THE EFFECT OF MIND MAPPING TECHNIQUES ON THE VOCABULARY MASTERY OF SECOND GRADE STUDENTS OF ELEMENTARY SCHOOL

Elizabeth Kusuma [8]

Abstract

   In this study, the writer used a quasi-experimental non-equivalent-groups pre-test-post-test design. The subjects of this study were the second grade students of Elementary School. The writer used two classes as the sample of this experiment. The experimental group was taught using mind mapping and another was taught using word list. Before that, the writer gave a pre-test, and after the experiment a post-test to both groups.

   From the calculation of the t-test, the writer found the t-observation of both groups. From the analysis of the pre-test, the writer found out that those two groups had equal ability in vocabulary mastery. From the post-test scores, the writer also found out that those two groups were not significantly different. The t-observation of the two groups was 1.26, while the t-table was 2.08. It means that the null hypothesis which says "there is no significant difference between the vocabulary mastery of the second grade students who were taught by using mind mapping technique and one of those taught by using word list technique" was accepted.

*Key word*s: *vocabulary mastery, schemata, mind-mapping, strategy.*

Background of the Study

   In learning English in Elementary school, students are expected to memorize lists of words that are called vocabularies.

   Vocabulary is one of the language components that supports the four language skills; listening, speaking, reading, and writing. Vocabulary is needed to achieve the target language. In order to communicate well in a foreign language, students should acquire an adequate number of words and should know how to use them accurately (Huyen, 2010). Vocabulary plays an important role because if learners do not have the adequate vocabulary for communication, mastering grammatical rules or pronunciation becomes pointless (Brown, 2004). In teaching vocabulary, teachers should vary the techniques used, as Lopez (1997) states today's language teacher must manipulate much more information in several different areas of knowledge.

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[8] Elizabeth Kusuma *adalah* Mahasiswa S2 MPBI Universitas Katolik Widya Mandala Surabaya.

There were many techniques EFL teachers could use to make the students interested in learning vocabulary. When there was a word which had been recognised as important in terms of its frequency of use of learners' needs, students might intentionally make efforts to retain it (Shen, 2003). Traditionally, vocabularies were taught using word list when words were highlighted and learned by giving the meaning. Vocabulary selection was based solely on the reading texts used, and words were taught even though bilingual word-list, dictionary study, and memorization(Richards, 2001).

Since second grade EFL students in general had difficulty in memorizing vocabulary, effective vocabulary mastery strategies, such as brainstorming, generating, and organizing words were needed. EFL teachers should use various strategies to teach vocabularies. In brief, mind mapping was the technique where the students were given the chance to develop their ideas and visualize them through images, colour, and word drawings. In the English lesson, the children noticed new words in patterns or images while they were creating mind mapping (Buzan, 1993). "We do not "teach" these words or patterns, we include them in activities and let the children notice them" (Paul, 2007).

Through this technique, the students would use their creativity to stimulate their right brain and left brain. In mind mapping, they were free to use their minds in different ways and to create things or create words mapping relate to their feelings and experiences(Hofland, 2007). Creativity was a great motivator because it made people interested in what they were doing.

Statement of the Problem

Based on the background of the study, the writer formulates the problem of the study as follows "Is there any significant difference between the second grade students who are taught using mind mapping and those who are not with regard to their vocabulary mastery achievement?"

Research Design

In this study, the writer used a quasi experimental nonequivalent groups, pretest-post test design as suggested by Mcmillan (2008). The choice of this design was based on the following considerations: (1) the study was conducted in a classroom setting in which the classes could not be reorganized to accomodate the investigator's study and it was not possible to assign subjects to group randomly, and (2) the investigator used two existing groups which had been divided previously, that was when the students entered the new level of elementary.

The research design which was used for this study can be illustrated in the table below (Mcmillan, 2008).

Table 3.1
The Research Design

Group	Pre-test	Treatment	Post-test
E	Y_1	X_1	Y_2
C	Y_1	X_2	Y_2

Where   a. E refers to the experimental group who was taught using mind mapping.
   b. C refers to the control group who was taught using word list.
   c. Y_1 refers to the pre-test
   d. X_1 refers to the mind mapping treatment
   e. Y_2 refers to the post-test
   f. X_2 refers to the word list treatment.

This design, which was often referred as a quasi-experimental design (some content that all experiments without random assignment are quasi-experimental) because it closely approximated the most desirable experimental designs, was commonly used in educational research. It was the same as the non-equivalent-groups post-test-only design, with the addition of a pre-test.

Population

The accessible population of the present study was the second grade students of Elementary from two classes. The researcher did not take the third grade students because the teacher of that level had her yearly plan herself. The researcher did not choose the four, or fifth grade since there was only one group for the fourth, and fifth. Moreover, she did not choose the sixth grade either since the students in that level were preparing for the National Examination.

The writer took IIA as the experimental group and class IIB as the control group. Each of both classes consisted of 22 students. The writer conducted this study to second grade of Elementary School students because the writer believed that they had known some vocabulary about occupations.

Table 3.2
The Population of the Study

No.	Class	Number of Student
1.	II. A	22
2.	II. B	22

Treatments

Each group got a different treatment. Class IIA, as the experimental group, received the mind mapping technique as the

treatment and class IIB, as the control group, got word list as the treatment. The similarities of both groups were that the students were asked to answer the question "What do you want to be when you grow up?" as a pre-activity and then they had to use the words in context as a post-activity. In addition, both groups were given the same words, same material, and time limitation during the treatment. The differences between those groups were the students in the experimental group recognized "mind mapping" and the roles in the groups. Whereas for the students in the control group, did not recognize "mind mapping" andno role or group applied in the treatment. Below are the treatments done in the experimental and control groups.

Data Analysis

The finding related to the major research question was obtained from the analysis by using t-test. The null hypothesis which says "There is no significant difference between the vocabulary mastery of the second grade students who were taught by using mind mapping technique and one of those taught by using word list technique", was accepted. The alternative hypothesis was not confirmed. Mind mapping technique did not influence the vocabulary mastery of the second grade of Elementary School.

The t-test of the pre-test scores of the two groups is presented in the table below:

Table 4.1
The Calculation of the Pre-Test Score

Groups	N	d.f	Mean (x)	SD	Variance	$t_{observed}$	t_{table}
Experimental	22	21	16.36	3.75	14.06	1.70	2.08
Control	22	21	18.27	3.71	13.76		

It was clearly indicated in the table that the mean of the Experimental group was 16.36 while the mean of the control group was 18.27. It was shown that t_{table} was 2.08, while $t_{observed}$ was only 1.70. Since 2.08 was greater than 1.70, the null hypothesis was accepted. The pre-test mean scores between the two groups were not significantly different.

Since both groups were of more or less the same level as proved statistically above, the last calculation was done to the post-test scores of the two groups. The post-test scores were analyzed statistically using t-test for significance of the difference between two means for independent samples. The summary of the t-test analysis of the data of the post-test scores is shown below:

Table 4.2
The Calculation of the Post-Test Score

Groups	N	d.f	Mean (x)	SD	Variance	$t_{observed}$	t_{table}
Experimental	22	21	21.95	2.18	4.75	0.38	2.08
Control	22	21	22.23	2.64	6.96		

From the table, it could be seen that the mean of the experimental group was 21.95, while the control group was 22.23. The $t_{observed}$ was 0.38, while the t_{table} was 2.08. Since 2.08 was greater than 0.38, the null hypothesis was accepted. The post-test mean scores between the two groups were not significantly different.

Findings

The finding related to the research questions was obtained from the analysis by using t-test. The null hypothesis which says "There is no significant difference between the vocabulary mastery of the second grade students who were taught by using mind mapping technique and one of those taught by using word list technique", was accepted. The mind mapping technique did not influence the listening achievement of the second grade of Elementary School.

Table 3.3
The Calculation of the Gain Score

Groups	N	d.f	Mean (x)	SD	Variance	$t_{observed}$	t_{table}	Note
Experimental	22	21	5.68	2.86	8.23	1.26	2.08	Significantly Rejected.
Control	22	21	4.41	3.82	14.63			

The results of the independent t-test revealed that there was no significant and meaningful difference between those who were taught using mind-mapping technique and those who were taught using wordlist technique. The magnitude of t-observed did not outstrip the t-critical value ($t_{observed}$=1.2534 >$t_{critical}$= 2.0796) at the 0.05 probability value.

Discussion

The research question of this study says "Is there any significant difference between the vocabulary mastery of the second grade students who were taught by using mind mapping technique and one of those taught by using word list technique?". The data analysis proved that there was no significant difference in students' vocabulary mastery between the students taught by using mind mapping technique and those taught by using word list technique. It showed that Mind Mapping technique did not improve the students' vocabulary mastery.

The findings indicate that mind-mapping strategy did not really help to teach vocabularies. The results of the post-test strongly indicated that mind mapping was not suitable for Elementary School students.

Furthermore, students who were taught using word list technique showed more improvement of words in vocabulary mastery. Meanwhile, mind-mapping technique seemed only giving the effect of fun in learning by drawing and colorful pictures and symbols.

Conclusion

Mind mapping is not suitable for Elementary School Students. In the data analysis, the null hypothesis was accepted. There was no significant difference in the vocabulary mastery between the students taught by using mind mapping technique and those taught by word list technique. It seemed that mind mapping technique did not help them improve their vocabulary mastery.

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