

THE USE OF MIND MAP IN MASTERING VOCABULARY THROUGH PICTURE AT THE SEVENTH GRADE OF SMP NEGERI 4 LIBURENG

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Abstract

The aims of this research is to find out whether or not mind map through picture can improves students' vocabulary mastery. To analyze the data, a pre-experimental descriptive quantitative design was employed. It involves seventh graders class in a school at Libureng in academic year 2010/2011 with number of students, 30 students (15 males and 15 females). In collecting the data, the present study used pre-test and post-test as the instrument then calculated them by using normality, validity, reliability, gain test and t-test. The findings show that the value of t-obtained was 11,82 and the value of t-table at significance level of 5% was 2,045 with the degree of freedom (df=29). The result of t-obtained (11,82) indicates that H_0 is rejected and consequently the H_1 is accepted. It means that the use of mind map method can improves students' vocabulary mastery. The students claim that this method offers interesting learning, challenge creativity, and serves new simple method to memorize some vocabularies. So, it is recommended for further researcher to conduct a research for other skills and other methods.

Keywords: Vocabulary, Mind Map, Picture

1. Background of the research

English is one of the foreign languages for Indonesian students. Ikah (2006:1) states that almost all countries have adapted English used as a compulsory subject at schools. The national education has decided that English as a foreign language taught in Indonesian school. It learned started from primary school up to university. English is considered as a difficult subject for the Indonesian students, because English is completely different from Indonesian language being look at from the system of structure, pronunciation and vocabulary. As the result, the government always made effort to improve the quality of English teaching. By improving the teachers' quality and other components involved in educational process, the English teaching in Indonesia improved time to time.

People realize that teaching English becomes very important and need much concern. As an English teacher, he or she demands to explore effective techniques, method, and approaches. Moreover, Nugroho (2007:3) said that in teaching a language, a teacher might realize that he or she could not apply only one or two strategies to all levels. In reverse, a teacher was required to be able to recognize the characters of his or her students and to select an appropriate strategy to them. It was not something different from teaching

English to Junior High School students, the teacher was supposed to know that children was so closed with something fun and enjoyable.

English teaching involves of four language skills, they are listening, speaking, reading, and writing. In teaching and learning a language, there are four aspects that support four language skill above such as: grammar, vocabulary, spelling, and pronunciation that are also taught in English teaching and learning process (Leny, 2006:1).

In learning English, one of the factors is the poor mastery of vocabulary knowledge. The students are lack of stock of the words. The students who have little knowledge of vocabulary will face some difficulties to understand the written language and oral language. The students may get some difficulties in learning a language if they have limited number of vocabularies. Saleh (1997:12) argues, "The success in mastering a language is determined by the size of the vocabulary one has learned." Thornbury (2002:23) adds "The learner needs not only to learn a lot of words, but to remember them." To master all the language skills, vocabulary knowledge are important that have to known by the students and the teachers of English should have a technique that makes the students interesting in learning vocabulary.

Furthermore, Nugroho (2007:4) state that one of the most important language components was vocabulary. The mastery of it would be very helpful when the student learning foreign language having a great mastery on it. It would also facilitate the students to comprehend the subject learnt in which it was in English. Ikah (2006:1) argue that vocabulary is one important aspect in learning a foreign language. With a limited vocabulary anyone will also has limited understanding in terms of speaking, reading, listening, and writing. Furthermore, H.G Tarigan state that the quality of language skill depends on the quantity and quality of vocabulary. The more vocabulary we have, the bigger possibility to have a skill to use the language (Ikah, 2006:2).

The same statement was argued by Huyen and Nga (2003:2) states that in learning a foreign language, vocabulary plays an important role. It is one element that links the four skills of language. In order to communicate well in a foreign language, students should acquire an adequate number of words and should know to use them accurately.

The student's ability in mastering vocabulary depend on teacher strategy or technique in teaching English vocabulary. Igbaria (2010:3) argue that teachers are very important factor in selecting and teaching English vocabulary, and they have to design vocabulary syllabi according to their learners' need. Moreover, Leny (2006:2) state that English teacher has to be able to organize teaching and learning activities, teachers have to give materials by using a suitable technique and master the lesson effectively. Especially in learning vocabulary, teachers must make the students able to memorize such words in English language and group of new words. The statements above means, vocabulary is important to teach and teachers must try to find the most effective way to teach it.

There are many problems of language teaching that can be identified as research subjects, such as methods, material selection, technique, and others. As the writer know, there are many Junior High School which still use traditional methods in teaching vocabulary. The teachers' just gives explanations, exercises and then end it with examination. This method is not effective because it makes the students became passive learner. There are many method of making the students interested in what they are learning especially in learning vocabulary. Setiyadi (2006:8) says "Method is the plan of language teaching which is consistent with the theories".

Memory sensory has important value in learning vocabulary. The students need balancing in usage of the left brain and right brain. Whole brain is needed by the students to think perfectly. Right brain is for creativity and visualization. Left brain is for logical and

rational. Mind mapping combines both and become whole-brained. It stimulates the brain by appealing to both the creative and logical side of the brain. According to DePotter and Hernacki (2008:15), "Mind mapping uses visuals reminder and sensory into a pattern from the ideas which are related". Mind mapping allows the students to clarify their thoughts by categorizing and grouping into related ideas. It starts with the students' main topic or the theme as the central idea and allows the main branches of mind mapping to represent the main points of their thought (right brain) then combined by the interesting colors and images (left brain) which will stimulate the brain. Thornbury (2002, 18) says, "Acquiring a vocabulary requires not only labeling but categorizing skills." The writer chooses mind mapping as a technique to help the students in memorizing the words which are expected in improving their vocabulary proficiency by memorizing easily.

Thornbury (2002:144) states that vocabulary cannot be taught, it can be presented, explained, included in all kind of activities and experienced in all manner of associations...but it is ultimately it is learned by the individual." Mind mapping is believed as one of the techniques or activities which can be used in teaching vocabulary which involve the essential idea and encourages memorizing vocabulary easily.

Farrand *et al.*, (2002:428) stated that Mind map method has the potential for an important improvement in efficacy. Buzan in 1993 argue that "Mind map is a form of an outline with ideas and pictures radiating out from a central concept" (Budd, 2003:2). Moreover, in Galeas' (2010:5) article said that the mind maps provided the students with the opportunity to be creative and is an effective tool in helping students relate to the picture in a proper sequence, aiding their memory through the association of words that relate to certain situations and incidents. Mind map also known to evoke students' memory. By developing a mind map, students are able to exploit the picture in depth and to reflect on various elements of the study. Another that, by giving students the opportunity to mind map individually, the teachers provide the students with a focal point for expanding the students language base, help to increase the students' vocabulary, excite and captivate the students' imaginations and motivate the students to read for more information. The same statement was argued by Deller and Price (2007:2) state that Mind map can be use to generate and organize vocabulary.

Reviewed at the explanation above, the researcher assumed that the use of mind map was one of good and effective ways to teach and to motivate the students to study English vocabulary. The use of media in teaching process is one important aspect besides the use of method. Supeniati (2008:2) said that media can be a powerful tool for meaningful learning. Moreover, she said that media as teaching aids are needed to help students' understanding and to increase the effectiveness in the communication between teacher and students in the teaching and learning process. Media is also used to stimulate the students' interest to the lesson. In this research, researcher interest to use picture as a media in teaching vocabulary. By providing picture as a media in teaching vocabulary to the students, the researcher hoped that it would make the students felt something pleasant and felt it different from what the students used to get in the other class activity. The use of picture would stimulate the students to be more active. Through picture presentation, people are able to reach outside their minds. Pictures that people can see always lead to the reality of people minds and that the use of picture can help to improve students' vocabulary and picture have great importance in the teaching process (Leny, 2006:21).

2. Method of the research

This research employed a pre-experimental method in pre-test, expose a treatment, and post-test design. The population of the research consists of the seventh grade students at Junior High School 4 Libureng in academic 2010/2011. The population consists of three classes, namely VIIA, VIIB, and VIIC. VIIA consists of 31 students, VIIB consists of 30 students, and VIIC consist of 30 students. In selecting the sample, the writer used proportionate simple random sampling. The sample of this research is seventh grade students and each class was taken 10 students (5 males and 5 females). Sample of this research consist of 30 students (15 males and 15 females).

2.1 Instrument of the research

In collecting data, the writer used a written test to know the students' ability in learning vocabulary. A test is a short examination of knowledge that consists of questions that must be answered. The writer gave the written test to measure the students' vocabulary in using mind mapping technique. The test was in the forms of multiple choice test with 20 test items and the students got 25 minutes to do the test.

2.2 Procedure of Collecting Data

In doing this research, the writer did some steps to do this research, they are as follows:

- **Pre test**
 1. The teacher gave explanation about the topic by using conventional method to the students.
 2. The teacher ask to the students to memorize some vocabularies which has correlation with the topic.
 3. The teacher gave to the students some questions in multiple choice test.
 4. The teacher gave 25 minutes to the students to done the test.
- **Treatment**
 1. Teacher introduced about the method, especially mind map method (what is mind map method and the procedure to make mind map)
 2. The teacher show slide a single picture by using projector in front of the class while distributed passage to the students who explain about the picture.
 3. Teacher distributed a work sheet to the students and asked them to start drawing mind map.
 4. After the students finish to drawing their mind map, four or five students present in front of the class and explain to their friends about their mind map work.
- **Post test**

The teacher gave to the students some questions in multiple choice test based on the topic that have been explained in treatment and they got 25 minutes to done the test.

2.3 Technique of Data Analysis

In this research, the researcher used five tests to analyze the data, there are normality, validity, reliability, gain, and t-test.

3. Finding and Discussion

A. Findings

1. Normality Test

1.1 Normality Test of Pre-Test and Post Test

Based on the result of analysis data by using normality test (Liliefors), the writer got that value of T max in pre-test was 0,77 with standard deviation (SD) was 2,82 and the value of L-table at significance level of 5% was 0,161 . This score (0,77) was higher than the critical value of L-table was 0,161. The result of T-max (0,77) indicates that the data normally distributed. While in the post-test, the writer got that value of T max in post-test was 0,86 with standard deviation (SD) was 2,7 and the value of L-table at significance level of 5% was 0,161 . This score (0,86) was higher than the critical value of L-table that was 0,161. The result of T-max (0,86) indicates that the data normally distributed.

2. Validity

Validity refers to the degree to which evidence supports any inferences a researcher makes based on the collected data using a particular instrument.

Table 3.1 Test Specification in Pre-Test

No	Objectives	Materials	Indicators	Test Items	Test Types
1.	The students are able to answer the question in the theme "Structure of a tree".	The words that involved in theme "Structure of a tree", such as flower, branch, leaf, twig, trunk, stem, seed, root, fruit, etc.	1. The students are able to complete the sentences by using the correct words about "Structure of a tree". 2. The students are able to match the pictures about "Structure of a tree" with the suitable words.	20	1) Multiple choices. 2) Matching test.

The test was valid because the content could measure the students' ability in vocabulary test. This can be seen from the writer's calculations (Appendix B) by using the formula of validity and the results showed that all of the number of questions in pre-

test indicate that the value of r_{xy} greater than r_{table} ($r_{xy} > r_{table}$), where r_{table} was 0,33. This proves that the instrument of question was valid.

3. Reliability

Reliability refers to the consistency of the scores obtained, how consistent they are for each individual from one administration of an instrument to another and from one set of items to another.

Table 3.2 The Students' Score and the Reliability Coefficient of the Test Items

No	Number of items	Number of students' correct answer (X)	Mean (Xrata2)	(X-Xrata2)	(X-Xrata2)^2
1	20	12	12.46	-0.46	0.21
2	20	11	12.46	-1.46	2.13
3	20	15	12.46	2.54	6.45
4	20	7	12.46	-5.46	29.81
5	20	13	12.46	0.54	0.29
6	20	11	12.46	-1.46	2.13
7	20	12	12.46	-0.46	0.21
8	20	9	12.46	-3.46	11.97
9	20	18	12.46	5.54	30.69
10	20	10	12.46	-2.46	6.05
11	20	8	12.46	-4.46	19.89
12	20	10	12.46	-2.46	6.05
13	20	12	12.46	-0.46	0.21
14	20	15	12.46	2.54	6.45
15	20	11	12.46	-1.46	2.13
16	20	16	12.46	3.54	12.53
17	20	11	12.46	-1.46	2.13
18	20	14	12.46	1.54	2.37
19	20	20	12.46	7.54	56.85
20	20	12	12.46	-0.46	0.21
21	20	11	12.46	-1.46	2.13
22	20	14	12.46	1.54	2.37
23	20	13	12.46	0.54	0.29
24	20	12	12.46	-0.46	0.21
25	20	14	12.46	1.54	2.37
26	20	17	12.46	4.54	20.61
27	20	14	12.46	1.54	2.37
28	20	11	12.46	-1.46	2.13

29	20	10	12.46	-2.46	6.05
30	20	11	12.46	-1.46	2.13
	Σ	374			239.47

Reliability Value:

$$\begin{aligned}
 KR-21 &= \frac{k}{k-1} \left[1 - \frac{\bar{X}(k - \bar{X})}{k(SD)^2} \right] \\
 &= \frac{20}{20-1} \left[1 - \frac{11,93(20 - 11,93)}{20(5,48)^2} \right] \\
 &= \frac{20}{19} \left[1 - \frac{11,93(8,07)}{20(30,05)} \right] \\
 &= 1,05 \left[1 - \frac{96,3}{601} \right] \\
 &= 1,05 (1-0,16) \\
 &= 1,05 (0,84) \\
 &= \mathbf{0,88}
 \end{aligned}$$

Based on the result of analysis data by using Kuder Richardson-21 above, the writer got that the mean score was 11,93 and standard deviation was 5,48 with number of students was 30 students, and value of reliability score was 0,88. By looking at the table of criteria of reliability, the value of reliability (0,88) were included in the high category ($0,70 \leq KR-21 < 0,90$). So it can be concluded that the instrument of this research are reliable.

4. Gain

Gain test is performed to determine the extent of increase in student learning outcomes between before and after learning.

Table 3.3 The Students' Gain Score

Number of respondent	Post-test	Pre-test	Gain
1	70	60	0.25
2	65	55	0.22
3	85	75	0.40
4	65	35	0.46

5	75	65	0.29
6	70	55	0.33
7	75	60	0.38
8	55	45	0.18
9	100	90	1.00
10	70	50	0.40
11	55	40	0.25
12	70	50	0.40
13	70	60	0.25
14	90	75	0.60
15	70	55	0.33
16	100	80	1.00
17	70	55	0.33
18	85	70	0.50
19	100	100	-
20	85	60	0.63
21	70	55	0.33
22	90	70	0.67
23	100	65	1.00
24	75	60	0.38
25	90	70	0.67
26	95	85	0.67
27	85	70	0.50
28	60	55	0.11
29	60	50	0.20
30	70	55	0.33
Total	2320	1870	5.48
		Xrata-rata	0.18
		%	81

Normalized Gain

$$g = \frac{\%g}{\%max}$$

$$= \frac{81}{100}$$

$$= 0,81$$

Based on the table above, it is known that the total value of individual gain is 5.48 with number of students were 30 people. Average gain' value was 0.18 and the percentage gain was 81% from the total percentage of the maximum was 100%. From the results of data analysis, showed that the normalized gain value was 0.81. By looking at the table of criteria of lesson effectiveness, the normalized gain (0.81) was included in the high category ($0.7 < g < 1$). So it can be concluded that the use of the Mind Map method was considered quite effective in learning.

5. T-test

T-test was used to find out whether hypothesis accepted or rejected and to find out whether there are correlation between variable X and Y.

5.1 The Students' Pre-Test Scores

The test items in the pre-test were exactly the same as the ones that were given in the post-test. The average pre-test score of the students was 62,33. It was found out that the lowest score was 35 reached by one student and the highest score was 100 reached by one student. The data distribution of the students' pre-test scores can be seen in table IV.4 below:

Table 3.4 The Students' Scores in Pre-Test

No	Students' Score (X)	Frequencies (f)	Percentages (%)
1	35	1	3.33
2	40	1	3.33
3	45	1	3.33
4	50	4	13.33
5	55	7	23.33
6	60	4	13.33
7	65	2	6.67
8	70	4	13.33
9	75	2	6.67
10	80	1	3.33
11	85	1	3.33
12	90	1	3.33
13	100	1	3.33
Total		30	100

5.2 The Students' Post-Test Scores

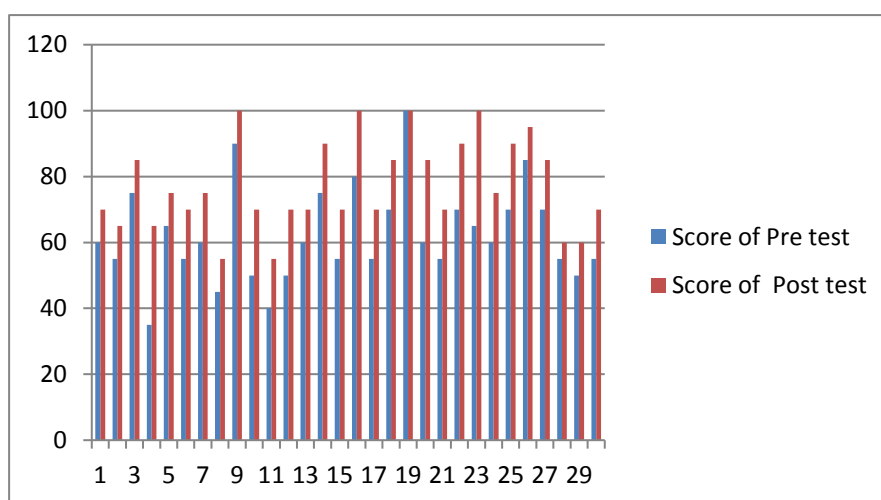
The average post-test score of the students was 77,33. It was found out that the lowest score was 55 reached by two students and the highest score was 100

reached by four students. The data distribution of the students' post-test scores in the control group can be seen in table IV.5 below:

Table 3.5 The Students' Scores in Post-Test

No	Students' Score (X)	Frequencies (f)	Percentages (%)
1	55	2	6.67
2	60	2	6.67
3	65	2	6.67
4	70	9	30.00
5	75	3	10.00
6	85	4	13.33
7	90	3	10.00
8	95	1	3.33
9	100	4	13.33
Total		30	100

Both of tables pretest' score and posttest' score above can be described in graphic form as follow:



Graph 1. Pretest' score and posttest' score

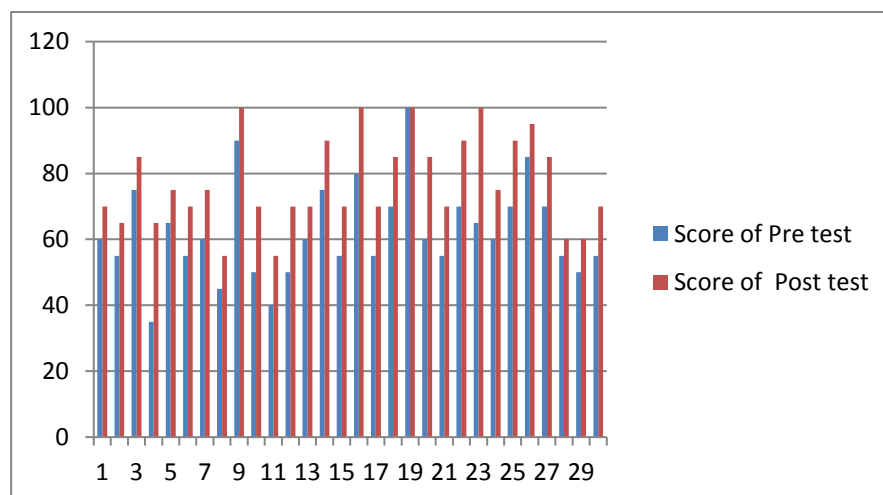
5.3 The Result of the Matched t-test Calculation

The average post-test score of the students was 77,33. It was found out that the lowest score was 55 reached by two students and the highest score was 100 reached by four students. The data distribution of the students' post-test scores in the control group can be seen in table 3.6 below:

Table 3.6 The Students' Scores in Post-Test

No	Students' Score (X)	Frequencies (f)	Percentages (%)
1	55	2	6.67
2	60	2	6.67
3	65	2	6.67
4	70	9	30.00
5	75	3	10.00
6	85	4	13.33
7	90	3	10.00
8	95	1	3.33
9	100	4	13.33
Total		30	100

Both of tables pretest' score and posttest' score above can be described in graphic form as follow:



Graph. 2 Pretest' score and Posttest' score

B. Discussion

Based on the finding in this study, the writer interprets that the use of mind mapping method was effective in teaching vocabulary to the seventh grade students of SMP Negeri 4 Libureng. It was assumed that the students' ability in learning vocabulary before being taught through mind mapping method was in the very poor level and after being taught through mind mapping method was in the enough level. After the treatment, the students' achievement in vocabulary improved. This condition means that teaching vocabulary through mind mapping method could improve their vocabulary mastery.

Furthermore, the result of the teaching showed that there was a difference achievement on the pre-test and post-test. The mean difference of two groups was $77,33 - 62,33 = 15$. The result of the calculation of the matched t-test formula was 11,829 and it is higher than the t-critical value (1,699). So, the treatment that was given to the students could influence their ability in vocabulary mastery from the very poor level to the enough level.

Besides, the t-obtained showed that the alternative hypothesis with 95% of significance level was accepted because the result of the calculation of the matched t-test formula was 11,829. It means that there was a significant difference between the students who were taught by using mind mapping method and those who were not. Finally, mind mapping can be used as one of the means in teaching vocabulary at SMP Negeri 4 Libureng.

4. Conclusion

Based on the analysis of the data gathered during this study, it can be concluded that there was a significant difference between the students' progress in the pre-test and post-test. The differences of scores in the pre-test and post-test were verified through the matched t-test.

The significant difference between the two groups can be seen from the t-obtained and its critical value. From the data analysis, the result of the calculation of the matched t-test formula was 11,829 and it was obvious that t-obtained (11,829) was greater than the t-critical value (1,699). It means that the writer can conclude that the alternative hypothesis (H_1) with 0.05 or 95% of significance level was accepted and consequently null hypothesis (H_0) was rejected. Furthermore, in other words, it was effective to teach vocabulary through mind mapping method to the seventh grade students of SMP Negeri 4 Libureng.

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