common wild grey goose | 14. view, sight of |
| 5. make active, gay and cheerful | 15. moving lightly and quickly from place to place |
| 6. link, feeling of being in contact | 16. moving at a steady pace a little faster than walk, running slowly |
| 7. all powerful, knowing everything | |
| 8. cutting off | |
| 9. strong longing, feeling of desire for | |
| 10. broken by twisting or bursting | |

APPENDIX D. The Recognition Task

Match the definitions on the left with the words on the right

- | | |
|---|-----------------------------|
| <i>a. a large, black bird resembling a crow</i> | <i>o. useful</i> |
| <i>b. all powerful, knowing everything</i> | <i>p. view, sight of</i> |
| <i>c. broken by twisting or bursting</i> | () 1. akin |
| <i>d. cutting off</i> | () 2. bond |
| <i>e. dull, gloomy, not cheerful</i> | () 3. derived |
| <i>f. got, obtained</i> | () 4. dreary |
| <i>g. link between two or more separate things</i> | () 5. enliven |
| <i>h. link, feeling of being in contact</i> | () 6. trotting |
| <i>i. make active, gay and cheerful</i> | () 7. flitting-by |
| <i>j. moving at a steady pace a little faster than walk, running slowly</i> | () 8. greylag goose |
| <i>k. moving lightly and quickly from place to place</i> | () 9. omniscience |
| <i>l. similar</i> | () 10. prospect |
| <i>m. strong longing, feeling of desire for</i> | () 11. raven |
| <i>n. the common wild grey goose</i> | () 12. ruptured |
| | () 13. severing |
| | () 14. tie |
| | () 15. utilitarian |
| | () 16. yearning |

APPENDIX E. The Recall Task

Complete the following sentences with the appropriate words below.

- | | | |
|-----------------|----------------------|--------------------|
| <i>akin</i> | <i>flitting-by</i> | <i>severing</i> |
| <i>bond</i> | <i>graylag goose</i> | <i>tie</i> |
| <i>derive</i> | <i>omniscience</i> | <i>utilitarian</i> |
| <i>dreary</i> | <i>prospect</i> | <i>yearning</i> |
| <i>enliven</i> | <i>raven</i> | |
| <i>trotting</i> | <i>ruptured</i> | |

If something is useful for someone, it has a purpose for him/her.

If an object is similar to another object, they are closely to each other.

If you see a large, black bird resembling a crow, it means that you faced a/an

The common wild grey goose, called the, lives in the large sites of North America.

If an animal or person *makes you active, gay and cheerful during a walk, it means that it/he/she tries to* your walk.

You try to establish a/an..... when you get the feeling of being in contact, or set up a link.

The untouchable power that surrounds us is called the nature. The nature is said to be after all.

Cutting off of the relationships with your next-door neighbor might sometimes mean of the relationships with the whole building.

Mary had a strong *feeling of desire for that party. At the same time, she had a great* for the red evening dress.

The broken hearts may sometimes result in feelings towards anybody.

The strong links between two or more separate things indicate strong between/among them.

All her novels passed in gloomy houses; likewise, all the plays she wrote were in rooms only.

I obtained all my experience of life in the army, on the other hand, I the rest of the experience in the workplace.

The beauty of the sight of a house is determined by the of its garden.

The businessmen of today are in the position of *moving lightly and quickly from place to place; they are in a movie-like.....* of modern life.

If you are *running slowly just after your wife with peace, you are* behind singing your song.

APPENDIX F. The Vocabulary Checklist

Look at the following words. Write what you know about these words (definition, synonym, equivalent in L1, an associating picture, etc.)

akin

flitting-by

severing

bond

greylag goose

tie

derived

omniscience

utilitarian

dreary

prospect

yearning

enliven

raven

trotting

ruptured