THE EFFECTIVENESS OF USING WORD MAPPING TECHNIQUE TO INCREASE STUDENT VOCABULARY

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Abstract

This study aims to investigate about the Effectiveness of Using Word Mapping Technique in Teaching Students Vocabulary at The First Grade Students of SMAN 8 Mataram in Academic Year 2014/2015. There were 79 students as sample. This study used quasi experimental non-equivalent research design. The data analysis showed the mean score of experimental group is higher than the mean score of control group. the use of word mapping technique is effective in teaching vocabulary. The deviation of the two mean scores (26.78/17.2) was also significant. It read that the value of t-test was 4.35 while the value of t-table was 2.000 on the level of significant 0.05 (95%) and 2.660 on the level significant 0.01 (99%). This figure indicated that the value of t-calculated was higher than t-value of t-table 4.35 > 2.000 and 2.660. The data indicated that t-test was higher than t-table, it means that the alternative hypothesis (H_a) is accepted. Word maps technique maintain the students learning about words through mapping because helps them examine the characteristics of the word concepts, categorize words, and see relationships among words that are similar as well as those that may be different.

Keywords : *Words Mapping, Vocabulary.*

INTRODUCTION

Vocabulary is an integral part of teaching learning. At the same time, students need a lot of vocabulary to convey and express their idea or to comprehend the reading text or while reading. Also, vocabulary takes a significant role in teaching and learning this point out related with Thornbury (2002) stated that "*Without grammar is very little can be conveyed but without vocabulary nothing can be conveyed*", so that, between reading, writing, listening and speaking the vocabulary being the main of the language component it because without the words the language could not be spoke.

In fact, learning vocabulary is not easy as simple as we think, one of the factors is the poor mastery of vocabulary knowledge, many students face there are many problem in learning vocabulary such as the students have limited of the words, the students have limited knowledge about vocabulary, so that they faced difficulties in understanding written and oral language. It is relevant as Dellar & Hickiing (2000) in Thornbury (2002). said "If you spend most of your time studying grammar, your English will not improve very much. You will see most improvement if you learn more words and expressions. You can say very little with grammar, but you can say almost anything with word (Thornbury, 2000).

Based on the problem in learning vocabulary above, the writer tries to offer an alternative strategy is word mapping technique.

Word mapping technique is a graphic rendering of a word meaning. Word mapping concept is a technique for representing knowledge in graphs. Knowledge graphs are networks of concepts. Networks consist of nodes (points/vertices) and links (arcs/edges). Nodes represent concepts and links represent the relations between concepts (Rohania, 2010).

In learning of vocabulary, concept mapping was developed in response to the perceived ineffectiveness at the time of teaching vocabulary based only on word definitions. In concept mapping, words are depicted graphically in relation to one another, helping students recognize connections between words, including synonyms and antonyms (Nicole Schmool, 2008). Furthermore, Reutzal and Cooter (2008) in Bauman (2004). suggest the use of word maps with English language learners for vocabulary instruction because it offers a way for them to demonstrate and connect their prior knowledge to new concepts and, at the same time, serves as a useful tool to categorize information. In addition, Students learn about words through mapping because it helps them examine the characteristics of the word concepts, categorize words, and see relationships among words that are similar as well as those that may be different (Bauman, 2004).

Based on explanation above, the writer decides to use a good and interesting strategy. It is called word map technique. Nugroho (2007) in Budiman (2014) said that "teaching strategy which deals with game and fun learning process where the teaching strategy will require creative ways in teaching vocabulary, it will make the class will not be passive and students will be stimulated to be more interested in learning English and it is expected the process of teaching and learning English will be well transferred to students".

In short, this thesis aimed at teaching students vocabulary through word mapping technique at the first year of SMAN 8 Mataram in Academic Year 2015/2016. So, the research question of this study is "the use of word mapping technique effective in teaching student's vocabulary at the first grade of students SMAN 8 Mataram in academic year 2014/2015 ?".

REVIEW OF RELATED LITERATURE

A number of studies have been conducted in line with this research. First, research   is done by Nia Rohania (2003) under title "Teaching Student's Vocabulary Through Mapping Word Technique at the Seventh Grade Students Of SMPN Mande Cianjur ". This study used experimental design of two group, The finding of this study was the teaching students' vocabulary through mapping words technique was proven to be more effective than non mapping words technique for improving the students' vocabulary mastery ".

The second study has been conducted by Ellamathi (2011) under title "The Effects of Using Semantic Map Strategy on Reading Comprehension for Lower Secondary Learners". The main aims of this study are to examine the effectiveness of semantic mapping strategy on reading comprehension for lower secondary learners. This study also aims to identify students' perception towards this technique. The design of this study was Qualitative and quantitative method to find out the effects of reading comprehension using semantic map, treatments

were conducted for two weeks consecutively, in which each treatment took two periods where each period was equivalent to approximately forty minutes. In the following week, directly after treatments, a Test 2 was administered to the respondents. Lastly, respondents were interviewed and reported. In this research, researcher used two methods in collecting data that were Test 1 and Test 2, and Interview. Descriptive statistic is used to simplify the presentation of data and organization. In short, the researcher found the results of this study show that implementation of the semantic map gives huge impact not only in students' scores but also from having greater awareness of reading comprehension strategy. All students agreed that this technique gives them self confidence to answer any reading comprehension. They stated that, this technique has instilled the confidence in their performance and now they acknowledged that they were able to answer challenging reading comprehension questions.

The third study has been conducted by Muhammad Hossen (2010) under title "The Effect of Semantic Mapping Strategy Instructions on Vocabulary Learning of Intermediate Students. This study aims to investigate the effect of semantic mapping strategy instruction on vocabulary learning of Iranian intermediate students. This is experimental study; the design of this study is an intact-factorial one: it is intact because there no true randomizations as the students were already placed in classes on the basis of some criteria; scores on placement test or successful completion of the prior course. In conclusion, the finding of this study was that teaching semantic mapping strategy has a significant effect on learning vocabulary. The results of this study also indicated that there is no interaction between gender and the effect of teaching semantic mapping strategy on vocabulary learning.

Role of Teaching Vocabulary through Words Mapping

The use of word maps with English language learners for vocabulary instruction because it offers a way for them to demonstrate and connect their prior knowledge to new concepts and, at the same time, serves as a useful tool to categorize information (Reutzel and Cooter, 2008) and also word maps successfully for vocabulary instruction with students in the elementary grades who were disabled readers (Sinatra, Stahl, and Berg, 1984).

So that, the purpose Word Mapping strategy is promote the students' deeper understanding of words through depicting varying relationships between and among words (Bauman, 2004) it is because to develop students' vocabularies, teachers need to promote in-depth word knowledge (Beck, McKeown & Kucan, 2002) and it is introduced as a collaborative effort between the teacher and the class (Sthal &Vancil, 1990). Moreover, Nation (2001) see an interaction between the teacher and the learners showed when using word map or semantic mapping strategy. Moreover, He stated that semantic mapping involves the teacher and learners working together to build up on the blackboard a visual framework of connections between ideas (Nation, 2001).

However, Johnson and Pearson (1984) generalized the word mapping or semantic mapping as a strategy of vocabulary instruction as followed:
1. Write a key word or topic related to classroom work on a sheet of paper, the blackboard, or a transparent slide.

2. Encourage the students to think of as many words as they can that are related to the selected key word or topic.
3. Guide the students to list the words by categories.
4. Have students label the categories.
5. Discuss the relationships between these words.

In addition, Ngunyen (2009) stated that word map or semantic mapping has been usually used for (1) general vocabulary development, (2) pre and post-reading, (3) teaching of a study skill, (4) a link between reading and writing instruction, and (5) an assessment technique.

METHOD

This research conducted based on the quasi Experimental method. It applied to the two group of pre test – post test design that is modified from the idea which suggested by Arikunto (2013). This quasi experimental method dealt with two group; experimental class and control group . The experimental class is the classes which are given the treatments by applying word mapping. And the control group did not give any treatment using words mapping method. The criteria whether word map tehnique can increase the students' vocabulary achievement by the differences between the scores of the pre-test and post-test. Population of the study were 286 students at the First Grade Students of SMAN 8 Mataram in Academic Year 2014/2015 and 76 students as sample both control and experimental group. This study used pre-test and post-test to as a way to collect the data. Before conducting the research, the researcher make the specification of material to cover the vocabulary subject. The specification covered in three themes subjects which consist of some nouns and some verbs that related with the topic of subjects. The data were analized by calculating the difference means by using *t-test*

FINDING AND DISCUSSION
Findings
In the process of analyzing the data, the writer firstly computed the deviation scores of pre-test and post-test of individual sample for each class, and then followed computation of mean scores of the sample of each class. The two mean scores were compared by employing the formula which previously asserted.

Table 02. The Deviation Scores of Pre-Test and Post-Test (Experimental)

No	Name	Pre-test	Post-test	(X)	(X^2)
1	Hendryan Silvianto	46.4	71.8	25.4	645.16
2	I Made Anreana	40.4	63.8	23.4	547.56
3	I Made Sulendra Yasa	40.4	53.6	13.2	174.24

4	Samsul Akbar	25.4	68.6	43.2	1866.24
5	M. Sya'bandi	20.2	68.8	48.6	2361.96
6	I Nengah Rama Carnata	55.6	66.2	10.6	112.36
7	M. Izatialgi Fari	30.6	60.2	29.6	876.16
8	Dewi Nurul Isnaeni	41.2	64.4	23.2	538.24
9	Suci Valentia Ranzani	51.4	66.4	15	225
10	Melly Julianti	33.8	64.4	30.6	936.36
11	Ricky Zulfiandy	43.2	66.4	23.2	538.24
12	Ditha Silfiany Pc	33.4	58.4	25	625
13	Emy Isnayani	37.4	61.8	24.4	595.36
14	Ergi Riandy Wirawan	36.2	48.4	12.2	148.84
15	Niluh Yuni Listiawati	41	63.8	22.8	519.84
16	Anggia Praba Putri	38.4	61.4	23	529
17	Qotrunnada Salikin	26	63.8	37.8	1428.84
18	Afrillia Ningsih	33.6	63.8	30.2	912.04
19	Arizal	36	61.2	25.2	635.04
20	Putu Ari Purnayanta	38.6	61.2	22.6	510.76
21	I Wayan Sudane	23.4	66.2	42.8	1831.84
22	Nendar Krisnadi	23.4	61.2	37.8	1428.84
23	Ni Ketut Sri Dani	25.8	61.2	35.4	1253.16
24	Muhammad Muhahar	20.6	61.2	40.6	1648.36
25	Maulana Wathoni	28	53.2	25.2	635.04

No	Name	Pre-test	Post-test	(X)	(X²)
26	Nur Vinna Haviz	48.8	66.4	17.6	309.76
27	Aulia Ul Hasanah	26	63.8	37.8	1428.84
28	Arezi Emmy Brilliant	31.2	63.8	32.6	1062.76
29	Huna Sapta Nurbani mz	28.6	63.8	35.2	1239.04
30	Nurul Annisa	43.6	61.4	17.8	316.84
31	Lili Anti	20.6	60.8	40.2	1616.04
32	Muvidah Lahmiwati	41.2	53.4	12.2	148.84
33	Yola Ardita	33.8	61.2	27.4	750.76
34	Mardiani Astuti	26	61.2	35.2	1239.04
35	Lazuardi Firdaus	28.4	66.2	37.8	1428.84
36	I Putu Aditya Arya Sena	55.4	60.2	4.8	23.04
37	Elsa Shafira	63.8	65.4	1.6	2.56
N=37	**TOTAL**			$\sum x=$ **991.2**	$\sum x^2=$ **31089.84**

Table 03. The Deviation Scores of Pre-Test and Post-Test (Control Class)

No	Name	Pre-test	Post-test	(Y)	(Y²)
1	Nurul Hikmah	25.8	53.6	27.8	772.84
2	Ahmad Jazidi	23	36	13	169
3	Yulia Agustina	28.2	43.8	15.6	243.36
4	Indra Adi Sumantara	20.6	38.4	17.8	316.84
5	Lia Afriani	25.6	43.8	18.2	331.24
6	Melani Nursafitri	30.8	49	18.2	331.24

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7	Jefri Mustiadi Wawan R	18	28	10	100
8	Ni Komang Ayu Triyani A	28.2	56.4	28.2	795.24
9	Dian Aprilita	25.6	46.2	20.6	424.36
10	Irawati	18.2	46.2	28	784
11	Satria Kurniawan	25.6	38.4	12.8	163.84
12	Itausniati	13	36.2	23.2	538.24
13	Vita Afrilia	18	36	18	324
14	Yulia Ismi	20.6	33.4	12.8	163.84
15	Rauhillah	25.6	41.2	15.6	243.36
16	Ni Kadek Wahyuni Lestari	18	31	13	169
17	Rani Fatmi Salsabila	20.6	41.2	20.6	424.36
18	Eka Sulistiana	18	36	18	324
19	I Komang Dwi Saputra	7.8	20.6	12.8	163.84
20	Loula Indarizka	15.4	56.4	41	1681
21	Istina Amalia	20.4	38.6	18.2	331.24
22	I Gede Sumantre	25.6	33.4	7.8	60.84
23	M. Odeng	25.6	33.6	8	64
24	Dimas Hadianto	30.8	48.8	18	324
25	Dewa Made Putra A. S	17.8	25.8	8	64
26	Astuti Handayani	20.6	31	10.4	108.16

27	Nanda Hikkal Wahyuni	18.2	38.6	20.4	416.16
28	Amelia Anwari P	25.6	38.4	12.8	163.84
29	Muniri	30.8	36	5.2	27.04
30	Ni Ketut Melly Diana P	31	48.8	17.8	316.84
31	Solihaeni	38.2	41.2	13	169
32	Dien Aura Sakinah	41.2	48.8	7.6	57.76
33	Alan Raka Siwi	18	43.4	25.4	645.16
34	Hendy Gusnandi	23	53.6	30.6	936.36
35	Lisa Ardiani	23.2	49	25.8	665.64
36	Samhari	28	35.8	7.8	60.84
37	Agus Adi Jaya Putra	13	38.6	25.6	655.36
38	Eva	18	33.4	15.4	237.16
39	Mahrip	23	30.8	7.8	60.84
N=39	**TOTAL**			**$\sum y=$ 670.8**	**$\sum y^2=$ 13827.84**

a. $Mx = \dfrac{\sum x}{N} \dfrac{991.2}{37} = 2$

b. $My = \dfrac{\sum y}{N} \dfrac{670.8}{39} = 17.2$

c. $\sum x = \sum x^2 - \dfrac{(\sum X)^2}{N^x}$

$= 31089.84 - \dfrac{(991.2)^2}{37} = 31089.84 - 26553.44 = 4536.4$

d. $\sum y^2 - \dfrac{(y)^2}{N^y} = 13827.84 - \dfrac{(670.8)^2}{39} = 13827.84 - 11537.76$

$= 2290.08$

$$t - test = \dfrac{Mx - My}{\sqrt{\left(\dfrac{\sum x^2 + \sum y^2}{Nx + Ny - 2}\right)\left(\dfrac{1}{Nx} + \dfrac{1}{Ny}\right)}}$$

$$t = \frac{26.78 - 17.2}{\sqrt{\left(\frac{4536.4 + 2290.08}{37 + 39 - 2}\right)\left(\frac{1}{37} + \frac{1}{39}\right)}}$$

$$t = \frac{9.58}{\sqrt{(4.85)}}$$

$$t = \frac{9.58}{2.20}$$

$$\mathbf{t = 4.35}$$

The analysis of data in this research ultimatelly aimed to find out the deviation means scores, it was referred to the score of t-test, that is, 4,350366. Now, the score means to interpret whether the research is significant or not.

Discussion

Before the writer checked the table of t distribution. In the first instance, the writer determined the degree of freedom (df) viz ($N_x + N_y - 2$) or $37 + 39 - 2 = 74$. Based on the table of level significant have been pointed out, the coefficient (t-test) was directly checked on the table of t distrubution. Based on the table, the critical value of t-table on the level significance t 0.05 was 2.000 and 0.01 was 2.660 it was found that t-test was higher than t-table (4.35 > 2.000 and 2.660). Thus, there was significant different in the student's vocabulary between the experimental and control class. From the research, it was found that t-test 4.35. Then, the degree of freedom (df) that was employed in this research interpreted more to compare with two critical values, that is, t-test and t-table. The degree of freedom of this research can be obtained from the formula $\left(N_x + N_y - 2\right) = 37 + 39 - 2 = 74$. The writer employed the degree of freedom 74 as the nearest of the degree of freedom 74 was 2.000 from the confidence level of 0.05 (95%) and 2.660 from the confidence level of 0.01 (99%).

Based on the data analysis above, it was found that the result of t-test was higher than t-table. It means that alternative hypothesis (H_a) which asserted that there is an effect on the Word Mapping Technique in Teaching Vocabulary is accepted, whereas the null hypothesis (H_o) which asserted that there is not effective on the Word Mapping Technique in Teaching Vocabulary is rejected.

CONCLUSION AND SUGGESTIONS

In conformity with the investigation and discussion in the previously chapters above, the writer can draw a conclusion that the use of word mapping technique is effective in teaching vocabulary. It provide both of the mean scores and standard deviation of the experimental class showed that it was more effective than control class. The deviation of the two mean scores (26.78/17.2) was also significant. It read that the value of t-test was 4.35 while the value of t-table was 2.000 on the level of significant 0.05 (95%) and 2.660 on the level significant

0.01 (99%). This figure indicated that the value of t-calculated was higher than t-value of t-table 4.35 > 2.000 and 2.660.

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