The Use of Mind-Mapping Technique towards Students' English Vocabulary Retention at a Primary School

Thieu Ngoc Hung[1], Nguyen Thi Bich Lan[2]

[1,2]The People's Police Academy, Co Nhue, Tu Liem, Hanoi, Vietnam

ABSTRACT: This paper was an attempt to find out the effectiveness of mind-mapping technique on 4th graders' vocabulary retention at Doi Can Primary School. A total of 40 students participated in this study.Two instruments which were questionnaires and the pre-test and post- test scores were used before and after applying the mind-mapping in teaching vocabulary. The findings of the data analysis showed that mind-mapping can help the students to improve their abilities in memorizing English vocabulary and the students had positive attitudes toward the mind-mapping technique.

KEYWORDS: teaching English, teaching vocabulary, mind-map, vocabulary retention

1. INTRODUCTION

Nowadays, English has been playing an important role in various aspects of life such as entertainment, economy, science and education. As its popularity, our education system attaches special importance to teaching and learning English in many school levels from primary to university or higher education one. A plenty of programs and methods have been introduced aiming at improving Vietnamese's English skills.

It cannot be denied that vocabulary is a basic factor to study any second language. This is because vocabulary is integral to every language skill, including reading, writing, listening and speaking skill. Wilkins (1972) a famous linguist, emphasized the importance of vocabulary as "Without grammar, little can be without grammar, very little can be conveyed; without vocabulary, nothing can be conveyed" (pp. 111–112). Individuals cannot easily make conversations or convey their thoughts in both oral and written forms without having a certain level of vocabulary knowledge. Therefore, learning vocabulary is always one of the most concerned to English learners (Buzan,1993).

In Vietnam, English is a compulsory subject in the curriculum, and it is taught for 3rd, 4th and 5th grade students to equip the students with some basic knowledge to communicate and complete basic tasks in the textbooks. After a five-year period of teaching English at the school, the teacher identified a problem that the students felt difficult to memorize and recall English vocabulary items including their pronunciation, their spelling and especially their meaning. It is clear that they could not communicate and practice writing tasks well because they lack the words they need. In fact, there are many vocabulary learning techniques such as matching, role play, dictionary use…introduced to students to improve their English vocabulary by the teachers, however, how to improve vocabulary is still a big problem which needs solving.

With the purpose of helping the students to be more successful in memorizing English vocabulary and to motivate them to learn new words, the study with the title "**The use of mind-mapping technique towards students' English vocabulary retention at a primary school**" in Vietnam was conducted. The research focuses on using mind maps to improve vocabulary retention of the 4th grade students at Doi Can primary school and to motivate them in learning English vocabulary.In order to achieve the aim stated, the following research questions are formulated:
1. To what extent does mind mapping strategy affect students' vocabulary retention?
2. What are the students' attitudes towards mind-mapping techniques?

2. LITERATURE REVIEW
2.1. Definition of Vocabulary

According to Cambridge Advanced Learner's Dictionary Online, vocabulary is defined as all the words known and used by a particular person, and all the words which exist in a particular language or subject. Ur (1996) characterized vocabulary as the words we teach in the foreign language. She also stated that a new item of vocabulary may be more than a single word: a compound of two or three words or multi-word idioms. In addition, Read (2001) viewed words as the basic building blocks of language, the units of meaning from which the larger structures such as sentences, paragraphs and whole texts are formed (p.1).

The Use of Mind-Mapping Technique towards Students' English Vocabulary Retention at a Primary School

Vocabulary retention is an essential factor affecting the success of vocabulary acquisition. It can be understood as the fact of keeping information in one's memory or is the power or capacity of holding and absorbing a certain number of words in their memory. Vocabulary retention can refer to short-term memory and long-term memory (Budd, 2003).

In short, there are numerous ways to understand the concept of "vocabulary". However, from the definitions above, it can be concluded that vocabulary is a list of words or a set of words in a language and knowledge of words regarding its forms and meanings. In the present study, vocabulary refers to the words, compounds and phrases in a language that have meanings used to convey and receive information in oral and written communication.

2.2. Definition of mind maps

"Mind-mapping" or "Mind map" was developed by the British psychologist. Tony Buzan in the late 1960s in an attempt to help students take notes effectively. Mind map, according to Buzan (2006), is a technique of making an outline which used the represent words, ideas, tasks, or another linked to an arranged radically around a central key word or idea by lines and typically it contains words, ideas, short phrases or pictures. Furthermore, Marton and Booth (1997) state that Mind map is a tool for enhancing learning and thinking. It provides a structure to reveal various aspects of a story such as the sequence of events, the key points, the cause and effect, the relation of ideas and so on. Students can use mind maps for revising and clarifying thoughts so as to get the deep meaning of a story. Additionally, Murley (2007) affirms that mind maps are a nonlinear visual outline of complex information that can aid creativity, organization, productivity, and memory.

All in all, it is clear that mind map is an effective method used to generate ideas, take notes, organize thinking, and develop concepts. It is a graphic organizer in which the major categories radiate from a central idea and the sub-categories are represented as branches of larger branches (Murley, 2007). In other words, it is a tool for language teaching that helps the teacher introduce or bring together multiple words that are linked to one subject or theme. (Budd, 2003; Murley, 2007; AlJarf, 2011).

3. METHODOLOGY

3.1. Context of the study

The study was conducted at Doi Can Primary School which is situated in the center of Hanoi city. With a long period of construction and development, the school has gained many achievements for education and training.

Currently, there are more than 2000 students and 70 teachers in Doi Primary School. English is taught here as a compulsory subject in the curriculum by 4 teachers aged from 30 to 40. The textbook consists of twenty units for two terms. The course book is designed in themes with familiar topics to children. Each theme includes five topics, a review and a short story. Learning activities in each topic are organized into three lessons for four skills (listening, speaking, reading, and writing) and basic language knowledge (phonics, vocabulary, grammar). Learning activities are suitable with young learners' characteristics, with Vietnamese culture as well as international one. The total number of students selected would do vocabulary tests named pre-test and post-test. And then, two survey questionnaires were conducted to get more opinions from students about the treatment before and after the technique was applied.

3.2. Participants

The participants of this study are 40 students in class 4B at Doi Can Primary School in Hanoi city, consisting of 22 females and 18 males. The students are ten years old. They are all from the city center and have learnt English for at least one year. Many of them have opportunities to learn English and talk to foreigners at some English centers. However, the teacher-researcher found that her students' vocabulary memory was quite poor and their vocabulary strategies seemed to be ineffective. Therefore, the researcher chose them to become volunteer participants in the action research project.

3.3. Instruments

This study used questionnaires as the main instrument and tests as the confirmation of the result for the data collection. Questionnaire 1 is aimed to identify the actual situation of the students' learning vocabulary and find out the attitudes of the students towards the teacher's vocabulary teaching strategies before treatment. Questionnaire 2 was given at post-action stage to evaluate the learners' attitudes towards the effects of mind-mapping on learning vocabulary.

In the study, the teacher designed a pre-test and a post-test to measure the vocabulary retention of students before and after applying mind-mapping in teaching vocabulary. In the both tests, students were asked to answer 20 questions to check their vocabulary.

3.4. Data collection and analysis

The study was conducted over a period of 10 weeks. First of all, the students were asked to fill in the first questionnaire in Week 1-2 to identify the actual situation of students' vocabulary learning before the mind mapping was applied. They also took the pretest during this period of time to check the memory of vocabulary items learnt in the previous units. Then, mind mapping was introduced in the lesson. The teacher presented the students how to create or read a mind-mapping diagram in order that the students could be familiar to the technique. In each lesson, the teacher created mind-mapping diagrams used to introduce and

revise vocabulary items with the topics of each unit (16, 17, 18, and 19) of English 4 textbook. To make sure that every student could observe clearly the diagrams, the teacher showed some mind -mapping diagrams in the big size.

In Week 10, students took the posttest to check whether their retention towards learned vocabulary was improved or not after intervention and they were also asked to fill in the second questionnaire to show opinions about this new technique. Finally, the data was collected to analyze and discuss before conclusions, implications and suggestions were made.

Regarding data analysis, two sets of questionnaires and both pre-test and post-test scores were computed quantitatively through SPSS by percentage.

4. RESULTS
4.1. Results of Questionnaires
4.1.1. Results of Questionnaire 1
Table 1 shows the results of Questionnaire 1 which was asked about the importance of learning vocabulary and teacher's vocabulary teaching strategies in the classroom.

Table 1. Result of Questionnaire 1

Questions	Disagree		Neutral		Agree	
	N	%	N	%		%
1. Learning vocabulary is very important.	5	12	10	25	25	63
2. You can remember vocabulary well.	26	65	4	10	10	25
3. English vocabulary in grade 4 is easy.	25	63	5	12	10	25
4. You feel eager to learn English vocabulary in the class.	24	60	8	20	8	20
5. The teacher's vocabulary teaching strategies are various.	27	68	6	15	7	17
6. The teacher's vocabulary teaching strategies are effective.	25	63	5	12	10	25

As can be shown from Table 1, Question 1 revealed the attitude of students towards the importance of learning vocabulary. It can be clearly seen that 63% (25 students) of the students agreed that it was important to learn vocabulary; 25% (10 students) which held a neutral view believed that it was neither important nor unimportant, whereas only 12% (5 students) showed a disagreement with the importance of learning vocabulary. This data reflected that almost all students were aware of the significance of learning vocabulary in foreign language learning.

When being asked about the ability to remember vocabulary in Question 2, 10 out of 40 students (25 %) agreed to have a good memory, which contrasted to the number of students who admitted that they could not remember vocabulary well with 65% (26 students). The ones expressed neutrally took up a small portion with only 10% (4 students) in total.

Question 3 reflected students' opinion whether English vocabulary in grade 4 easy or not. More than half of the students (63%) disagreed, one fourth (25%) agreed and the rest (12%) were neutral.

Question 4 was designed to collect the students' attitude whether they felt eager during the vocabulary lessons or not. Over 60% admitted that vocabulary lessons were boring, while groups with neutral and agreement views shared the same percentage 20%.

Question 5 and 6 illustrated a negative view. Up to 68 % of the students responded that the vocabulary teaching strategies from the teacher were not effective and various. No more than 15% considered the strategies normal and the number of those who expressed the optimistic attitude on the technique could be up to only 25 %. From this figure, it was recommended that vocabulary teaching methods should be changed to motivate students during the lesson.

4.1.2. Results of Questionnaire 2
The result of Questionnaire 2 which was given to capture the attitude from the participants on the effect of mind map was shown clearly in Table 2.

Table 2. Result of Questionnaire 2

Questions	Disagree		Neutral		Agree	
	N	%	N	%	N	%
1. MM helps you remember vocabulary better and longer.	5	12	8	20	27	68
2. MM makes the classroom atmosphere more exciting.	4	10	6	15	30	75
3.You are interested in using MM to learn vocabulary.	3	8	5	12	32	80
4. MM is easy to apply.	4	10	10	25	26	65
5. MM should be used to teach vocabulary in next units.	2	5	4	10	34	85

The Use of Mind-Mapping Technique towards Students' English Vocabulary Retention at a Primary School

In Table 2, Question 1 asked students to self-assess their ability to retain vocabulary after action research. More than two third of students (68%) agreed that mind mapping technique helped them remember the meaning of the new words longer and more easily while the rest who disagreed and had no idea contributed for 12 % and 20% respectively.

The responses regarding Question 2 showed a positive attitude. A large percentage of participants thought that using MM in the classroom made the learning environment more exciting, accounting for 75%. Only a small number of respondents had a negative attitude, making up 10% (4 students) and those were neutral with 15% (6 students). It could be referred that the use of mind-mapping during the classes probably had a significant role in keeping the students engaged and motivated to the lessons.

Question 3 showed the interest of the students in MM to learn vocabulary. After the treatment, it was recognizable that students' attitudes towards MM were mostly positive. The majority of students found learning vocabulary with MM interesting (80%) compared to the proportions of 13% of those expressed neutral views and 7% of the total admitted that they were not fond of it.

When being asked about the opinion about MM in Question 4, more than half students (65%) thought that they found it easy to use MM to learn vocabulary and only 4 students (10%) considered MM to be hard and the rest with no idea contributed to 25%.

Question 5 collected the students' attitude regarding to use MM during the vocabulary lesson in next units and got an optimistic result. 34 out of 40 participants (85%) hoped that MM should be used in the next lessons to teach vocabulary while only 2 (5%) of them had no intention to do it.

To sum up, the data illustrated that most of the students in the research had positive attitude toward using MM in learning English vocabulary. This might help students to increase their vocabulary intention and to achieve a better result in the post-test as well.

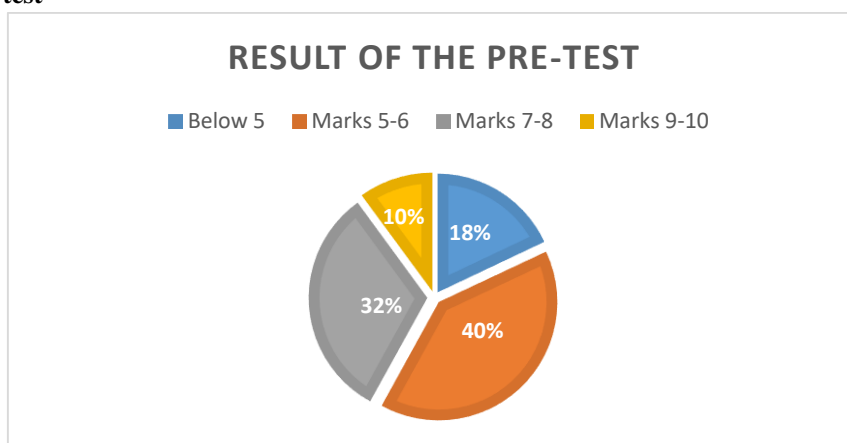### 4.2. Results of the Tests
4.2.1. Result of the pre-test

Figure 1. Result of the pre-test

As could be clearly observed from Figure 1, nearly one fifth (18%) of the students got bad scores (below 5) and those who achieved mark 5-6 made up 40%. Whereas the number of students got scores from 7 to 8 contributed to 32% and there was only 10 % for very good marks which ranged from 9-10. It could be concluded that their ability of remembering vocabulary was not good when there was no MM technique used in teaching vocabulary.
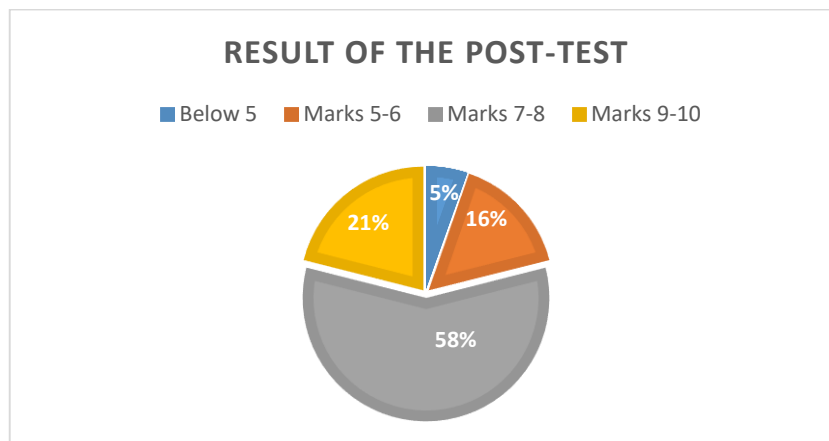
4.2.2. Result of the post-test

Figure 2. Result of the post-test

The Use of Mind-Mapping Technique towards Students' English Vocabulary Retention at a Primary School

Figure 2 shows that after four units of applying mind-mapping technique, 40 students were given a test under the teacher's supervision to get the data results. Overall, the chart illustrated a positive change in the score of students in the post test. The percentage of students who got bad marks (below 5) fell considerably from 18 % to 5% while ones with very good scores (9-10) increased more than double by 25 %. There was a remarkable drop in the number of students with average scores (5-6) to 15%. Students who got quite good marks (7-8) reflected a boost accounted for more than a half (55%) in the post test. In general, it was noticeable that students enhanced their vocabulary retention after using mind mapping technique in learning.

4.2.3. Comparison between results of pre-test and post-test scores
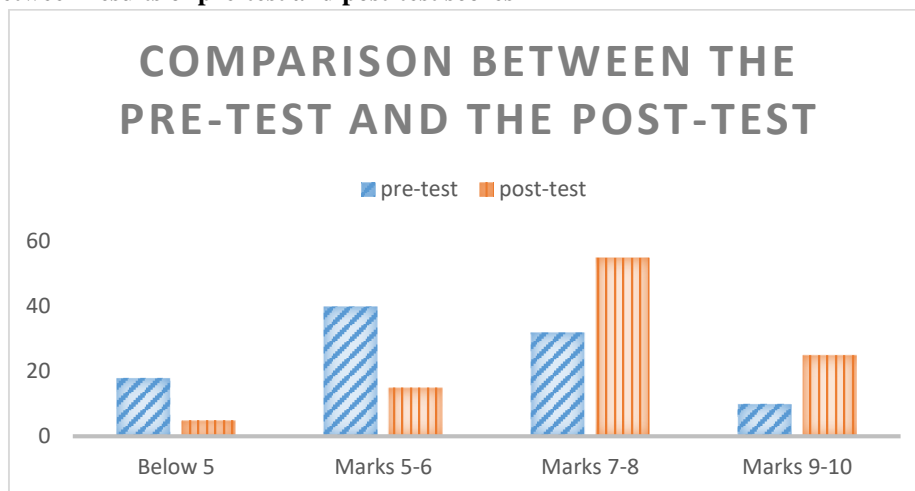

Figure 3. Comparison between results of pre-test and post-test scores

From the chart, it could be clearly seen that there was a significant difference of score between the pre-test and the post-test. After five weeks of using mind maps in the lesson, the number of students who got quite good and very good marks increased remarkably from 32% to 55% and from 10% to 25% respectively. This change indicated that they made considerable progress in their vocabulary intention after the treatment.

In short, both the results of questionnaire 2 and vocabulary test showed an evidence that students held a positive attitude towards the technique and had certain improvement in vocabulary retention after 10 weeks of mind-mapping application.

5. CONCLUSION AND DISCUSSION

The findings of the study showed that the learners had a quite positive attitude towards MM and made considerable impacts on improving their vocabulary retention.

The findings from the two sets of questionnaires and test scores showed that there was positive attitude of students towards learning vocabulary under the impact of MM technique. Apart from the sharing that learning with mind-mapping helped them easy to memorize and retain vocabulary longer, they added the classroom atmosphere when applying mind-mapping was exciting and it was likely that mind mapping motivated them to learn vocabulary, brought more joys to the learning atmosphere. Therefore, the majority of them expressed a desire to keep studying English vocabulary through MM in the future. This result was in line with Nguyen (2016) at a point that participants expressed the positive attitudes towards the application of mind-mapping technique although both studies shared the different kinds of learners in language teaching and learning. In the same way, Luu (2013) showed the positive behavior of participants to the technique in which reflected their excitement because vocabulary lessons were like a game with the use of mind maps (Hawrani, 2011).

In the same token, results from both pre-test and post-test scores showed that there was a significant difference of score between the pre-test and the post-test. After five weeks of using mind maps in the lesson, the number of students who got quite good and very good marks increased remarkably from 32% to 55% and from 10% to 25% respectively. This change indicated that they made considerable progress in their vocabulary intention after the treatment. This finding was similar to the results of a number of the previous studies mentioned the Literature Review such as Ita Kurniawati, Samhudi (2015), Dang, T. D. (2011). Luu, V. H. (2013)

All in all, it could be concluded that the positive sharing of students towards this technique may also resulted from the fact that mind maps had a number of benefits. Mind-mapping technique was considered to be easy to apply and it made learning vocabulary more enjoyable. Therefore, students tended to be more attentive in the vocabulary lessons, which demonstrated the fact that mind-mapping was an effective technique to enhance the students' motivation during the process of teaching and learning English vocabulary.

REFERENCES
1) Al-Jarf, R. (2011). Teaching spelling skills with mind-mapping software. Asian EFL Journal Professional Teaching Articles, 53(4).
2) Budd, J. W. (2003). Mind maps as classroom exercises. Minnesota: University of Minnesota.
3) Booth, S. (1997). On phenomenography, learning and teaching. Higher education research & development, 16(2), 135-158.
4) Buzan, T. (1993). The mind map book. London: BBC Books.
5) Cambridge Advanced Learner's Dictionary. Third edition. Cambridge University Press.
6) Cohen, L. and Manion, L. 1985. Research Methods in Education, 2nd edn, London: Croom Helm.
7) Cohen, L., Manion, L., & Morrison, K. (2017). Validity and reliability. In Research methods in education (pp. 245-284). Routledge.
8) Dang, T. D. (2011). Using mind maps and diagrams to teach vocabulary for first year mainstream students, Faculty of English Language Teacher Education. Graduation paper. University of Languages and International Studies, National University, Hanoi
9) Hawrani, H. S. S. (2011). The Impact of Using the mind map strategy on the ninth grade student's achievement in Science and their attitudes toward Science in the Governmental Schools in Qalqilya (Doctoral dissertation). Hofland, C. (2007). Mind-mapping in the EFL classroom. Fontys Hogescholen: Fontys Teacher Training College Sittard.
10) Kurniawati, I. (2011). Improving students' vocabulary mastery through mind-mapping strategy (A Classroom Action Research at the Second Year of SMP Negeri 2Polanharjo, Klaten in the Academic Year of 2010/2011) (Doctoral dissertation, Iain Salatiga).
11) Liu, Y., Zhao, G., & Bo, Y. (2014). The effect of mind mapping on teaching and learning: a meta-analysis. Standard Journal of Education and Essay, 2(1), 17-3.
12) Luu, V. H. (2013). Using mind mapping to help students at Thanh Hoa College of Agriculture and Forestry recycle vocabulary. MA Thesis Linguistics: 60 14 10 (Doctoral dissertation, University of Languages and International Studies).
13) Marton, F., & Booth, S. (1997). Learning and awareness. Mahwah, NJ, Mahwah, NJ: L. Journal Article.
14) MrCarthey, M. (1990). Vocabulary. Oxford University Press.
15) Murley, Diane. (2007). Mind Mapping Complex Information. Law Library Journal, Vol. 99, pp. 175-183
16) Nation, I. (1990). Teaching and Learning Vocabulary. New York: Newbury House.
17) Nguyen, T. L. (2016). Using mind-mapping technique to improve vocabulary retention of first-year students: An action research project at Military Technical Academy (Doctoral dissertation, University of Languages and International Studies).
18) Richards, J.C.; Renandya, W.A. (2002). Methodology in Language Teaching: An Anthology of Current Practice. New York: Cambridge University Press.
19) Read, J. (2000). Assessing vocabulary. Cambridge: Cambridge University Press.
20) Salkind, N. J. (2003). Exploring Research (5th ed.). New Jersey: Prentice Hall.
21) Schmitt, N. (2000). Vocabulary in language teaching. Cambridge: Cambridge University Press.
22) Ur, P. (1996). A course in language teaching, Cambridge University Press, Cambridge.
23) Wilkins, D. (1972). Linguistics in language teaching. London, UK: Edward Arnold.