TEACHING VOCABULARY BY USING WORD BASEBALL GRAPHIC ORGANIZER TO THE ELEVENTH GRADERS OF SENIOR HIGH SCHOOL

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Article Info	Abstract
	This paper is based on a research which examined the eleventh graders' achievement in vocabulary mastery. The study aimed to find out the significant difference of students' vocabulary achievement between the students who were taught by using word baseball graphic organizer and those who were not and to investigate the effectiveness of using word baseball graphic organizer to teach vocabulary. The study adopted quasi-experimental non-equivalent control group design. The data were gained through pre-test and post-test scores and participants' responses of the questionnaire. The results of the study showed that the mean score of the pre-test in the experimental group was 74.35, while in the control group was 74.62. In the post-test, the mean score of the experimental group was 83.09, and the control group was 79.29. The result of post-test increased. In addition, the t-test result was 1.990, and t-table was 1.787. It can be clearly seen that t_{value} is higher than t_{table}. It means that the hypothesis of H_1 was accepted and H_0 was refused. According to the proven hypotheses, I can conclude that teaching vocabulary using word baseball graphic organizer was proven to be effective for the eleventh grade students of senior high school. © 2017 Universitas Negeri Semarang

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INTRODUCTION

This research investigated the effectiveness of using word baseball graphic organizer to teach students vocabulary to the eleventh graders in one of the State Senior High Schools in Semarang. In our daily life we need to communicate with others in order to deliver or gain some information or just for the sake of courtesy with surrounding. In this case, language plays an important role in succeeding the communication. The communication will not run smoothly if we do not know the meaning of the words. Rubin and Thompson (1994: 79) points out that "One cannot speak, understand, read or write a foreign language without knowing a lot of words". According to Hatch and Brown (1995: 24), "Vocabulary is a list or set of words particular language or a list or set or words individual speakers of language might use". From those definitions, it can be concluded that vocabulary is an essential aspect in learning a language. Vocabulary learning is at the heart of mastering a foreign language whether it is a spoken or written language. Thus, vocabulary is important to be learned in order to master English as the international language since vocabulary is the basic aspect of a language.

It seems not easy for students to learn English vocabulary as a foreign language, since it is absolutely different from Indonesian language. They find difficulties in enriching their vocabulary knowledge and memorizing new words because of the complexity of the words themselves. In fact, people who have low vocabulary mastery will have problem in learning English whether in gaining information or creating information. Therefore, they cannot use language accurately.

In addition, it is difficult for students to learn and memorize English vocabularies. I found the reason why the students have low vocabulary proficiency. It is because the teacher still uses the conventional method or grammar translation method in teaching vocabulary. The students are asked to write down some words from the textbook to their individual book. They get of learn English without any media. They just wait for the teacher to inform them about the meaning of the words they have just written. In fact, learning English can be fun if we apply attractive and appropriate techniques and media. Besides, it will motivate the students in learning English.

When we learn English vocabularies, we meet various words which have different part of speech, such as noun, verb, adjective and adverb. Those words are not only formed by a base word but also composed with other smaller elements, such as prefixes and suffixes. A prefix is a group of letters placed before the root of a word, while suffix is a group of letters placed after the root of a word. We can discover other words by adding a base word with prefix and/or suffix. This process is called affixation. The students can memorize the meaning of those words because the words are still in one family. It means that the meaning of the words is nearly the same but they absolutely have different function in a sentence. For example, the word "beauty" is added by suffix "-ful" so that it becomes a new word "beautiful". Both of them have relatively different meaning, but they completely belong to the different part of speech. The words "beauty" and "beautiful" are related to the quality of being pleasing, "beauty" is something that gives a great pleasure and belongs to "noun"; however, "beautiful" belongs to "adjective" which means the state of being attractive or pleasant.

Because of that problem, I investigated whether or not the use of word baseball graphic organizer is effective in teaching vocabulary. According to Bromley et. Al., 1995 (as

cited in Judit Bauer Stamper, 2006), Graphic organizer is a visual and graphic representation of relationships among ideas and concepts. This instructional tool comes in a variety of formats – from loose webs to structured grids - that help students in processing information they've gathered and organizing their ideas. To my knowledge, there has not been very much studies about it.

Word baseball graphic organizer can be stated as a medium to teach students vocabulary by adding prefixes and suffixes in a base word. Therefore, the students learn vocabulary based on the same family. It makes them easier to memorize because the words are still in the same family. Schmitt (2000: 148) argues that "We can maximize vocabulary learning by teaching word families instead of individual word forms. Teachers can make it a habit when introducing a new word to mention the other members of its word family". Besides helping the students to enrich the vocabularies, word baseball graphic organizer gives more understanding about the function of the words or the words' part of speech.

This research needs to be carried out because first, vocabulary mastery is the essential aspect in learning language. According to Ellis (1997) as cited in Schmitt (2000:143) "The main reason for believing that vocabulary knowledge can help grammar acquisition is that knowing the words in a text or conversation permits learners to understand the meaning of the discourse, which in turn allows the grammatical patterning to become more transparent".

Second, interesting technique tends to be needed for teaching vocabulary in the classroom to boost students' interest. The last, knowing the various words in the same family which has the same root is a powerful way of building vocabulary. Therefore, based on the explanation above, hopefully word baseball graphic organizer can be a successful way to solve those problems. It is in line with my objectives in conducting this study that by using word baseball graphic organizer can be an appropriate medium to teach vocabulary.

METHODOLOGY OF THE RESEARCH

To achieve the goal, I applied a quasi-experimental study with non-equivalent control group design. This study was conducted in one of the senior high schools in Semarang in the academic year of 2015/2016. The second grade students were chosen as the population. There were ten classes of eleventh grade students in that school. In determining the sample, I chose the existing class of eleventh grade by using purposive sampling or non-probability sampling. I applied this sampling technique because in the non-equivalent control group design, the experimental and control groups have not been equated by randomization. Both groups were tested in pre-test and post-test. The difference of these groups was treatment given in experimental group. The experimental group used word baseball graphic organizer while the control group used Grammar Translation Method without using word baseball graphic organizer.

In selecting the sample, I was helped by the leader of English teacher organization in that school. The classes were class XI IPA 2 as the control group and class XI IPA 3 as the experimental group. Those classes were chosen because of some considerations. First, both classes are given the same English materials by the same English teacher. Second, according to the score's record, the students of those classes equals in level of English achievement in that school.

In this research, the independent variable was the use of word baseball graphic organizer in teaching vocabulary. While the dependent variable was the students'

achievement of vocabulary in the test score. There were two hypotheses in this study which were alternative hypothesis and null hypothesis. The alternative (H_1) was the use of word baseball graphic organizer was effective to teach vocabulary to the eleventh grade students in one of the state senior high schools in Semarang; while the null hypothesis (H_0) was the use of word baseball graphic organizer was not effective in teaching vocabulary.

The instruments used in this study were test and questionnaire. I conducted two kinds of test. They were pre-test and post-test. Pre-test and post-test were held in the beginning and the end of the research. The objective of using pre-test and post-test was to find out the students' vocabulary mastery before and after the treatment. There were 30 items in this test. The type of items used was multiple-choice items. The test itself consisted of some sentences which allowed the students to choose the proper word in order to complete the sentences given. The options consisted of some words that belonged to the same family. They consisted of derivational prefixes and derivational suffixes. The derivational suffixes chosen in this instrument were the derivational suffixes which occurred more often or in the other words, the derivational suffixes which had relatively greater number of their usage frequency. This process of selection dealt with the students' familiarity toward those derivational suffixes. Almost all the chosen derivational suffixes occurred often in the students' books. They had relatively a great number of their usage frequency. Beside the consideration of the frequency of derivational suffixes occurred in the students' books especially in the hortatory text, the process of selecting the derivational suffixes going to be used in this instrument was also based on the parts of speech they belonged to. After I read the hortatory texts in the student's book, I found that the nominal suffixes occurred more often than the other suffixes. Meanwhile, the adverbial suffixes occurred less frequently than the other suffixes. Considering the aspects above, I decided to make the items that consist of 60% of nominal suffixes, 20% of verbal suffixes, 20% of adjectival suffixes, and 10% of adverbial suffixes. Before the test was used as an instrument to collect the data, it was tried out first to the class in neither experimental nor control groups.

After the data was obtained, I calculated the normality and homogeneity of the test. Then, if the data was normal and homogenous, I continued to analyze the data to see whether there is a significant diferrence between the students taught by using word baseball graphic organizer and those who were not by using t-test. If the t_{value} is higher than t_{table}, and sig (2-tailed) is lower than level of significance 0.05 then there is a significant difference between the control and the experimental groups. On the other hand, if t_{value} is lower than t_{table}, and sig (2-tailed) is higher than level of significance 0.05, it means that there is no a significant difference between two means.

Besides using test as the instrument, I also used questionnaire in the form of close format question to support the data. It was the type of questionnaire which allowed the students to choose the optional answers given. The purpose of giving questionnaire in this research was to gain the description about students' interest, the advantage of using word baseball graphic organizer, the the students' achievement, the relevancy, and sustainability in teaching and learning vocabulary by using word baseball graphic organizer. The questionnaire was given to the experimental group after they finished doing the post-test. There were several steps in analyzing questionnaire. First, I graded the items, 3 for the answer *yes*, 2 for the answer *doubt*, and 1 for the answer *no*. Second, I tabulated the data and calculated the mean. The formula used to calculate the mean could be seen below:

$$M = \frac{the\ total\ score}{the\ number\ of\ participants}$$

Third, I matched the mean to criterion according to Heaton (1975: 172). The criterion can be seen on the next page:

Range of Mean	Students' Interest	The Advantage	Students; Achievement	The Relevancy	Sustainability
0,00 – 1,00	Low	Not helpful	Low	Not relevant	Not necessary
1,01 – 2,00	Medium	Helpful	Medium	Relevant	Necessary
2,01 – 3,00	High	Very helpful	High	Very relevant	Very necessary

Table 2.1 Mean Criterion of Questionnaire by Heaton

RESULT AND ANALYSIS

Results of the Test

I conducted try out on Thursday, March 3rd, 2016. Thirty four students of XI IPA 1 were asked to complete the 45 multiple-choice items of vocabulary test in 40 minutes. The test scored 1 point for each right answer and 0 for the wrong answer. Then, I found out the validity, reliability, item facility, and item discrimination of the items. From the overall 45 items, 31 items were valid and reliable. In designing a test, I considered not only validity, reliability, item facility, and item discrimination, but also practicallity of the test. According to Brown (2004: 19), "An effective test is practical. This means that is not excessively expensive, stays within appropriate time constraints, is relatively easy to administer, and has a scoring or evaluation procedure that is specific and time-efficient". Therefore, to make the test is easy to administer I took only 30 items as the pre-test and post-test from 31 items that were classified as good items.

After tried out the test, I conducted pre-test for both groups. The pre-test for the control group was conducted on Wednesday, March 23rd, 2016 to the students of XI IPA 2. While for the experimental group was held on Thursday, March 24th, 2016 to the students of XI IPA 3. The pre-test was scored 1 point for each correct answer and 0 point for the wrong answers. The mean score of pre-test for experimental and control groups were 74.4 and 74.6. To find out if those groups were at the same level of proficiency, I calculated the Independent Sample t-Test. I calculated the normality and homogeneity first before calculating the Independent Sample t-Test.

Based on the normality test by using Kolmogrov test for pre-test in the control group, the sig (2-tailed) was 0.695. Since the sig value was higher than level of significance (0.069 > 0.05) it was concluded that the pre-test data in the control group was distributed normally. Then, in the experimental group, it was found the sig (2-tailed) value was 0.818. For it

showed that sig value was higher than level of significance (0.818 > 0.05), the pre-test of experimental group was also distributed normally.

After calculating the normality of pre-test, I computed the homogeneity of pre-test. Based on the homogeneity test by using SPSS 21.0 for Windows, the sig value was 0.336. Since the sig value was higher than level of significance (0.336 > 0.05), it was concluded that the experimental and control groups had the same variance or the population of both groups was homogenous. The data of pre-test were said to be normal and homogenous. Then, I calculated the Independent Sample t-Test to know if both groups were at the same level of proficiency before given the treatments.

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std.Error Difference	Lower	Upper
Pretest	Equal variances assumed	.598	.442	-.145	66	.885	-.265	1.822	-3.903	3.374
	Equal variances not assumed			-.145	65.435	.885	-.265	1.822	-3.904	3.374

Table 3.1 The Independent Sample t-Test of the Pre-Test

From the t-test, the sig (2-tailed) was 0.885. Since it was more than the level of significance (0.05), it meant that there was no a significant difference between the students pre-test score in experimental and control groups. It can be concluded that the initial vocabulary mastery of the two groups were at the same level.

The post-test for the control group was conducted on Wednesday, March 13th, 2016, while for the experimental group was on Thursday, March 14th, 2016. The purpose of giving post-test was to measure students' vocabulary achievement after they were given the treatment. The test was the same as in the pre-test. The table below shows the mean scores for pre-test and post-test for both groups.

	Pre-Test	Post-Test	The Mean Difference
Control Group	74.62	79.29	4.67
Experimental Group	74.35	83.09	8.74

Table 3.2 Mean Scores Comparison

The mean of pre-test of the control group was 74.62, and the mean of post-test was 79.29. In the experimental group, the mean of pre-test was 74.35, and the mean of post-test was 83.09. The difference between pre-test and post-test of control group was 4.67 and the difference between the pre-test and post-test of experimental group was 8.74. The result of post-test on both groups increased, but there was higher improvement in the experimental group than the control group.

Before calculating the Independent Sample of t-Test by using SPSS, I found out the normality and homogeneity of the post-test. The post-test normality computation of the control group showed the sig (2-tailed) was 0.060. Since the sig value was higher than level of significance (0.060 > 0.05) it was concluded that the post-test data in the control group was distributed normally. Besides that, the sig (2-tailed) of experimental group was 0.274. Since the sig value was higher than level of significance (0.274 > 0.05), it was concluded that the post-test data in the experimental group were also distributed normally.

Based on the homogeneity test by using SPSS 21.0 for Windows, the sig value of post-test for experimental and control groups was 0.131. Since the sig value was higher than level of significance (0.131 > 0.05), it was concluded that the population of both groups was homogenous.

To know whether there is a significant difference between the two groups, I calculated the Independent Sample t-Test by using SPSS 21.0 for Windows.

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	Df	Sig.(2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
posttest	Equal variances assumed	3.119	.082	1.990	66	.050	3.794	1.906	-.012	7.600
	Equal variances not assumed			1.990	58.823	.050	3.794	1.906	-.021	7.609

Table 3.3 The Independent Sample t-Test of the Post-Test

From the table above, it could be seen that the sig (2-tailed) value was 0.050. Since it equals to the level of significance (0.05) and the t_{value} was higher than t_{table} with the df 66 (1.990 > 1.787), it meant that there was a significant difference between the students who were taught by using word baseball graphic organizer and those who were not. Thus, the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) that the use of word baseball graphic organizer was effective to teach vocabulary, is accepted.

After analyzing the mean score and the t-test results, I also analyzed the result of questionnaire. The conclusion of the questionnaire result can be seen on the following table.

Number of Question	Students' Opinion	Result
1,2,3,4,5,6	Students' interest	High
7,8,9,10,11,12	The advantage	Very helpful
13,14,15	The students' achievement	High
16,17,18	The relevancy	Very relevant
19,20	Sustainability	Very necessary

Table 3.4 Result of Analyzing Questionnaire

CONCLUSIONS

Due to the research finding and discussion, I would give some conclusions about this study.

The first conclusion, there is a significant difference between the vocabulary achievement of the eleventh grade students in one of the State Senior High Schools in Semarang in the academic year of 2015/2016 who were taught by using word baseball graphic organizer and those who were not. According to the analysis of t-test result, it was obtained that the t-value was higher than t-table. It means that there is a significant difference between the vocabulary achievement of the students who were taught by using word baseball graphic organizer and those who were not. In addition, the research findings revealed that the result of the research was in line with my alternative hypothesis (H_1) that "The use of word baseball graphic organizer is effective to teach vocabulary to the eleventh grade students." Thus, this hypothesis is accepted and the null hypothesis is rejected.

Second, by considering the different average scores on both groups, I am able to conclude that the use of word baseball graphic organizer as a medium in teaching and learning vocabulary gave contribution to improve students' competence of vocabulary. The mean scores difference between pre-test and post-test of the control group was lower than the experimental group. Moreover based on the questionnaire analysis, it showed that the students attracted with the medium that I used. This medium helped the students to enrich the vocabulary. The students' response towards the teaching and learning was good. The students' positive attitude toward the lesson was also good. The students were interested in the materials given during the teaching learning process. Thus, I come to the conclusion that the use of word baseball graphic organizer is effective to teach vocabulary at the eleventh grade students of senior high school

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