

Memorizing Vocabulary through Mind Mapping Technique

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Abstract: This paper makes an attempt to show the effectiveness of mind mapping technique as a vocabulary storage method. The study was a one-group pretest-posttest experiment and aimed to investigate the effect of mind mapping technique on vocabularies learning of 40 Bangkok University students and explore their attitude towards the use of mind mapping technique. The instruments were the vocabulary tests, and the questionnaire exploring attitude towards mind mapping technique. The pretest and posttest scores of the experimental group were calculated for descriptive statistics and compared 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 mind mapping technique was at a high level. Moreover, the results from this study supported that using mind mapping technique helped the students store a new bunch of vocabularies, and motivated them to learn English language.

Keywords: EFL learners, mind mapping technique, vocabulary learning

1. Introduction

In the context of English as foreign language learning, vocabulary knowledge has been identified as one of the utmost obstacles of most students as they are learning foreign language (Shaw, 1991). If the students have limited number of vocabulary, they will have some difficulties to understand and speak English language. Like other EFL learners, Bangkok University students in Thailand also confront with the problem of lacking of vocabulary knowledge.

The lack of vocabulary knowledge of the students may due to storing and retrieving vocabulary they have learnt. Even if these students tried to memorize new vocabulary on their own ways, they found that memorizing new words is not an easy job for them at all (Beheshti, 2011; Kun and Mei, 2010). Therefore, the vocabulary recognition of the students is far lower than they expected. This makes the students discourage to learn English language leading to their academic failure in the future.

Thus, to encourage the students' confidence in learning vocabulary, the teachers can assist the students in overcome retention and recall difficulties by teaching the students specific vocabulary retention techniques as shortcuts to enhance their learning ability to make vocabulary memorizing less of struggle (Saeidi and Jafari, 2010). Oxford and Scarcella, (1994) and Nemati, (2009) agreed that vocabulary can be learnt intentionally through some strategies and plans. Furthermore, the vocabulary retention techniques have been proved to be very helpful when learning new words since they facilitate the storage and retrieval of new information when it is needed for comprehension or production (Oxford, 1990).

The vocabulary retention techniques classified by Oxford, 1990 (as cited in Jenpattarakul, 2012), namely grouping, association, placing new words into a context, using imagery, semantic mapping, using keyword, replacing sounds in memory, and structure reviewing. Basically, some techniques such as placing new words into a context, using keyword, structure reviewing, and replacing sounds in memory are employed less by Thai students because these vocabulary retention techniques involve grammatical point, vocabulary rule, and language pattern which the students considered as obstacles in vocabulary learning. As highlighted by Jenpattarakul (2012), Bangkok University students prefer making visual picture because it is a simple and effective way to remember the words. He also suggested that the teachers should design the teaching of vocabulary to be entertaining and easy to understand.

Consequently, to encourage students to learn vocabulary easily, semantic mapping or mind mapping is believed as one of the effective techniques which can be used to teach vocabulary. This technique will help the students to solve the problem of lacking of vocabulary knowledge and encouraging students to memorize vocabulary easily. The students remembered unknown words better when provided with both pictorial and written annotations than when provided with only one kind or no annotation (Plass and et.al, 1998 cited in Nam, 2010). Mind mapping is the technique that let students use left and right brain in the memorizing process to improve their vocabulary retention (De Porter, Readon, and Nourie, 1999). Mind mapping technique allows the students to clarify their thoughts by categorizing and grouping into related ideas (Bono, 2010). This is confirmed that mind mapping is a creative note-taking method which eases us to remember much information

Furthermore, Buzan (1993), the memory expert, explained that mind mapping is a pattern which at least consists of picture, symbol and color that will not just help the students to understand the vocabulary knowledge but also make the students feel good and enjoyable, and attract their brain which at last lead them to have interest in mastery vocabulary knowledge. Additionally, the study showed that mind mapping is also a useful technique that can be introduced to the students at any level of proficiency (Eppler, 2006). Michael (2010) also supported that mind mapping technique has been used with great success in EFL classes around the world.

For these reasons, mind mapping technique is chosen to be a specific technique to help memorize vocabulary of the students at Bangkok University, Thailand, and the present study makes an attempt to show the impact of using mind mapping technique and reflect the students' attitude towards mind mapping technique. The results of this study can be the guidance of the teachers in developing teaching method and persuading the students to develop their vocabulary retention skill.

2. Purposes of the Study

This study aims to:

1. investigate the effect of mind mapping technique on vocabulary learning.
2. explore the students' attitude towards the use of mind mapping 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 after learning with mind mapping technique?
2. How did the students respond to the use of mind mapping technique?

4. Previous Research Studies

Oxford (1990) suggested that mind mapping incorporates a variety of memory strategies such as grouping, using imagery, associating, and elaborating and it is important for improving both memory and comprehension of new vocabulary items. Bornay (2011) investigated the usefulness of using grouping and mind mapping techniques as vocabulary learning tools of the Spanish first-year university students. The findings suggested that mind mapping technique can contribute to developing participants' visual learning style, raise metacognitive awareness, and enhance their regulatory skill. Moreover, the results of the participants' reflection on using mind mapping technique showed that mind mapping is very useful when learning new words. The reflection is relevant with Oxford (1990), who emphasized that memory strategies have proved to be very useful when learning new words since they facilitate the storage and retrieval of new information when it is needed for comprehension and production.


Besides, many research studies have revealed that mind mapping techniques were used by EFL learners when learning new words in overcoming retention and recall difficulties. The first one was conducted by Baleghizadeh and Naeim (2011), who did an action research to investigate vocabulary retention of an EFL learner through semantic mapping technique. The results confirmed that semantic mapping foster learner's vocabulary retention skill. Similar findings were reported by Morin and Goebel, 2001 (cited in Baleghizadeh and Naeim, 2011), which emphasized the effectiveness of using semantic mapping as a strategy that helps beginner and intermediate learners recall words better. In the same line with the study of Kun and Mei (2010), the findings demonstrated the effectiveness of vocabulary learning strategies: combining mind mapping with corpus-based data-driven in vocabulary acquisition of Chinese English major students. The results also indicated that learning vocabulary through mind mapping technique is more effective than learning vocabulary by rote recitation of EFL students. Furthermore, Pishghadam and et.al (2010) did the experiment to examine the effects of visual and verbal intelligences-based teaching on vocabulary retention and written production of Iranian intermediate EFL learners. The findings revealed that the students' vocabulary retention was enhanced by visual intelligences-based teaching. It is clear that the researchers who conducted these studies maintained that mind mapping technique or any visualize format is crucial to vocabulary learning and retaining of EFL learners.

Another line of research has centered on mind mapping considered as one of great personal learning tools for knowledge construction and sharing. The study of Eppler (2006), for example, demonstrated that mind mapping technique enhanced learners' motivation, attention, understanding and recall. The findings also showed advantages of using mind mapping technique as follows: 1) be easy to learn and apply 2) encourage creativity and self-expression 3) provide a concise hierarchic overview and 4) be easy to extend and add further content. The research has also shown that mind mapping dropped in the categories of attractive, colorful and memorable features. For these features, mind mapping tends to be more memorable at medium to high level. Eppler further states that mind mapping would be best used in-class and is great personal tools of undergraduate and graduate university teaching.

It is important to recognize that the above studies have attempted to equip the EFL students with mind mapping technique and train the students to utilize this vocabulary learning tool effectively to develop the other language skills.

5. Perspectives of Mind Mapping

Mind mapping technique is known as semantic map, net working, cognitive mapping, or memory mapping. The best mind mapping is colorful and uses much pictures and symbols; usually like an art (Buzan, 1993). Colors and pictures help to construct students' imagination in making mind mapping with their own styles since words or pictures which are in the curvy lines or branches will help the students' memory to make associations. Based on Buzan's mind maps, Eppler (2006) summarized the key features and main application parameters mind map as follows:

Format Parameters	Mind Maps
<ul style="list-style-type: none"> • Sample representation 	<ul style="list-style-type: none"> •  <p>Source: http://mrdauzz92.blogspot.com/2010/12/mind-mapping.html</p>
<ul style="list-style-type: none"> • Definition 	<ul style="list-style-type: none"> • A mind mapping technique is multicolored and image-centered, radial diagram that represents semantic or other connections between portions of learned material hierarchically
<ul style="list-style-type: none"> • Main function or benefit 	<ul style="list-style-type: none"> • Show sub-topics of a domain in a creative and seamless manner
<ul style="list-style-type: none"> • Typical application context 	<ul style="list-style-type: none"> • Personal note taking and reviewing
<ul style="list-style-type: none"> • Application guidelines 	<ul style="list-style-type: none"> • Use it for pre-analytic idea jostles or rapid note-taking, or to structure the main contents of a course or topic hierarchically
<ul style="list-style-type: none"> • Employed graphic elements 	<ul style="list-style-type: none"> • Central topic bubble and colored (sub-) branches with text above branches, pictograms
<ul style="list-style-type: none"> • Reading direction 	<ul style="list-style-type: none"> • Center-out
<ul style="list-style-type: none"> • Core design rules or guidelines 	<ul style="list-style-type: none"> • Start with the main topic (center) and branch out to sub-topics, employ colors to add additional meaning. Write text above the branches
<ul style="list-style-type: none"> • Macro structure adaptability 	<ul style="list-style-type: none"> • Somewhat flexible, but always radial
<ul style="list-style-type: none"> • Level of difficulty 	<ul style="list-style-type: none"> • Low
<ul style="list-style-type: none"> • Extensibility 	<ul style="list-style-type: none"> • Open
<ul style="list-style-type: none"> • Memorability 	<ul style="list-style-type: none"> • Medium to high
<ul style="list-style-type: none"> • Understandability by others 	<ul style="list-style-type: none"> • Low

6. Methodology

The participants and Setting

Participants of this study comprise 40 first-year students at Bangkok University in Bangkok, Thailand. The participants were selected by the purposive sampling technique. Among these participants, twenty nine of them were males and other eleven students were females. The age of the participants ranged from 18 to 20 years old. All of them enrolled on a required Fundamental English II course of 3 credits in the first semester of the academic year 2012.

Instruments

To collect the data required, the following instruments were employed in the study:

Vocabulary Tests: Two pre and post multiple-choice tests are designed to check students' self-study progress. One vocabulary test was given in (week 1) functioning as the pretest and the second one as the posttest at the end of the term (week 6). Even though these two vocabulary tests were different, the contents and difficulty level are closely similar. The vocabulary items of the two tests are taken from a text book for EN011: English in Action Course, *American English File student Book 3* (2008) by Clive Oxenden and Christina Latham-Koening, Oxford University Press.

The self-report questionnaire: This self –report questionnaire survey the students' attitude towards mind mapping technique in vocabulary learning. It includes 10 statements corresponding to the students' attitudes on learning vocabulary through mind mapping techniques.

Data Analysis

Researcher checked the vocabulary tests. After that the data obtained from the tests and the questionnaires were analyzed quantitatively through dependent t-test and descriptive statistics. The data obtained from this study were subjected to a number of statistical techniques including the basic descriptive statistics, such as mean (\bar{x}), standard deviation (SD), and variance.

Treatment Procedure

Week 1: The teacher taught the learners 10 unfamiliar vocabularies from unit 1 from the *American English File Student Book 3* by telling the learners to remember the words' definitions. When the learners learnt new vocabularies, they were asked to write down the meanings either Thai or English. 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 learners to 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 learners have learnt in the first. Each student completes 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 learners to know Mind Mapping technique - one of several vocabulary retention techniques. The teachers taught the learners how to create mind maps as the following steps:

Step 1: Make a central image in the centre of the paper. Color and add something interesting.

Step 2: Draw some basic ordering ideas and spread out from the central image.

Step 3: Think of all funny and interesting things as much as possible and connect with the central image to give you the inspiration.

Step 4: Add some branches to the basic ordering ideas using symbols, pictures, and colors as much as possible.

Step 5: Think of the details which are interesting can encourage your curiosity, adding to your mind map.

Step 6: Continue it until you have adequate information for your mind map.

Week 4: The learners practiced to create mind maps of 5 new vocabularies from unit 1 from the *American English File Student Book 3*. Each student was asked to memorize words from unit 1 through mind mapping technique.

Week 5: The teacher taught the learners a new 10-vocabulary set from unit 2 from the *American English File Student Book 3* and gave them the word definitions. In this week, each student was asked to use mind maps to help them memorize these words. At the end of this period, the teacher informed that the second vocabulary test will be taken next week (Week 6).

Week 6: The learners were asked to do the second vocabulary test. They have 30 minutes to complete the test. The test is aimed at checking the learners' memory of the words' definitions that they memorized by

using mind mapping technique in (Week 5). The teacher corrected the tests and recorded the post-test scores as shown in table 1.

Table 1: Pre-test and Post-test scores

Student No.	Pre-test (20 scores)	Post-test (20 scores)
1.	8	12
2.	10	15
3.	11	18
4.	12	16
5.	10	15
6.	13	18
7.	11	15
8.	14	18
9.	13	15
10.	13	13
11.	15	16
12.	10	16
13.	9	13
14.	12	19
15.	14	20
16.	11	17
17.	13	17
18.	10	19
19.	10	13
20.	13	20

Student No.	Pre-test (20 scores)	Post-test (20 scores)
21.	12	19
22.	10	19
23.	11	17
24.	9	15
25.	10	16
26.	12	19
27.	13	19
28.	9	16
29.	9	18
30.	12	19
31.	14	19
32.	10	19
33.	10	15
34.	10	16
35.	10	18
36.	12	16
37.	10	19
38.	9	17
39.	11	20
40.	11	20
Average	11.15	17.025

7. Result

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

Table 2: Mean of the pre-test and post-test of the students

	N	X	S.D.	t	sig
Pretest	40	11.15	1.703	-16.559	.000**
Posttest	40	17.03	2.178		

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 finding supported that mind mapping technique was most likely to improve the students’ vocabulary retention skill.

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

Table 3: Percentage and number of students marking on each statement

Statements	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Mean	Standard Deviation
1. Mind mapping helps me to acquire vocabulary knowledge through working by myself.	47.5 (19)	25 (10)	20 (8)	7.5 (3)	0 (0)	4.125	0.992
2. Mind mapping helps me to remember new words.	37.5 (15)	30 (12)	27.5 (11)	5 (2)	0 (0)	4.0	0.934
3. Mind mapping helps me to learn vocabulary easily.	50 (20)	35 (14)	12.5 (5)	2.5 (1)	0 (0)	4.325	0.797
4. I feel relaxed when I study new vocabularies by using mind mapping.	57.5 (23)	37.5 (15)	2.5 (1)	2.5 (1)	0 (0)	4.5	0.679
5. Mind mapping increased my vocabulary proficiency.	30 (12)	37.5 (15)	30 (12)	2.5 (1)	0 (0)	3.95	0.846
6. Mind mapping motivated me to learn new vocabularies.	52.5 (21)	37.5 (15)	10 (4)	0 (0)	0 (0)	4.425	0.675
7. I learned new words through the mind mapping.	37.5 (15)	30 (12)	15 (6)	17.5 (7)	0 (0)	3.875	1.114
8. I can remember the meanings of words and store in my long-term memory.	30 (12)	42.5 (17)	12.5 (5)	12.5 (5)	2.5 (1)	3.85	1.075
9. Mind mapping decreases difficulty in vocabulary retention.	65 (26)	27.5 (11)	2.5 (1)	2.5 (1)	2.5 (1)	4.5	0.877
10. I can remember words in a very short time.	27.5 (11)	32.5 (13)	37.5 (15)	2.5 (1)	0 (0)	3.85	0.864
Total						4.14	0.885

Mean levels: 4.50-5.00 = very high
3.50-4.49 = high
2.50-3.49 = moderate
1.50-2.49 = low
1.00-1.49 = very low

From the table 3, we can see that the overall mean score was at a high level ($x = 4.14$, S.D. = 0.885). The three highest scores of the students' opinions fell on statement no. 9 "Mind mapping decreases difficulty in vocabulary retention" (4.50, S.D. = 0.877), statement no. 4 "I feel relaxed when I study new vocabularies by using mind mapping" ($x = 4.50$, S.D. = 0.679), and statement no. 6 "Mind mapping motivated me to learn new vocabularies" ($x = 4.43$, S.D. = 0.675) respectively. In other words, the students think that mind mapping has three benefits for learning vocabulary accordingly : 1) *the mind mapping technique helps them to decrease difficulties in vocabulary retention.* 2) *they feel relaxed when they studied new vocabularies by using mind mapping.* 3) *mind mapping motivated them to learn new vocabularies.* However, only 5 percent of all students rated strongly disagree. This could explain that the students reflect their very positive attitudes toward using mind mapping technique in vocabulary learning.

8. Conclusion and Implication

The research findings indicated that mind mapping technique may contribute to the improvement of students' vocabulary learning and retaining. Furthermore, the mind mapping technique becomes a tool for both storing and expanding vocabulary size. It helps the students to memorize words in their long-term memory because it is easy to recall. The positive effect of mind mapping technique become obvious after it was introduced to

be a vocabulary learning tool. The means of these scores have considerably and meaningfully increased comparing to the pretest scores before the students were taught through the mind mapping technique. It is confirmed that mind mapping improves the recall and retention of the students. Mind mapping can also help the students to solve the problem of lacking stock of vocabulary in their memory. It is concluded that mind mapping has high efficiency in vocabulary learning and retaining. Moreover, the result from the questionnaire showed that the students had a very high level opinion on benefit from memorizing words through mind mapping technique. Apart from higher vocabulary proficiency that the students gained from using mind mapping technique, they agreed that they can get rid of their uncomfortable feelings when learning new words from text. Additionally, the mind mapping motivated the students to learn vocabularies. This might be because mind mapping technique maximizes the students' vocabulary knowledge in the form of art (Buzan, 1993). To sum up, learning new vocabulary is a challenge to foreign language learners but they can overcome by having access to a variety of vocabulary learning strategies. Learners should be trained strategies they lack.

Based on the conclusions of this research, vocabulary can be learnt intentionally through some strategies and plans. The teachers can help the students gain greater control over their vocabulary learning process by teaching them specific vocabulary learning and retention techniques. This suggestion was supported by the study of Kitto, J., & McKeogh, J (2006). The EFL teachers should focus on the use of mind mapping technique to teach vocabulary for the first- year students. The teachers should also recognize that mind mapping are highly beneficial and could be introduced to the students as early as possible. To sum up, the teachers can help the students to enhance their knowledge of vocabulary through equipping learners with a variety of vocabulary learning techniques.

References

- Baleghzadeh, S., & Naeim, M. (2011). Enhancing vocabulary retention through semantic mapping: a single-subject study. *The International Journal-Language Society and Culture*, 32, 11-16.
- Buzan, Tony. (1993). <http://www.usingmindmaps.com/what-is-a-mind-map.html> Accessed on February 1st, 2012.
- Bornay, N. (2011). Explicit strategy training in vocabulary learning for beginning Spanish students. *FULGOR - Flinders University Languages Group Online Review*. http://journaldatabase.org/articles/explicit_strategy_training_vocabulary.html Accessed on February 2nd, 2012.
- Clive O., & Christina, L. (2008). *American English File Student Book 3*. Oxford University Press.
- De Bono. (2010). <http://www.usingmindmaps.com/mind-maps-ifn-education.html> Accessed on February 1st, 2012.
- Eppler, J. (2006). A Comparison between concept maps, mind maps, conceptual diagrams, and visual metaphors as complementary tools for knowledge construction and sharing. *Palgrave Macmillan Ltd.*, <http://www.palgrave-journals.com/ivs>. Accessed on February 2nd, 2012.
- Jenpattarakul, W. (2012). An examination of the usage of vocabulary retention techniques (VRTs) of Thai undergraduate EFL students. *Mediterranean of Art and Science*, 3(1).
- Kitto, J., & McKeogh, J. (2006). http://www.tki.org.nz/r/eso/esolonline/teachers/prf_read Accessed on February 1st, 2012.
- Kun, Y., & Mei, L. (2010). The effective strategy for the Chinese English Majors to learn vocabulary: Combining mind-mapping with corpus-based data-driven learning. http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=5608428 Accessed on February 1st, 2012.
- Nam, J. (2010). Linking research and practice: Effective strategies for teaching vocabulary in the ESL classroom. *TESL Canada Journal/Revue TESL DU CANADA*. 28(1), 127- 135.
- Nemati, A. (2009). Memory vocabulary learning strategies and long-term retention. *International Journal of Vocational and Technical Education*, 1(2), 14-24.
- Oxford, R. L. (1990). *Language learning strategies: What every teacher should know*. New York: Newbury House Publishers.
- Pishghadam and et.al (2010), The impact of visual and verbal intelligences-based teaching on vocabulary retention and written production of Iranian intermediate EFL learners. *MJAL*, 2(5). 379-395.
- Saeidi, M. & Jafari, M. (2010). The effect of awareness-raising strategy on EFL learners' retention of ESP terms. *International Conference on Language, Literature and Linguistics IPEDR*. Press, Singapore. 26, 343-348.
- Shaw, P. (1991). Science research students' composition processes. *English for Specific Purposes*. 10, 189-206.