

## The Impact of Keyword Technique on the Students' Vocabulary Retention Ability in an EFL Class

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**Abstract** This paper makes an effort to show the effectiveness of keyword technique as a vocabulary retention technique. The study was a one-group pretest-posttest experiment and aimed to investigate the effect of keyword technique on vocabularies retention ability of 40 Bangkok University students and explore their attitude towards the use of keyword technique. The instruments were the vocabulary tests, and the questionnaire exploring attitude towards keyword technique. The pretest and posttest scores of the experimental group were calculated by descriptive statistics and compared by using a dependent t-Test measure. It was found that students obtained higher scores for the posttest than the pretest scores at the 0.05 level of significance. In addition, their attitude towards using the keyword technique was at a high level. Moreover, the results from this study supported that using keyword technique helped the students store and retrieve a new bunch of vocabularies, motivated them to learn English language and expanded their imagination and creativity. Pedagogical implications into vocabulary retention technique were suggested.

**Keywords:** Reading comprehension, vocabulary retention

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### 1. Introduction

A great deal of researches including empirical researches and theories about vocabulary learning and vocabulary acquisition to enhance vocabulary size which is directly linked to language use are in attention because vocabulary plays a vital role in language use, and academic and career advancement (Oxford, 1990; Nation, 2008; Wei, 2007; Good and Cheng, 2009). However, it is useless if the students learn a lot of words or possess a large number of vocabularies but they can't remember or retain in their long-term memories. Wei (2007) stated that nowadays long-term retention has received wide attention as one of the greatest problems in learning new words. Quinn and Irvings (1997) mentioned that the hardest way to learn the new words is to try to memorize a list of unrelated words and their meanings. The students need not only learn a lot of words, but to remember them. Unlike the learning of grammar which is essentially a rule-based system, vocabulary knowledge is largely a question of accumulating individual item. The important point is that the students must be able to store and retrieve the vocabularies when they read for comprehension (Thornbury, 2008). Similarly, the inability to recall the known words adversely affects not only reading comprehension but also spoken and written discourse (Wei, 2007). Therefore, the problem of remembering a large number of vocabularies is common for the English learners around the world as well as Thai students.

In Thailand, Thai students including Bangkok University students naturally like to learn word list by rote for examination which will disappear from their memories very soon, so this vocabulary retention method is proved useless and unproductive. This problem can lead to poor score of English reading test because they will forget the learned words very soon since they can't store and retrieve the words immediately (Folse, 2004). Moreover, there are several problems which make Thai students fail to learn new vocabularies which result in the inability to retain a large amount of new words in their long-term memories (Sribayak, Sirihanjanavong & Charoenchang, 2012). Here are the problems of Thai students.

1. They lack independent reading. That is, they do not like reading outside class, so they read less. The less the students read, the fewer the chances they encounter the new vocabularies.
2. They do not use context clues when reading. So, they can't infer and guess the word meaning from context. Hence, they can't unlock the meaning of the unfamiliar words and can't get the gist of the text.
3. They always look up the words in a dictionary to find the meaning of difficult words immediately when they encounter them which will interrupt their reading comprehension. Besides, they do not use a monolingual dictionary (English-English dictionary), but they use the pocket or electronic dictionary that can be misleading.
4. When they look up the meanings of the new words in a dictionary, they do not pay attention to parts of speech, word

origins, and example sentences. Consequently, they cannot use those words appropriately and they will disappear from their memories soon.

5. They ignore the pronunciations of the new words they learned. So, they mispronounce the words which obstruct the ability to remember the new words.
6. They do not repeat the learned words in spite of the fact that the repetition promotes the word retention. What's more, they like to copy the vocabulary exercises from their friends, so they have no chance to repeat or recycle the learned words which will improve word retention.
7. They do not use the learned words to write the stories in their personal context.
8. They do not like independent study but they like being spoon-fed with the vocabulary knowledge and prefer the teachers to translate vocabulary.
9. They are usually overloaded with a large number of words each classroom time. This practice is not good because the words learned over spaced learning session were retained better than words that were learned in concentrated burst (Thornbury, 2008).

In order to solve the above-mentioned problems, vocabulary retention techniques, namely grouping and making acronym, word association, pronouncing the word correctly, making visual picture, repeating and reviewing, doing vocabulary exercises, mind map, keyword technique, rhyming, using word study and context, placing new words into a personal context, and checking etymology are in attention because they can help the students to store a large number of vocabularies in their long-term memories and recall or retrieve to achieve reading comprehension (Oxford, 1990; Thornbury, 2008; Nation, 2008; Nemati, 2009). Furthermore, vocabulary retention techniques will make the students happy to learn a lot of words as they can keep those words in memory which can contribute to optimistic attitude and increased confidence in learning vocabulary. Oxford (1990) stated that long-term retention has received wide attention as one of the greatest problems in learning the new words. Vocabulary is by far the most sizable and unmanageable component in language learning, but vocabulary retention techniques help the students to cope with this difficulty.

Among aforementioned 12 vocabulary retention techniques, keyword technique is the best known technique and one of the most popular and the most extensively researched vocabulary teaching methods because the outstanding strength of this technique is that it combines verbal linkage and visual imagery in the memory process. Numerous studies have confirmed the effectiveness of the keyword technique in both foreign language and language vocabulary learning (Atkinson & Raugh, 1975; Pressley & Levin, 1985; Cohen, 1987 cited in Zhang, 2005). What's more, Pressley et al., 1982 cited in Nation, 1990) reached the conclusion of the advantages of keyword technique from his comprehensive survey of almost 50 studies accordingly.

1. The keyword technique helps the learning of foreign vocabulary and is superior to other techniques, such as rote repetition, placing vocabulary in a meaningful sentence, and using pictures or synonyms.
2. The use of keyword technique is not restricted to concrete noun, but can be used with verbs, abstract nouns, and adjectives.
3. The use of the keyword technique is not restricted to adults. It can be used with children as young as three years if they are helped a lot in using the technique.
4. The keyword technique does not slow down recall of the meaning of foreign words.
5. Keyword technique enhances the imagination of the students. The more imagination the students have, the more useful the technique, although it is often difficult to think of keywords that sound like the foreign word.

Therefore, this research would like to find out how keyword technique affects the vocabulary retention ability of the students by comparing the students' vocabulary retention ability before and after learning keyword technique. Below is the definition of keyword technique.

*"Keyword technique* refers to connecting the pronunciation of the second language (English) with the meaning of the first language (Thai) plus generating an imagination. For example, the students connect the sound of the English word "condolence" with the meaning in Thai "CON-DO-LOM" which means that the condominium collapsed, and they further imagine that when the condominium collapsed, many victims will die and be injured, causing the great sorrow. Normally, people should offer the sympathy and sadness to the victims' relatives, which is equivalent to the meaning of "condolence." Another example is that the students connect the sound of the English word "jeopardy" with the meaning in Thai "JEB-POR-DEE" which means at risk, dangerous, and be destroyed. So, when something is in jeopardy, it means that it is at risk, dangerous, and destroyed."

Furthermore, various perspectives of keyword technique are presented as follows:

1. Hauptmann (2004) said that keyword technique was originally coined and described by Atkinson as follows:

"By a keyword we mean an English word that sounds like some part of the foreign word. In general, the keyword has no relationship to the foreign word except for the fact that it is similar in sound. The keyword method divides vocabulary learning into two stages. The first stage requires the subject to associate the spoken foreign word with the keyword, an association that is formed quickly because of acoustic similarity. The second stage requires the subject to form a mental image of the keyword, "interacting" with the English translation; this stage is comparable to a paired-associate procedure involving the learning of unrelated English words."

2. Thornbury (2008) stated that keyword technique is the best known mnemonic technique. It involves devising an image that typically connects the pronunciation of the second language word with the meaning of a first language word. For example, when I was learning the Maori word *te aroha* (love) the word sounded a little like the English word *arrow+er*, so I pictured Cupid with a bow and arrow. He also said further that devising keywords takes time, and amount certain of training. Indeed, it can take more time and training than some practitioners think it is worth. However, the research is compelling: there seems to be no other single technique that works well. Therefore, when teaching new vocabulary items, it may be a good idea to allow learners a few minutes to silently and individually devise keywords. Then, if you ask them to tell their neighbors about their keywords it will not only reinforce them, but it may help train learners who are having trouble adopting this technique.

3. Oxford (1990) described that keyword technique combines sounds and images so that the learners can easily remember what they hear or read in the new language. First, identify a familiar word in one's own language or another language that sounds like the new word. Second, generate a visual image of the new word and the familiar one interacting in some way. Notice that the target language word does not have to sound exactly like the familiar word and additional pronunciation practice may be needed. Here are some examples of keywords for remembering what is heard or read. Brian links the new French word *froid* (cold) with a familiar word, *Frued*, then imagines Freud standing outside in the cold. *Sobor* is the Russian word for council, so Alice links this new word with *so bored*, picturing a bunch of councilors "so bored" with their meeting.

4. Nation (2008) elaborated on the keyword technique that it is primarily a way of making a strong link between the form of an unknown word and its meaning. It involves two steps after the learner has met the unknown word and has found or been provided with its meaning. The first step is to think of a first language word (the keyword) which sounds like the beginning or all of the unknown word. The second step is for the learner to think of a visual image where the meaning of the unknown word and the meaning of the keyword is combined. The keyword technique works because it makes learners process more than one feature or a word and this processing is not superficial in the way that rote repetition is superficial. The only limit is the learner's imagination. The keyword does not have to sound exactly like the foreign word to be learned, and it does not have to be like all of the word. If the form of the keyword is like the beginning of the foreign word, then that is usually enough.

Here is an example. If an Indonesian learner wants to learn the English word *pin*, the learner could use the keyword *pintu* which is the Indonesian word for "door". The learner then thinks of an image involving a door and a pin.

To conclude, originally introduced by Atkinson, the keyword technique is learner-based and one of vocabulary retention techniques which works well for acquiring foreign language vocabulary. Two stages are involved in this technique: first, a connection based on acoustic similarities is made between a new word and a familiar word (keyword) and second, an imaginable link that associates the new word and the keyword together is made (Baleghizadeh & Ashoori, 2010).

## 2. Purposes of the Study

2.1 To compare the students' vocabulary retention ability before and after learning the keyword technique.

2.2 To survey the students' attitude towards using the keyword technique.

## 3. Research Questions

To accomplish this investigation, the following research questions were formulated:

1. To what extent did the students improve their vocabulary retention ability after learning the keyword technique?
2. How did the students respond to the use of keyword technique?

#### 4. Related Researches on Keyword Technique

A number of related researches about the benefits of keyword technique have been done. Most of them compare and experiment the advantages of keyword technique. The following four pieces of researches were done to compare the effect of different types of vocabulary retention techniques on students' long-term memories. The first one was carried out by Baleghizadeh & Ashoori (2010) who compared the effect of keyword and word list method on immediate retention of English vocabulary in a natural classroom setting. The results showed that the keyword method produced better recall compared to word list method, suggesting a promising educational value for its utility. Similarly, Chen (2006) compared three strategies (keyword-given, keyword-generated, and rote rehearsal method). The findings revealed that keyword technique is better than rote rehearsal in terms of retaining vocabulary. In addition, the keyword-given group is superior to the keyword-generated group on the recall tests showing that the application of the keyword method in new tasks needs students' life experiences and first language expression. Therefore, these factors may result in difficulty in creating interacting image when students intend to apply the keyword method into new context. Another study conducted by Rodriguez and Sadoski (2000) emphasized the effect of rote learning, context, keyword, and context/keyword methods on retention vocabulary in EFL classroom. The findings explored the effectiveness of the training in the use of keyword method for vocabulary acquisition by the students who are experienced in learning a foreign language as well as revealed that the keyword-trained students outperformed the control group in recall of word definitions. Fourthly, Brown and Perry (1991, cited in Hauptmann 2004) compared three learning strategies in authentic classroom situation, *keyword only*, *semantic* (meaning through context), *keyword-semantic* (keyword plus context) and found that the *keyword-semantic* strategy works best. They also made the link between this performance and the depth-of-processing theory, i.e. a well-known theoretical framework with the learning strategy.

With regard to experiment research, Benge & Robbins (2010) conducted a study showing that keyword mnemonic method was effective. They experimented with junior and senior students who had received vocabulary instruction using the keyword in their class. The research clearly pointed to a strong relationship between vocabulary knowledge and reading comprehension and most agree that the larger one's base vocabulary, the better one's ability to comprehend text. Students who are able readers continued to grow their vocabulary while the students who are struggling readers do not. In an effort to bridge this gap, they used action research methodology to explore keyword mnemonics as a way to actively engage their students in learning new vocabulary. The results indicated that the keyword method was effective with her students. The last research about keyword technique is the study of Kaminska (2001;2002) which was concluded by Hauptmann (2004) accordingly.

"The research examined the effectiveness of the keyword technique when teaching phrasal verbs. The study was conducted over three consecutive years, and the experiments properly lasted to three to four weeks only. In the process of this study, she developed a variation of the keyword technique, which she calls literal-keyword technique. She drew pictures to assist the learners to form an effective image, although she arrived at the conclusion that this was not probably necessary. The results of her study strongly suggested that the keyword technique is also suitable to teach phrasal verbs and that these learnt with the literal-keyword technique seem to be better retained than those acquired by more traditional discovery exercises, especially when large amounts of vocabulary are to be learnt. A side effect of her study was that it showed the flexibility of the keyword technique. It was used for an area which is normally not seen as suitable for the use of it."

In conclusion, a number of researches conducted in different countries where English is taught as a foreign language showed that keyword technique is beneficial to the students' word retention ability and outperforms other vocabulary retention techniques such as rote learning, repetition, and using imagery in terms of word retrieval. Hence, it's worth experimenting whether keyword technique improves Bangkok University students' vocabulary retention ability. Besides, in addition to improving vocabulary retention ability, the researcher would like to find out other benefits of keyword technique which affects the students' vocabulary learning.

#### 5. Research Methodology

1. This research is one-group pretest-posttest design. The data were collected from 40 students enrolling in EN 111 in the first semester of 2012 academic year at Bangkok University. The participants were selected by the purposive sampling technique. Among these participants, twenty of them were males and other twenty students were females. The age of the participants ranged from 18 to 20 years old.

2. Two instruments were employed in the study: 1) vocabulary test for pretest and posttest, 2) the questionnaire surveying the students' attitude towards using keyword technique.

3. The data obtained from the vocabulary pretest and posttest and the questionnaire were analyzed quantitatively through dependent t-Test and descriptive statistics.

4. Treatment procedure was presented accordingly.

*Week 1:* The teacher taught the students new 20 words and they were asked to write down the meanings in either Thai or English. The teacher suggested them to think their own way to remember the new 20 words. At the end of the period, the teacher informed that the first vocabulary test will be taken next week (Week 2).

*Week 2:* The teacher had the students take the first vocabulary test. The test requires the students to choose the best answer to complete the sentences. The vocabulary items are the words that the students have learnt in week 1. Each student completed the test within 30 minutes. After that, the teacher corrected and recorded the pretest scores as shown in the table 1.

*Week 3:* The teacher introduced the students to know keyword technique - one of several vocabulary retention techniques. The teachers taught the students how to apply keyword technique to help them remember new vocabularies as the following steps:

Step 1: Check the right pronunciation of the target word (English word)

Step 2: Connect the pronunciation of an English word with the meaning of a Thai word or with the familiar word.

Step 3: Devise the visual image of the English word interacting with the meaning of Thai word or the familiar word. After they were introduced how to apply keyword, each student will be asked to practice using keyword technique to help remember another set of 10 words.

*Week 4:* The teacher taught the students how to use keyword technique to remember the new 20 words appearing in the first vocabulary test. The teachers had the students practice individually. At the end of the period, the teacher told the students that there will be a second test whose content is similar to the first vocabulary test.

*Week 5:* The students were asked to do the second vocabulary test. They have 30 minutes to complete the test. The test was aimed at checking the students' memory of the word definitions that they memorized by using keyword technique in (Week 4). The teacher corrected the test and recorded the posttest scores as shown in table 1.

**Table 1:** Pretest and posttest scores

Student No.	Pretest (20 scores)	Posttest (20 scores)
1.	7	14
2.	11	16
3.	10	15
4.	10	16
5.	12	17
6.	13	19
7.	11	18
8.	13	20
9.	12	16
10.	14	19
11.	14	18
12.	10	16
13.	8	15
14.	11	18
15.	9	16
16.	11	15
17.	12	17
18.	10	16
19.	9	15
20.	8	14
21.	4	15

22.	14	17
23.	10	16
24.	11	13
25.	9	13
26.	12	15
27.	14	17
28.	13	18
29.	9	13
30.	12	16
31.	8	14
32.	10	13
33.	9	13
34.	10	14
35.	11	14
36.	12	16
37.	11	17
38.	13	18
39.	14	18
40.	9	13
	$\bar{X} = 10.75$	$\bar{X} = 15.83$

## 6. Result

*Research Question 1: To what extent did the students improve their vocabulary retention ability after learning keyword technique?* To answer the first research question concerning the student's vocabulary retention ability, the results of which have been shown in Table 2.

**Table 2:** Mean of the pretest and posttest of the students

	N	$\bar{X}$	S.D.	t	sig
Pretest	40	10.75	2.193	-19.219	.000
Posttest	40	15.83	1.907		

The results shown in table 2 indicate that the mean of the posttest is higher than that of the pretest by using the Paired-Sample Test. The result from the t-Test revealed that there was significant difference in pretest and posttest. The findings supported that keyword technique can improve the students' vocabulary retention ability.

*Research Question 2: How did the students respond to the use of keyword technique? To answer the second research question concerning students' views in self-report, the results of which have been shown in table 3.*

Statements for checking students' attitude towards using keyword technique	Response	Total number of students (n=40)	
		No. of students	Percentage
1. The keyword technique is interesting and challenging in vocabulary learning.	Yes	32	80.0
	No	0	0.0
	Not sure	8	20.0
2. The keyword technique helps me to be aware of the pronunciation of English words.	Yes	35	87.5
	No	3	7.5
	Not sure	2	5.0
3. The keyword technique helps me to remember the meaning of English words.	Yes	34	85.0
	No	0	0.0

	Not sure	6	15.0
4. The keyword technique helps me to acquire vocabulary more efficiently and rapidly.	Yes	36	90.0
	No	0	0.0
	Not sure	4	10.0
5. The keyword technique helps me to store and recall vocabulary easier.	Yes	37	92.5
	No	1	2.5
	Not sure	2	5.0
6. The keyword technique can retain my vocabulary in long-term memory.	Yes	33	82.5
	No	3	7.5
	Not sure	4	10.0
7. I like to memorize vocabulary through keyword technique.	Yes	36	90.0
	No	2	5.0
	Not sure	2	5.0
8. Keyword technique makes me feel relaxed and have fun when studying English.	Yes	35	87.5
	No	3	7.5
	Not sure	2	5.0
9. Keyword technique expands and enhances my imagination and creativity.	Yes	39	97.5
	No	1	2.5
	Not sure	0	0.0
10. Keyword technique motivates me to learn new vocabularies.	Yes	36	90.0
	No	2	5.0
	Not sure	2	5.0

Table 3 shows that the students' attitude towards the keyword technique is positive because the majority of the students responded to each statement as follows:

1. 80 % of the students thought that keyword technique is interesting and challenging.
2. 87.5 of the students reported that keyword technique helps them to be aware of the pronunciation of English words.
3. 85% of the students said that keyword technique helps them to remember the meaning of English words
4. 90 % of the students expressed that keyword technique helps them to acquire vocabulary more efficiently and rapidly.
5. 92.5 % of the students said that keyword technique helps them to store and retrieve vocabulary easier
6. 82.5 % of the students reported that keyword technique can retain their vocabulary in long-term memory.
7. 90 % of the students said they like to memorize vocabulary through keyword technique.
8. 87.5 % of the students reported that keyword technique makes them feel relaxed and have fun when studying English.
9. 97.5 % of the students said that keyword technique expands and enhances their imagination and creativity.
10. 90% of the students said that keyword technique motivates them to learn new vocabularies.

## 8. Conclusion and Implication

The research findings indicated that keyword technique contributes to the improvement of students' vocabulary retention ability and works because it makes the students process more than one feature of a word and this process is not superficial in the way that rote repetition is superficial (Nation, 2008). Furthermore, the keyword technique becomes a tool for storing and retrieving, and expanding vocabulary size. It helps the students to retain the words in their long-term memory and it is easy to store and recall. The findings were in line with (Aaleghizadeh & Ashoori, 2001; Chen, 2006; Rodriguez & Sadoski, 2000; Benge & Robbins, 2010). In addition, the students agreed that keyword technique made

them aware of pronunciation of English words. This is due to the fact that they realize that the knowledge of a word must include knowing not only how it is written, how it is used as a part of speech, but also how it sounds (Sedita, 2005). The studies showed that the words that are difficult to pronounce are more difficult to learn (Lenier & Maker, 1984; Nation, 2008). Consequently, the teacher should make words easy to learn because they are better retained.

The students should be encouraged to practice word pronunciation continuously since if the students take time to learn the pronunciations of certain words and practice saying them clearly with consistency, it will increase their retention skills (Pickrell, 2010). Similarly, Thornbury (2008) proposed that the teacher should direct attention to the sounds of the new words particularly the way the words are stressed because the students can exploit the sound of the words to facilitate storage in memory. In order to improve the word pronunciation of the students, it is necessary to guide them to use English-English dictionary effectively. Since the students can't tell the pronunciations of the words from their spelling, they have to look up the words in pronunciation guide in the dictionary. If they can pronounce a new word to themselves, they are more likely to remember it (Lenier and Maker, 1984). In addition, to remember the meaning of a new word, the teacher should tell the students to make the best use of the dictionary to reword the definition in their own words, to identify synonyms and antonyms for the word, to use the word in their own meaningful sentences, and to explore the meanings of the words when they are used in other contexts.

Motivation to learn English vocabulary is another advantage the students obtained from learning keyword technique because motivation can lead to English proficiency improvement as Thornbury (2008) claimed that the achievers are generally more motivated to learn English than the underachievers; consequently, they spend more time on rehearsal and practice using vocabulary retention technique, which in the end will pay off in terms of memory. Besides, the students reported that keyword technique expands and enhances their imagination and creativity which involves devising a visual image that typically connects the pronunciation of the second language word with the meaning of a first language. Creating visual image or picture is a simple and effective way to help remember the words. Hence, the more imagination and creativity the students have, the better they can memorize vocabulary. Oxford (1990) confirmed the importance of using picture coming from the students' imagination and creativity to aid memory for four reasons. First, a large proportion of learners have a preference for visual learning. Second, the mind's storage capacity for visual information exceeds its capacity for verbal material. Third, the most efficiently packaged chunks of information are transferred to long-term memory through visual images. Fourth, visual images may be the most potent device to aid recall of verbal material. Although the findings were inconsistent with Nation (2008) saying that the only limit of keyword technique is the learner's imagination, he encourages the beginners who learn keyword technique that in spite of the difficulty to think of keyword that sounds like the foreign word, the more imagination is still necessary and useful for keyword technique application. Based on the conclusion of this research, it is recommended that the teacher should

1.) introduce ready-made keyword technique examples to the students first to arouse their imagination and creativity and later encourage the students to realize that keyword technique must be self-generated or self-created, i.e. not borrowed from other learners or teachers. The students must be aware that keyword technique can be simple, complex, mundane, unusual, and silly in the eyes of others, but they must make sense and be meaningful to the students themselves because the students themselves not other who will use this technique to remember vocabularies (Oxford, 1990; Thornbury, 2008).

2.) allow the students a few minutes to silently and individually devise keyword after learning new vocabulary items. Moreover, the teachers should teach other vocabulary retention techniques to the students and boost them to integrate every vocabulary retention technique and use them interchangeably since there is no single technique which is regarded the best and works well. However, while keyword technique works well, it has some limitations: it cannot be applied with the abstract words, and it is difficult to think of keyword that sounds like foreign words. In such case, the students must use other vocabulary retention techniques to help retain vocabularies (Thornbury, 2008; Baleghizadeh & Ashoori, 2010).

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