Survey results on the effectiveness of using mind maps to improve students' vocabulary learning

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Abstact: *Using mind mapping to teach English vocabulary can enhance students' vocabulary memory and application, making learning more interesting and effective, and improving students' self-learning abilities**.** The purpose of the study is to examine the use of mind-map based lessons in teaching English vocabulary to non-English major students at Hanoi Architecture University.*

Keywords: *Mind mapping, English vocabulary, non-English major students at Hanoi Architecture University*

1. Introduction

The purpose of the study is to examine the use of mind-map based lessons in teaching English vocabulary to non-English major students at Hanoi Architecture University. "A mind map", according to Cambridge Advanced learner's Dictionary, is like a diagram with lines and circles for organizing information so that it is easier to use or remember". As noted by Tony Buzan (1984), a Mind Map is a Key Memory Image that summarizes the central theme of the note one is making and from the central theme one can have a series of connecting lines on which are written or drawn the Key Image Words of sub-areas and sub-themes the person wishes to note and remember. Buzan further pointed out that the mind map is a strong visual method that allows the potential ability of the learners' brain to be released freely, and thus makes it possible for people's acquisition. With the belief that mind-map can facilitate students' memory, give them fun in classroom and develop their general learning skills, the researcher decided to apply this technique in teaching English vocabulary to students.

2. Research content

2.1. Overview of survey techniques

1) Research questions

The objectives of the study involve measuring the impact of the use of mind-map based lesso ns on students' improvement in learning English vocabulary and the students' attitudes towards the application as well. Therefore, the study will seek the answers to the following research questions: 1) How do the students usually learn English vocabulary? 2) Does the use of mind-mapping help the students improve their English vocabulary learning, if so, to what extent? 3) What are the students' attitudes towards using mind-mapping in the teaching and learning of English vocabulary?

2) Kinds of data:

Data for this study is a combination of both first-order and second-order data. The first research question is concerned with "students' activities", and the second question seeks information about the "impact" of "the use of mind-mapping" on "students' vocabulary learning", so the data needed are first-order data. Regarding the third question, "students' attitudes" are targeted; hence, the kind of data to be collected is second-order data.

3) Sources of data

The sources of data for this study include 87 students at pre-intermediate level at Hanoi Architecture University. They are non-English majors in their second semester at university. They are from three different classes that are taught by the researcher. There are 19 females and 68 males, aged 18 – 23. The course book that is currently used is New Headway Pre-intermediate the Third Edition. In addition, two or three teachers from the same university will also be invited to observe the class. Those teachers have at least 5 year experience in teaching English at this university.

4) Data collection techniques

The study will make use of three techniques: informal interview, pre-test and post-test, students' questionnaires and colleagues' classroom observation. Before each technique is discussed, the summary of the kinds of data, sources of data, and collections techniques is illustrated in the following diagram (Note: kinds of data are in bold and techniques are in italics)
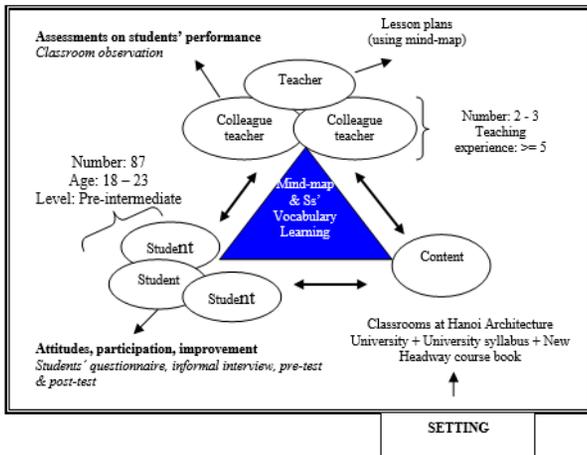
(The diagram is adapted from Freeman (1998:77))

5) Pre-test and Post-test

The two tests will be designed with the focus on testing the students' range of vocabulary before and after the adaptation. These tests' content must be relevant to what the students have learned in earlier lessons. Specifically, these tests are to test students on these matters: a) The meaning in context; b)The use Collocation; c)The part of speech; d) Synonyms/ Antonyms

And the question types of the test will be in the form of: 1) Multiple choice questions (MCQ); 2) Matching; 3) Wh-structured questions

Pre-tests are conducted at the beginning while Post-tests are to be administered after one month of using mind map. This is supposed to show how the adaptation works. In other words, this data will report to what extent the use of mind-mapping facilitates students' vocabulary learning.

6) Students' questionnaires

The questionnaire comprises of two main questions – the first one is "choose the top three options" and the second one makes use of Likert scale (1-5). The questionnaire seeks information about the students' ways of learning vocabulary and their perceptions of how effective these ways are, compared with the teacher's adaptation of mind maps, and thus their responses to the use of mind maps in lessons are clearer and more reliable. These responses, therefore, help determine their attitudes towards the teacher's new method. The two questions are illustrated below:

Question 1: Tick the three ways that you most frequently use to learn vocabulary (before the use of mind maps in your English lessons)

1. List the words your teacher writes on the board
2. List the words you find interesting and useful during your lessons

3. List all the new words in the textbook that you do not know
4. Memorize the words by copying them down many times
5. Put the words into groups to memorize them
6. Associate new words with words you have already know
7. Learn vocabulary by reading dictionary
8. Take a handbook of new words with you and learn whenever you can.
9. Use mind maps to learn vocabulary.

Question 2: Express your opinion on teacher's use of mind map to help you learn vocabulary by crossing (x) the box of your choice.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

	1	2	3	4	5
1. Mind mapping is effective in vocabulary learning					
2. Lessons with mind maps are fun.					
3. Mind maps bring me more chance to use my vocabulary.					
4. Mind maps are useful in helping me memorize words.					
5. We can learn vocabulary without mind maps.					

7) Informal interview

Informal interviews are to be done during the breaks, outside the classrooms, or after school. These interviews in the form of friendly conversations are conducted before and during the research time. This method is used because the answers can be found directly and it does not take much time. At the same time the data collected from this technique can be used as a good means of triangulation for the other techniques, especially the students' questionnaire. Besides focusing on students' improvement, this research is to find out how students respond to the teacher's application of mind-map in their English lessons. Some possible questions to interview students include: a) How big do you think your vocabulary size is? b) How do you often learn vocabulary? c) How do you think of learning English vocabulary? d) Have you ever tried different ways to learn new words?; e) What do you think about the teacher' new ways of helping you learn vocabulary? f) Which do you prefer, the usual method or the new one?

8) Colleagues' classroom observation

About two or three other teachers are to be invited to observe four of the lessons. They are asked to list down all activities on the observation sheets given by the researcher and take notes of students' responses during the learning and teaching process. These

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observation sheets are to be collected and the data can be used to find answer to the third research question – *What is the student's attitude towards teacher's use of mind mapping?* Following is the sample of the observation sheet to be used:

OBSERVATION SHEET

Teacher: _____ Lesson: _____ Date: _____

Class: _____ Size of the class: _____

Would you please write down activities that happen during the lessons?

Teacher's activities	Students' activities	Comments on Ss' participation

9) Procedures: The study will take around 2.5 months to complete, and the procedure for it consists of the following steps: 1) Select the subjects (87 students), prepare the collection instruments (tests, questionnaires, interview questions and observation sheet); 2) Have three classes selected do the pre-tests, mark and analyze the results; 3) Design the lesson plans using mind-map and apply to the three classes for four consecutive weeks; 4) Interview students (informally) during the month of application; 5) Administer the Post-test to the three classes a month after the application, mark and analyze the results. Compare the results of Pre-test and Post-test; 6) Deliver the questionnaires to students, collect their answers and analyze

10) First-cut analysis: The first-cut analysis for this study will involve the following strategies: 1) Read through the data from all sources: students' marks from pre-tests and post-tests, students' survey responses, interview notes, and colleagues' observation notes; 2) Use "paired sample t" test to find the difference between the pre-test and post-test results. The results will be processed via SPSS;3) Count the instances in students' responses to the first question in the questionnaire ("choose the top three options); 4) Calculate the mean points for students' responses to the second question in the questionnaire; 5) Note down and group students' answers to interview questions; 6) Note down and group colleagues' comments on the observation sheet on students' participation.

2.2. Survey results: After the research process, the above 3 questions were answered as follows:

1) How do the students usually learn English vocabulary?

Categories	Pre-test (No: 87 students)		Post-test (No: 87 students)	
	Number of students	Percentage %	Number of students	Percentage %
Weak students (mark <5)	9	10.3 %	0	0%
Average students (mark 5-6)	71	81.6%	13	15%
Good students (mark 7-8)	7	8.1%	52	59.7%
Exellent students (mark 9-10)	0	0%	22	25.3 %
Total	87	100%	87	100%

The results in the table above show that students often learn English vocabulary in their own way without using mind maps. Therefore, after applying mind maps, students' mark increased quite well. There were no more students below average, the average mark decreased, the good mark increased, and many students achieved excellent mark.

2) Does the use of mind-mapping help the students improve their English vocabulary learning, if so, to what extent?

The results in the table above show that using mind maps has significantly improved students' vocabulary learning at a good level. Before applying mind maps, the below average score was 10.3%, the average score was 81.6%, the good score was 8.1%, and the excellent score was 0%. After applying mind maps, the scores were 0%, 15%, 59.7%, and 25.3%, respectively. This shows that applying mind maps in learning vocabulary is very effective.

3) What are the students' attitudes towards using mind-mapping in the teaching and learning of English vocabulary?

Most students (96.5% of students) said that mind maps were easy to understand, they enjoyed mind maps and said they would continue to use mind maps in their vocabulary learning. Only 3.5% (3 students) felt that mind maps were normal for them and they would incorporate mind maps and their own learning

3. Conclusion

Based on the framework provided by Freeman (1998), the proposal is very likely to have followed a good procedure of developing a research plan. The researcher hopes that the proposal will be approved and students will have chances to benefit from the application of mind-map in the learning and teaching of English vocabulary.

References

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