



RECALL OF FOREIGN-LANGUAGE VOCABULARY: EFFECTS OF KEYWORD, CONTEXT AND WORDLIST INSTRUCTIONAL STRATEGIES ON LONG-TERM VOCABULARY RECALL OF EFL LEARNERS

(YABANCI DİLDEKİ SÖZCÜKLERİN HATIRLANMASI: ANAHTAR SÖZCÜK,
BAĞLAM VE SÖZCÜK LİSTESİ STRATEJİLERİNİN ÖĞRENİLEN
SÖZCÜKLERİN UZUN SÜRELİ OLARAK HATIRLANMASI ÜZERİNE ETKİLERİ)

Arezoo ASHOORI TOOTKABONI¹

ABSTRACT

The present study is an attempt to compare the effects of three strategies on long-term retention of English vocabulary items in an EFL setting. To fulfill the present study, three intact classes comprising 65 female students from Kish Language Institute in Tehran, Iran were randomly assigned and instructed on words in three different techniques; keyword, context and wordlist. The students were pretested on target words to ensure that the selected words are unknown to the learners. The treatment lasted for two sessions. One week after the treatment a post-test in two steps; cued-recall and word-recall, was applied to evaluate the effectiveness of the techniques on retention of newly learnt vocabulary items. Results revealed that the keyword group was significantly better than the other groups in both cued-recall and word-recall tests and in terms of the context and wordlist groups, there was generally no significant difference between them.

Keywords: vocabulary learning strategies, keyword, wordlist, context, long-term retention.

ÖZ

Bu çalışma, İngilizcenin yabancı dil olarak öğretildiği bir öğrenme ortamında, İngilizce sözcüklerin uzun süreli olarak bellekte tutulması için kullanılan 3 farklı stratejinin etkilerini karşılaştırmayı amaçlamaktadır. Bu bağlamda, İran'ın Tahran Kenti'nde bulunan Kish Dil Enstitüsü'nde öğrenim gören 3 farklı sınıftaki 65 bayan öğrenci, gelişigüzel seçilerek, anahtar sözcük, bağlam ve sözcük listesi olmak üzere 3 farklı teknik ile kelime öğretimine maruz bırakılmışlardır. Öğretilecek sözcükler öğrencilere daha önceden sunularak, onların bu sözcükleri önceden bilmediklerinden emin olunmuştur. Bu çalışmanın uygulama aşaması 2 oturumda tamamlanmıştır. Uygulamadan bir hafta sonra kullanılan tekniklerin yeni öğrenilen sözcüklerin bellekte tutulması üzerinde etkilerini saptamak amacıyla ipuçlu hatırlama ve sözcük hatırlaması şeklinde 2 aşamalı bir test uygulanmıştır. Elde edilen sonuçlar göstermiştir ki sözcükleri anahtar sözcük tekniğini ile öğrenen grup her iki aşamada da diğer gruplardan daha iyi sonuçlar sergilemiştir. Diğer iki teknik arasında da istatistiksel açıdan önemli olabilecek farklar bulunmamıştır.

Anahtar sözcükler: sözcük öğrenme stratejileri, anahtar sözcük, sözcük listesi, uzun süreli bellekte tutma

¹ MA graduate of TEFL, Department of English and Language Literature, Shahid Beheshti University, G.C., Tehran, Iran. E-Mail: a.ashoori1985@gmail.com

INTRODUCTION

The neglect of vocabulary learning was one of the most recurring themes in the literature of language teaching and until recently it has been mostly overlooked in the EFL/ESL classrooms. It was often left to take care of itself and received little attention in language programs (Hedge, 2008; Richards & Renandya, 2002). However, during the last few years, it has been widely accepted that vocabulary learning is an integral element of language proficiency (Schmitt, 2008) and therefore vocabulary teaching should be an integrated part of every syllabus and taught in a well-planned manner. As it is argued by Read (2000), words are the basic units of language, out of which larger structures such as sentences, paragraphs and the whole text are formed. But, the problem is how learners should acquire vocabulary (Browne, 2003) and boost their retention of vocabulary items.

One of the aspects of vocabulary research that should receive a great deal of attention in second/foreign language learning literature is the role of vocabulary learning strategies in enhancing students' vocabulary retention (Ellis, 1994; Hulstijn, Hollander & Greidanus, 1996; Paribakht & Wesche, 1999, among others). The present study is designed to gain insight into the effect of three different techniques; keyword, context, and wordlist on long-term retention of vocabulary items.

BACKGROUND

Standard Model

Originally proposed by Atkinson and Shiffrin (1968), the standard model divides memory to three parts: sensory registers, short-term memory, and long-term memory. Sensory registers hold information about a perceived stimulus for a fraction of a second after the stimulus disappears, allowing a mental representation of it to remain in memory for further processing (Sperling, 1960).

After representation in sensory store, information except those which are lost, is passed on the short term memory (S.T.M) which is a memory store that holds a small amount of information in consciousness, such as phone number for roughly 20 to 30 seconds (Waugh & Norman, 1965). Language learners need all information of the language to be learnt transferred into long-term memory (LTM). Cognitivists are interested in knowing how this "encoding" process could be achieved, how LTM operates and how information can be retrieved from this store, reversing the path and transferring information from LTM to STM. The main way of transferring information from STM to LTM is by finding some pre-

existing information in the LTM to link the new information to. In the case of vocabulary, it means finding some elements already in the mental lexicon to relate the new lexical information to (Schmitt, 2000). The native keyword is such an element.

Mnemonics

Mnemonic is a good memory enhancing strategy that helps learners to attach new information to the previous information stored in their cognitive system. Mnemonics are techniques, verbal or visual, that improve the storage and recall of information contained in memory. It has been proved that mnemonics extremely help people to remember things (Bulgren, Schumaker & Deshler, 1994, Mastropieri & Scruggs, 1989). In a similar vein, Thompson (1987) asserted that by integration of new information into existing cognitive units, mnemonics help learners learn and recall them better. Since low level students are more involved in activities require them to remember and recall information, mnemonics are more useful for low proficiency level students (Levin, 1993).

The Keyword Technique

Originally proposed by Atkinson, the keyword techniques is a mnemonic device used for helping learners to remember information easier (Atkinson, 1975). He states that the keyword method divides vocabulary learning into two stages: an acoustic link stage and imagery link stage. In the first stage the learners are asked to associate the foreign word with the keyword, an association that is formed based on acoustic similarity. In the second stage the learners are asked to form a mental image of the keyword interacting with the English translation (Atkinson, 1975).

The Context Technique

Learning through context is the mirror image of incidental learning in which the learners inference the meaning of an unknown word based on contextual clues contained in a reading selection. Incidental learning is the result of active and conscious process of hypothesizing a meaning for unknown words from context. The question is that “How do readers do that?”

Literature suggests several strategies for deriving meaning out of context (Blachowicz & Fisher 1996; Clarke & Nation 1980; Wesche & Paribakht 1999). For example Clarke and Nation’s (1980) directions concerning inferencing meaning in context involve: (1) “look at the word itself and its surrounding to decide on the part of speech”; (2) “look at the immediate grammar context of the word, usually within a clause or sentence”; (3) “look at the wider context of the

word usually beyond the level of the clause and often over several sentences”; (4) “guess...the word and check...that the guess is correct”.

Moreover, in another study, Kruse (1979) provides five helpful clues for deriving the meaning of written vocabulary in context:

Word elements such as prefixes, suffixes and roots: One of the most significant vocabulary skills that students may need when encountering a new word is through recognizing component parts of words.

Pictures, diagrams, charts: Students may relate the illustration with the item that is difficult to understand.

Clues of definition: Students must notice todefinition clues such as parenthesis, footnotes, synonyms and antonyms.

Inference clues from discourse: Students can make use of example clues, summary clues and experience clues to infer the meaning from the context.

General aids: This includes the function of the word such as noun, verb, etc.

The Wordlist Technique

Learning through wordlist is an example of an explicit strategy for vocabulary acquisition. It is one of the old-fashioned techniques among language teachers. In this technique the main emphasis is on repetition and memorization, not meaningful learning. In the other words, this strategy inhibits the acquisition of correct word meaning (Huyen & Nga, 2003). Consequently, a majority of words are forgotten within a short time (Wei, 2007).

However, some researches indicate that list learning is an efficient means of acquiring L2 vocabulary (Meara, 1995; Nation, 1995). Similarly, Shillaw (1995) conducted an experiment at a Japanese university and reported success in using wordlists. In a similar vein, Yongqi Gu (2003) claims that rote learning helps learners to acquire words both efficiently and quickly; therefore underestimating such techniques may be dangerous.

Empirical Evidence

One of the much-debated pedagogical questions in EFL contexts is that whether instructional methods such as the keyword and contextual methods help learners in acquiring and retaining vocabulary items compared with the traditional wordlist approach that is just based on memorization.

To answer this question, the present study intends to compare these two strategies with wordlist technique with regard to their facilitative effect in retention of newly learned vocabulary items.

Theoretical basis for comparing the keyword method with context method lies in Craik and Lockhart’s (1972) depth of processing theory. They believe that

long-term retention is based on the “depth” at which information is processed and not because of the transfer of information from one kind of memory store to another. Craik and Lockhart (1972) postulated several levels of processing depth. For instance, the meaning of new lexical items is processed at a deep level; while the phonological form processing takes place at a rather shallow level. According to Craik and Lockhart’s (1972) “depth-of-information-processing” theory, semantic processing methods (e.g., context method) should better aid retention than keyword method which appears to primarily elicit sensory processing. In other words, using a keyword method provide an initial link between an L2 word and its meaning in L1, whereas semantic elaboration would further fix the semantic association within existing knowledge structures.

Concerning vocabulary learning strategies, a considerable amount of researches has been carried out since 1970s. Reviewing literature reveals that the keyword method has shown to be superior to no-strategy condition (Atkinson & Raugh, 1975; Avila & Sadoski, 1996 Pressley, Levin, McDaniel, 1987) and rote rehearsal condition (Baleghizadeh & Ashoori, 2010; Ellis & Beaton, 1993; Wang et al., 1993). However, comparison of context versus rote rehearsal strategy revealed contradictory results. As an example, in an experiment carried out by Nemko (1984), the subjects in rote rehearsal group outperformed learners in context group. On the contrary, Redouane, (2010) conducted a study in which subjects in context group could retain substantially more vocabulary than wordlist group.

A review of the literature on L1/L2 vocabulary teaching reveals that most retention studies have compared the efficacy of the keyword technique with that of either a no-strategy control condition in which learners chose their own technique (e.g., Atkinson & Raugh, 1975; Avila & Sadoski, 1996, Levin et al., 1979) or a rote rehearsal condition in which learners rehearsed the FL words and their native language translations (e.g., Baleghizadeh & Ashoori, 2010; Carney & Levin, 1998; Ellis & Beaton, 1993; Fuentes, 1976; van Hell & Candia Mahn, 1997; Wang et al., 1993; Willerman & Melvin, 1979). Some other studies have compared context method with wordlist method (e.g., Redouane, 2004) and few studies have examined the effectiveness of keyword method versus context and wordlist methods (Brown & Perry, 1991). Furthermore, no study in Iran has been carried out on the effectiveness of these three methods in enhancing Iranian EFL learners’ retention. So, the lack of research in this area suggests the utility of this study which compares the keyword method to context and wordlist strategies in learning English lexical words and their meanings.

Therefore, the major interest of the present research is investigation and comparison of three EFL vocabulary instructional strategies, i.e. the keyword, the

context and the wordlist strategies on the long-term retention of newly learnt vocabulary items. Accordingly, the specific question addressed in this study is:

1. Which one of the three instructional techniques; keyword, context, wordlist, provides better results in terms of long-term retention of EFL vocabulary items?

METHODOLOGY

Participants

The present study was carried out with 65 female students who were studying at Kish Language institute of Tehran. They were all learning English as a foreign language and were all at elementary level of proficiency. The participants were native speakers of Farsi and their ages ranged from 13-17. The treatment had duration of one week and it ran at the beginning of the semester. The classes were held twice a week; each session lasting 90 minutes. It is good to mention that the subjects' proficiency level had been determined through the use of standard placement tests which are often used when students want to embark on studying English. For this purpose, three intact classes were chosen. While it was not possible to have intact classes of the same size, each of the three classes contained a comparable number of subjects, ranging from 21 to 23.

INSTRUMENTS

Target Words

Twenty English words were used as the target vocabulary items. The list of target vocabulary items was made up from words found in *Oxford Elementary Dictionary*. The selection of the target lexical English words was based on the following criteria; they had to be unfamiliar and concrete nouns and they were also supposed to have a similar sounding equivalent, i.e., keywords in Farsi. To ascertain that the words were unknown to the subjects, a pre-test was given to the students a week before the learning period. They were given a list of twenty five English words and required to give their Persian translation. From these twenty five words only five of them were familiar to the learners, so they were omitted from the study.

Instructional Booklets

Three different booklets that were provided for each treatment condition were distributed among the learners in each session. Every session, students were introduced to 10 new lexical words. Booklets for the keyword group contained the target English words, their equivalents in Farsi and also a keyword selected to have a similar sound to the English word, for example: (سگ , *sag*) i.e., a four-legged animal, especially kept by people as a pet or to hunt or guard things as a keyword, “sack” as the English word which was supposed to be learned, and an interactive mental image that related the keyword to the English word and was depicted to subjects by the researcher. For instance, imagine a sack with a sag in it while it is bringing out its head.

The students in the context group received the new word, their definition in English and an example of the word usage in one sentence in which each lexical word was underlined. Based on this context, they had to guess the meaning of new vocabulary items. Whenever the students were confronted with a problem in inferencing the meaning of unknown words, they were guided by the researcher to look for more cues in the context to guess the meaning properly. However, subjects in the wordlist group were given a wordlist of the target lexical words followed by their definition in Farsi.

Procedure

Before starting the treatment, the researcher in the keyword group gave a comprehensive explanation of the keyword technique using examples. Participants were asked to practice the method and ask questions if there was any. To ascertain that the subjects had learnt the technique, the researcher asked the students to find some words in their first language that sounded like a word in English and finally make an interactional image to relate both of them in their mind. Similarly, in the context group, the researcher explained the strategy and the various factors that would help them determine the meaning of an unknown word such as contextual factors, the word factors, etc. (Mondria & deBoer, 1991). In wordlist group, the learners were given a list of words with their translations in Farsi and asked to memorize the list. The participants were given 10 minutes to learn 10 new words in each session. Total learning time was held constant for all instructional groups.

One week after the treatment, the participants took a cued-recall test. It was used to measure the students’ ability to remember the meaning of target lexical words. The participants were given a list of 20 words in English and required to give their translation in Persian. Then they immediately took word-

recall test consisting 20 sentences and they were asked to fill in the missing vocabulary word based on the context of the sentences.

The testing procedure was the same for all the treatment groups.

Grading

Answers elicited on the retention tests were evaluated by three raters. They used two criteria for determining acceptability of answers. First, synonyms were acceptable as long as they corresponded to the required definition and second, if raters thought the given answer was unclear but tended toward the correct answer, it was to be scored correct. Answers were counted correct if they had been accepted by two of three raters.

RESULTS OF THE STUDY

Table 1 and 2 display the mean scores and standard deviations for each group on cued-recall and word-recall tests. Findings of the cued-recall test (table 1) reveal that subjects in the keyword group recalled more definitions (18.10) than did context (13.78) and wordlist subjects (16.00). Similarly, the wordlist subjects recalled more definitions (16.00) than context subjects (13.78).

Table 1. The Descriptive Statistics of the Cued-Recall Test

Groups	N	Mean	SD
Keyword	21	18.10	1.700
Context	23	13.78	3.176
Wordlist	21	16.00	2.739

Table 2 also shows that there are noticeable differences among the three instructional groups in word-recall tests. Mean of the keyword group (17.10) is higher in comparison with the context (13.30) and wordlist (11.14) groups. Also, mean of the context (13.30) group is higher than the wordlist (11.14) group.

Table 2. The Descriptive Statistics of the Word-Recall Test

Groups	N	Mean	SD
Keyword	21	17.10	2.047
Context	23	13.30	2.835
Wordlist	21	11.14	3.038

In order to find out whether these differences are significant or not, One-way ANOVA was run.

Table 3. One-way ANOVA: Results of the Long-Term Cued-Recall Test

Tests	Grouping	Sum of Squares	df	Mean Square	F	Sig.
cued-recall	Between Groups	204.524	2	102.262	14.754	.000
	Within Groups	429.723	62	6.931		
	Total	634.246	64			
Word-recall	Between Groups	381.888	2	190.944	26.588	.000
	Within Groups	445.251	62	7.181		
	Total	827.138	64			

As is clear from the table above, the results indicate that there is a significant difference among the three experimental groups concerning the three instructional strategies both in cued-recall test, $F(14.754)$, $p=.00 < .05$, and word-recall test, $F(26.588)$, $p=.00 < .05$. To check where the differences lied, Sheffe' test was run whose result are presented in table 4.

Table 4. Sheffe' test of differences across the groups on the long-term cued-recall and word-recall tests

	Grouping		Mean Difference	Sig.
Cued-recall	Keyword	context	4.313*	.000
		wordlist	2.095*	.042
	context	KW-Con	-4.313*	.000
		Context	-2.217*	.026
	wordlist	keyword	-2.095*	.042
		context	2.217*	.026
Word-recall	Keyword	context	3.791*	.000
		wordlist	-5.952*	.000
	Context	keyword	-3.791*	.000
		wordlist	2.161*	.034
	wordlist	Keyword	-5.952*	.000
		Context	-2.161*	.034

Concerning cued-recall test, as is clear from the above table, the difference between the keyword group and both of the other groups is significant ($p= 0.00 < 0.05$, $p= 0.042 < 0.05$). Similarly, the difference between the wordlist and the context groups is significant ($p= 0.034 < 0.05$). This means that, in terms of effectiveness, the keyword strategy is number one, the wordlist is number two and the context is number three.

Concerning word-recall tests, the results of the Sheffe test reveal that the difference between the keyword and the other strategies is again significant ($p= 0.00 < 0.05$) and the difference between the context groups and wordlist is also significant. In other words, learners in the context group outperformed learners in the wordlist group.

DISCUSSION

As can be seen, in both long-term cued-recall and word-recall tests the difference between the keyword group and both of the other groups is significant. In other words, the subjects in the keyword group outperformed the other learners in both cued-recall and word-recall tests. In case of the cued-recall test, the wordlist group performed significantly better than the context group. However, the result was different concerning word-recall test. The performance of the learners in wordlist group was worse than that of context group.

Regarding the keyword technique, in line with previous similar studies (e.g., Chen, 2006; Hsu, 2007; Jones, Levin, Levin, & Beitzel, 2000; Levin, 1983, 1986; Lin, 2004; McDaniel & Pressley, 1987; McDaniel, Pressley & Dunay, 1987; Pressley, Levin & Delaney, 1982; Rodriguez & Sadoski, 2000), this study confirms the powerful impact of the keyword technique on the learners' memory in recalling newly learned vocabulary items. This finding is also consistent with several empirical studies conducted by Levin and Pressley (1985), Levin, Pressley, McCormick, Miller, and Shriberg (1979), Pressley, Levin and Delaney (1982) on the effectiveness of keyword technique on improving learners' recall of definitions of unfamiliar vocabulary items.

As shown in this study, with regard to context technique, this strategy was not a good one in comparison to the keyword technique. This result is in contrast with Craik and Lockhart's (1972) "depth-of-information-processing" theory. Based on their theory, since learning through context deals with semantic association within existing knowledge it should lead to better retention than the keyword technique that just provides provide an initial link between an L2 word and its meaning in L1. Moreover, it is in contrast with McDaniel and Pressley, (1987) and Moore and Surber's, (1992) studies who claimed that there is no

significant difference between the keyword and semantic context techniques in long-term retention tests and also in opposition with Schouten-van Parren (1991) who strongly argued that guessing words in context enhances long-term retention. Moreover, this result is in opposition with Brown and Perry (1991) who found positive effect for context learning over keyword learning.

There are various reasons that could be attributed to the better performance of learners in the keyword group. First, according to dual-coding theory, two different but complementary systems of storage exist in the brain: a semantic/verbal system and an image-based system and the received information is processed in two distinct but interactive way. Since the keyword strategy provides information through two channels, visually and verbally, it yields superior retention compared to semantic-context technique that provides information just through the verbal channel. In other words, the effectiveness of verbal stimuli is directly related to their imagery value or concreteness (Paivio, 1971).

Another reason for the success of keyword group is based on the basic idea of the “keyword technique”. Remembering and self-consciousness of learners during the learning process is the conceptual basis of the keyword method i.e., keyword technique strengthens the power of recalling new words (Hall, Wilson, & Patters, 1981; Levin et al., 1982; Hall & Fuson, 1988; Paivio & Desrochers, 1981; Yaakub, 2010).

Another explanation for the effectiveness of keyword technique is that it takes advantage of the powerful strength of visual memory. As literature shows, visual stimuli create strong memories (Marschark, Richman, Yuille, & Hunt, 1987). Therefore, it is reasonable to explain that the keyword technique is effective in that it creates a visual image that links the target word to its meaning.

Poor performance of the context group compared to the keyword group can be attributed to the fact that advanced level learners are more able to benefit from learning vocabulary in context not elementary or intermediate level students (Pressley, Levin, & Miller, 1982). It can be due to the fact that beginners or intermediate level students are unable to understand the cues since most of them are unfamiliar to learners (Bensoussan & Laufer, 1984; Laufer, 1989, Laufer & Osimo, 1991). So until that time the best technique for learning vocabulary is to use decontextualize technique (Cohen & Apeck, 1980). Since the participants in the present study were not proficient learners, the same fact can be one of the reasons for poor performance of the context group. In another study, Abdel-Majeed (2000) criticized context learning for not providing learners with some ways to check whether their responses are correct or not.

Comparing wordlist group to the context group, the results revealed that there is a significant difference between the mean scores of students in cued-

recall and word-recall tests. In cued-recall test, the learners in the wordlist group outperformed the learners in the context group while in word-recall test the results showed that the students in the context group were significantly better than the wordlist group. These results can be interpreted based on the way they were instructed. Since in wordlist group, the learners were instructed by a list of words with their meanings in front of them, they could be better in meaning recall tests such as cued-recall test while the learners in the context group were exposed to appropriate contexts for each target word during the instruction; so, they were more inclined to be involved in production tests whereas the subjects of wordlist group do not have the ability to produce vocabulary items.

CONCLUSION

The results of this study lend support to the claim that learning vocabulary through keyword technique has great role in improving learners' retention. Moreover, the results revealed that generally, there is no great difference between the performance of the learners of context group and wordlist group. The findings suggest that the superiority of either context or wordlist techniques were due to the practice rather than the specific strategies they were exposed to. In other words, it matches with the way of instruction they were exposed to. Regarding the findings of this study, a set of implications can be extracted for the teachers and learners in foreign settings.

Firstly, teachers can successfully make use of the keyword technique in EFL contexts. Secondly, as it was revealed in this study, learners can easily learn the procedure of keyword technique in a short period of time and recall more definitions and vocabulary items compared to the other strategies. So, it is highly recommended to incorporate this method into EFL classroom settings. Finally, teachers are recommended to benefit from a variety of strategies and not just stick to traditional approaches.

REFERENCES

- Abdel-Majeed, M. M. (2000). The keyword method: A powerful memory aid to vocabulary learning in the EFL classroom (An experimental study). *The E.R.C Journal*, 9, 9-27.
- Atkinson, R. C. (1975). Mnemotechniques in second language learning. *American Psychologist*, 30, 821-828.

- Atkinson, R. C., & Raugh, M. R. (1975). An application of the mnemonic keyword method to the acquisition of a Russian vocabulary. *Journal of Experimental Psychology, 104*, 126-133.
- Atkinson, R.C. and Shiffrin, R.M. (1968) Human memory: a proposed system and its control processes. In: Spence K.W. and Spence J.T. (Eds.), *The psychology of learning and motivation: Advances in research and theory* (pp. 89–195). Academic Press, New York.
- Avila, E., & Sadoski, M. (1996). Exploring new applications of the keyword method to acquire English vocabulary. *Language Learning, 46*(3), 379- 395.
- Baleghizadeh, S. & Ashoori Tootkaboni, A. (2010). The effect of keyword and wordlist methods on immediate vocabulary retention of EFL learners. *Pakistan Journal of Social Sciences, 30*, 251-261.
- Bensoussan, M. & Laufer, B. (1984). Lexical guessing in context in EFL reading comprehension. *Journal of Research in Reading, 7*, 15-32.
- Blachowicz, C. L. Z., Fisher, P. J. (1996). *Teaching vocabulary in all classrooms*. New York: Prentice Hall.
- Browne, C. (2003). Vocabulary acquisition through reading, writing, and tasks: A comparison. Doctoral dissertation, Temple University, Japan.
- Brown, T., & Perry, F. (1991). A comparison of three learning strategies for ESL vocabulary acquisition. *TESOL Quarterly, 25*, 655-670.
- Bulgren, J. A., Schumaker, J. B., & Deshler, D. D. (1994). The effects of a recall enhancement routine on the test performance of secondary students with and without learning disabilities. *Learning Disabilities Research & Practice, 9*, 2–11.
- Carney, R. N., & Levin, J. R. (1998). Do mnemonic memories fade as time goes by? Here's looking a new! *Contemporary Educational Psychology, 23*, 276-297.
- Chen, Y. M. (2006). *The effect of keyword method on English vocabulary long-term retention of elementary school students in Taiwan*. Department of Applied English: Southern Taiwan University.
- Clarke, D. F., & Nation, I. S. P. (1980). Guessing the meanings of words from context: Strategy and techniques. *System, 8*, 211-220.
- Cohen, A. D. & Apeh, E. (1980). Retention of second-language vocabulary over time: Investigating the role of mnemonic association. *System, 8*, 221-235.
- Craik, F. I. M., & Lockhart, R. S. (1972). Levels of processing: A framework for memory research. *Journal of Verbal learning and Verbal behavior, 11*, 671-684.
- Ellis, N. (1994). Consciousness in second language learning: psychological perspectives on the role of conscious processes in vocabulary acquisition. *AILA Review, 11*, 37-56.
- Ellis, N. C., & Beaton, A. (1993). Factors affecting learning of foreign language vocabulary: Imagery keyword mediators and phonological short-term memory. *The Quarterly Journal of Experimental Psychology, 46A*, 533-588.
- Fuentes, E. J. (1976). *An investigation into the use of imagery and generativity in learning a foreign language vocabulary*. Stanford University, Stanford, California.

- Hall, J. W., & Fuson, K. C. (1988). The keyword method and presentation rates: Reply to Pressley. *Journal of Educational Psychology*, 8, 251-252.
- Hall, H. W., Wilson, K. P., & Patterson, R. J. (1981). Mnemotechniques: some limitations of the mnemonic keyword for the study of foreign language vocabulary. *Journal of Educational Psychology*, 73, 345-357.
- Hedge, T. (2008). *Teaching and Learning in the Language Classroom*. Oxford: Oxford University Press.
- Hsu, C. T. (2007). *Effects of the keyword method on vocabulary learning of elementary school EFL children*. Unpublished Master Thesis. Department of English Instruction, Taipei Municipal University of Education.
- Hulstijn, J. H., Hollander, M., & Greidanus, T. (1996). Incidental vocabulary learning by advanced foreign language students: The influence of marginal glosses, dictionary use, and reoccurrence of unknown words. *The Modern Language Journal*, 80, 327- 339.
- Huyen, N. & Nga, K. (Dec 2003). Learning vocabulary through games. *Asian EFL Journal*, 5(4). Retrieved July 23, 2007, from http://www.asian-efl-journal.com/dec_03_sub.Vn.php
- Jones, M. S., Levin, M. E., Levin, J. R., & Beitzel, B. D. (2000). Can vocabulary learning strategies and pair-learning formats be profitably combined? *Journal of Educational Psychology*, 92, 256-262.
- Kruse, A. F. (1979). Vocabulary in context. *ELT Journal*, 33, 207-213.
- Laufer, B. (1989). Why are some words more difficult than others? Some intralexical factors that affect the learning of words. *IRAL*, 28, 293-307.
- Laufer, B. & Osimo. (1991). Facilitating long-term retention of vocabulary: The second-hand cloze. *System*, 19, 217-224.
- Levin, J. R. (1983). Pictorial strategies for school learning: Practical illustration. In M. Pressley and J. R. Levin (Eds.), *Cognitive strategy research: Educational application* (63-87). New York: Baywood.
- Levin, J. R. (1986). Four cognitive principles of learning-strategy instruction. *Educational Psychologist*, 21, 3-17.
- Levin, J. R., McCormick, C. B., Miller, G. E., Berry, J. K. & Pressley, M. (1982). Mnemonic vs. nonmnemonic vocabulary-learning strategies for children. *American Educational Research Journal*, 19, 121-136.
- Levin, J. R. & Pressley, M. (1985). Mnemonics vocabulary instruction: What's fact, what's fiction? *Individual Differences in Cognition*, 2, 145-172.
- Levin, J. R., Pressley, M., McCormick, C. B., Miller, G. E., & Shriberg, L. K. (1979). Assessing the classroom potential of the keyword method. *Journal of Educational Psychology*, 76, 598-609.
- Lin, C. N. (2004). *The effects of keyword method on vocabulary learning of senior high EFL students in Taiwan*. Department of English, National Kaohsiung Normal University.

- Marschark, M., Richman, C. L., Yuille, J. C., & Hunt, R. R. (1987). The role of imagery in memory: On shared and distinctive information. *Psychological Bulletin*, *102*, 28-41.
- Mastropieri, M. A., & Scrugges, T. E. (1991). *Teaching students ways to remember: Strategies for learning mnemonically*. Cambridge, MA: Bookline Books.
- McDaniel, M. A., & Pressley, M. (1987). *Imagery and related mnemonic process: Theories, individual differences, and applications*. New York: Springer-verlag.
- McDaniel, M. A., Pressley, M., & Dunay, P. K. (1987). Long-term retention of vocabulary after keyword and context learning. *Journal of Educational Psychology*, *79*, 87-89.
- Meara, P. (1995). The importance of an early emphasis on L2 vocabulary. *The Language Teacher*, *19*, 8-10.
- Mondria, J. A., & Wit-de Boer, M. (1991). The effects of contextual richness on the guessability and the retention of words in a foreign language. *Applied Linguistics*, *12*, 249-267.
- Moore, J., & Surber, J. R. (1992). Effects of context and keyword methods on second language vocabulary acquisition. *Contemporary Educational Psychology*, *17*, 286-292.
- Nation, I.S.P. (1995). The word on words: An interview with Paul Nation. Interviewed by N. Schmitt. *The Language Teacher* *19*, 5-7.
- Nemko, B. (1984) Context versus isolation: Another look at beginning readers. *Reading Research Quarterly*, *19*, 461-467.
- Paivio, A. (1971). *Imagery and verbal processes*. New York: Holt, Rinehart and Winston.
- Paivio, A. & Desrochers, A. (1980). A dual-coding approach to bilingual memory. *Canadian Journal of psychology, Review of Canadian Psychology*, *34*, 388-399.
- Paribakht, T.S., & Wesche, M. (1999). Reading and incidental L2 vocabulary acquisition: An introspective study of lexical inferencing. *Studies in Second Language Acquisition*, *21*, 195-224.
- Pressley, M., Levin, J. R., & Delaney, H. D. (1982). The mnemonic keyword method. *Review of Educational Research*, *52*, 61-91.
- Pressley, M., Levin, J. R., & McDaniel, M. A. (1987). Remembering versus inferring what a word means: Mnemonic and contextual approaches. In McKeown, M. G. & Curtis, M. E. (Eds.), *The Nature of Vocabulary Acquisition* (pp.107-127). Hillsdale, New Jersey: Lawrence Erlbaum Associates.
- Pressley, M., Levin, J. R., & Miller, G. E. (1982). The keyword compared to alternative vocabulary- learning strategies. *Contemporary Educational Psychology*, *7*, 50-60.
- Read, J. (2000). *Assessing Vocabulary*. Cambridge University Press, Cambridge, UK.
- Redouane, R. (2010). Assessing instructional methods in L2 French vocabulary acquisition: Guessing-from-context method versus a word-list method. *USH Journalism Studies*, *11*, 73-87.
- Richards, J. C., & Renandya, W. A. (2002). *Methodology in language teaching: An anthology of current practice*. New York: Cambridge.

- Rodriguez, M., & Sadoski, M. (2000). Effects of rote, context, keyword, and context/keyword methods on retention of vocabulary in EFL classrooms. *Language Learning, 50*, 385-412.
- Schmitt, N. (2000). *Vocabulary in language teaching*. Cambridge: Cambridge University Press.
- Schouten-van Parreren, C. (1991, December). *Psychological aspects of vocabulary learning in a foreign Language*. Paper presented at the Vocabulary Acquisition in L2 Symposium, Malaga.
- Shillaw, J. (1995). Using a word list as a focus for vocabulary learning. *The Language Teacher 19*, 58-59.
- Sperling, G. (1960). After image without image. *Science, 131*, 1613-1614.
- Thompson, I. (1987). Memory in language learning. In A. Wenden & J. Rubin (Eds). *Learner Strategies in Language Learning*. (pp. 15-30). New Jersey: Prentice-Hall.
- van Hell, J. G., & Candia Mahn, A. (1997). Keyword mnemonics versus rote rehearsal: Learning concrete and abstract foreign words by experienced and inexperienced learners. *Language Learning, 47*, 507- 546.
- Wang, A. Y., Thomas, M. H., Inzana, C. M., & Primicerio, L. J. (1993). Long-term retention under conditions of intentional learning and the keyword mnemonic. *Bulletin of Psychonomic Society, 31*, 545-547.
- Waugh, N. C. & Norman, D. A. (1965). Primary memory. *Psychology Review, 72*, 89-104.
- Wesche, M., & Paribakht, T. S. (1999). Incidental L2 vocabulary acquisition. *Studies in Second Language Acquisition, 21*, 181-193.
- Wei, M. (2007). An examination of vocabulary learning of college-level learners of English in China. *Asian EFL Journal, 9*(2). Retrieved October 2, 2007, from http://www.asian-efljournal.com/June_07_mw.php
- Willerman, B., & Melvin, B. (1979). Reservations about the keyword method. *Canadian Modern Language Review, 35*, 443-453.
- Yaakub, M. B. (2010). Teaching Arabic as a second language: An evaluation of keyword method effectiveness. *Journal of US-China Public Administration, 7*, 50-58.

APPENDIX A

A Sample from Practice Booklet of Keyword Group

<u>New words</u>	<u>Keyword</u>	<u>Translation</u>
Mattress	/matte/	دشک
Eraser	/leyzer/	پاک کن
Pool	/pool/	استخر
Daisy	/dizi/	گل مروارید
Towel	/taaval/	حوله
Candle	/kandoo/	شمع
Parrot	/par/	طوطی
Tear	/tir/	اشک
Axe	/aks/	تبر
Escalator	/eskelet/	پله برقی

APPENDIX B

A Sample from Practice Booklet of Context Group

- 1. Mattress:** The part of a bed which is soft and makes the bed comfortable for sleeping.
 - *My mother made a pink mattress with white ribbons for me to sleep on it.*
- 2. Eraser:** A piece of rubber used to remove pencil or pen marks from paper.
 - *If you draw or write in pencil you can always rub out your mistakes with an eraser.*
- 3. Pool:** A hole that has been built and filled with water so that people can swim in it.
 - *I like swimming in pool during the summer.*
- 4. Daisy:** A white flower with a yellow center which often grows in grass.
 - *I like white flowers such as white rose and daisy.*
 -
- 5. Towel:** A piece of cloth that you use for drying your skin or for drying things such as dishes.
 - *The school provides paper towels for the children to dry their hand on.*
- 6. Candle:** It is round with a piece of sting in the middle of it that burns to give light.

- *It's so dark here. Shall I light a candle?*
- 7. **Parrot:** A bird with very bright and colorful feathers that can copy what people say.
 - *Some people keep parrots as pets.*
- 8. **Tear:** A salty liquid that comes out of your eye when you are crying.
 - *I could tell you stories that would bring tears to your eyes.*
- 9. **Axe:** A tool used for cutting wood or trees.
 - *Reza used axe to cut down an old apple tree.*
- 10. **Escalator:** A set of stairs moved up or down by electric power.
 - *I'll meet you by the down escalator on the second floor*

APPENDIX C

A Sample from Practice Booklet of Word List Group

<u>New words</u>	<u>Translations</u>
Mattress	دشک
Eraser	پاک کن
Pool	استخر
Daisy	گل مروارید
Towel	حوله
Candle	شمع
Parrot	طوطی
Tear	اشک
Axe	تبر
Escalator	آسانسور