PAVE Strategy to Improve Students' Vocabulary Achievement

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Abstract: The objectives of this study were to find out whether or not: (1) there was a significant difference in students' vocabulary achievement between before and after they were taught by using Prediction, Association, Verification, and Evaluation (PAVE) strategy and (2) there was a significant difference in vocabulary achievement between the students who were taught by using PAVE strategy and those who were not. The samples of this study were 68 eleventh graders of SMA Negeri 6 Palembang divided into two groups (i.e. an experimental group and a control group) chosen through a purposive sampling method. To collect the data, each group was given a pre-test and a post-test. The data were analyzed by using Paired Samples t-Test and Independent Samples t-Test. The results from Paired Samples t-Test showed that there was a significant difference in students' vocabulary achievement between before and after they were taught by using PAVE strategy. Likewise, the results from Independent Samples t-Test showed that there was a significant difference in vocabulary achievement between the students who were taught by using PAVE strategy and those who were not. In conclusion, PAVE strategy was effective to be applied.

Keywords: *Teaching vocabulary, vocabulary achievement, PAVE strategy*

Abstrak: Penelitian ini bertujuan untuk mengetahuai apakah: (1) ada perbedaan signifikan pada pencapaian kosakata siswa sebelum dan sesudah diajar menggunakan strategi PAVE (Prediction, Association, Verification, and Evaluation) dan (2) terdapat perbedaan signifikan pada pencapaian kosakata diantara siswa yang diajar menggunakan strategi PAVE dan yang diajar dengan strategi konvensional. Sampel pada penilitian ini adalah 68 orang siswa kelas XI SMA Negeri 6 Palembang yang dibagi dalam dua kelompok, kelompok eksperimen dan kelompok kontrol, yang dipilih menggunakan metode purposive sampling. Untuk mengumpulkan data, kedua kelompok diberikan pretes dan postes. Data kemudian dianalisis menggunakan Paired Samples t-Test dan Independent Samples t-Test. Hasil dari Paired Samples t-Test menunjukkan bahwa terdapat perbedaan yang signifikan pada pencapaian kosakata siswa sebelum dan sesudah diajar menggunakan strategi PAVE. Serupa, hasil dari Independent Samples t-Test menunjukkan bahwa terdapat perbedaan signifikan pada pencapaian kosakata diantara siswa yang diajar menggunakan strategi PAVE dan yang tidak. Dapat disimpulkan bahwa strategi PAVE efektif untuk diterapkan pada pengajaran kosakata Bahasa Inggris untuk siswa kelas XI SMA Negeri 6 Palembang.

Kata-kata kunci: *Pengajaran kosakata, pencapaian kosakata, strategi PAVE*

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Vocabulary has an important role in learning and mastering English. Finocchiaro (1969) suggests that vocabulary achievement cannot be separated from the construction of communication aspects, namely listening, speaking, reading, and writing. It means that students need to master vocabulary as an important aspect of English in order to master the four skills (listening, speaking, reading, and writing) as well. In addition, Khajloo (2013) mentions 4 categories of phonetic and sound systems which affect the process of language learning and teaching, one of them is content (text) which includes the complexity of the data structure, grammar and vocabulary.

Moreover, based on *Peraturan Badan Standar Nasional Pendidikan No. 34 Th. 2015* about the implementation of National Examination Year 2015/2016 in Indonesia, English becomes one of the subjects that is examined in the National Examination. It means that the students need to reach the minimum of standardized score in order to pass the exam and continue to the higher level of education. On the other hand, based on the fact , English proficiency in Indonesia is still categorized as unsatisfactory. EF English Proficiency Index internationally ranks Indonesia as the 32nd place out of 70 countries which indicates Indonesia has a moderate proficiency of English. Therefore, as one of the important aspects of language, the students need to master as much vocabulary as possible as the way to overcome their problem in learning English.

Consequently, in learning English, some difficulties might be encountered by the students and one of them is the lack of vocabulary. In his research, Syahabuddin (2013) found that in Middle Schools in Aceh, 31 of bilingual learners and 41 monolingual learners claimed English as a difficult subject. Specifically 15 of bilinguals and 21 of monolinguals considered vocabulary, meanings and grammar are difficult to understand. Furthermore, the fact that 51% of students of SMPN 4 Malang found vocabulary as problem in listening, 40% in speaking and 57% in writing, is depicted in a research done by Nurhanifah and Widayati (2012). To sum up, the obstacle that the students faced the most in learning English is vocabulary.

Teachers can assist in improving students' knowledge of English vocabulary in various ways. One effective way is by applying certain vocabulary strategies which encourage the students to learn English vocabulary. One of the strategies that can be implemented is the PAVE strategy which stands for Prediction, Association, Verification, and Evaluation developed by Bannon, Fisher, Pozzi, and Wessel (1990). Sibold (2011) proposes, "PAVE strategy developed by Bannon, et al. (1990) encourages students to compare their guess at the meaning of a word with its lexical definition." Greenwood (2010) also describes how PAVE strategy works in five steps: (1) students are divided into pairs or triads to maximize their opportunities to discuss, clarify, and, at times, debate. They choose their word and its context, using ellipses where appropriate, (2) students then write their word again and predict its meaning, (3) next, students have a go at writing a sentence that captures their chosen meaning, (4) allow students to look up the word, (5) finally, have them revisit their original sentence, this time writing a richer one.

Mashayuni (2014) discovered that PAVE strategy is able to facilitate the students in both understanding the meaning of the new words and memorizing those words in a long period of time and also lead them to use the dictionary properly. In addition, D'Onofrio (2009) wrote a thesis which compares the effectiveness of PAVE and CAIV (Contextualization, Association, Individualization, and Verification). The result showed that the use of PAVE strategy is slightly more effective than CAIV by the mean of PAVE and CAIV respectively are 42.31 and 34.09.

The same problem also happens in SMA Negeri 6 Palembang. In an interview the researcher conducted at SMA Negeri 6 Palembang, one of the English teachers informed that the students usually faced difficulty in understanding a text when they found some new words in the reading text. The students would usually look at the meaning of the unknown words in their dictionary. However, it is forbidden in the examination. In fact, there are some disadvantages to looking up words in the dictionary while reading. One of them is that it will become a bad habit for the students. Another disadvantage is that students will lose their focus on understanding the reading text as they have to look up the dictionary back and forth finding out the meaning of certain words while reading. Furthermore, according to the researcher's interviews with several students, the students admitted that they faced difficulty in increasing vocabulary

mastery due to the enormous number of words that the English vocabulary contains. On the other hand, they also realized that it would be difficult for them to learn English without mastering the vocabulary.

The problems of the study are stated in questions as follows: (1) Was there any significant difference in vocabulary achievement of the students between before and after they were taught by using PAVE strategy?, (2) Was there any significant difference in vocabulary achievement between the students who were taught by using PAVE strategy and those who were not?

METHOD

A quasi-experimental research method and pre-test post-test control group design were applied in this research to know whether or not there was a significant difference in students' vocabulary achievement between before and after they were taught by using PAVE strategy and whether or not there was a significant difference in vocabulary achievement between the students' who were taught by using PAVE strategy and those who were not. The study was done in 20 meetings, including 2 meetings of pre-test and post-test.

The population of this study were the eleventh grade students of SMA Negeri 6 Palembang year 2016/2017 with a total of 329 students from MIA (*Matematika dan Ilmu Alam*) class. The samples chosen in this study were XI MIA 6 and XI MIA 4 by using purposive sampling technique. Then, by considering the criteria from the researchers, the teacher suggested that XI MIA 6 should belong to the experimental group, while XI MIA 4 should belong to the control group.

In collecting the data, vocabulary test was conducted. There were 60 questions of vocabulary test which were given to both experimental group and control group twice. For the experimental group, the pre-test was given before giving the treatment while the post-test was given after the treatment. Then, the data were analyzed by using Paired Samples t-Test to know whether or not there was a significant difference in students' vocabulary achievement between before and after the treatment in experimental group and by using Independent Samples t-Test to know whether or not there was a significant difference in vocabulary achievement between the students in the experimental group and those in the control group.

FINDINGS AND INTERPRETATION
Findings

The scores were categorized into 5 categories of achievement: ≤ 40 (failed), 41-55 (poor), 56-70 (average), 71-85 (good), 86-100 (very good). Thus, the score distribution of the students' vocabulary achievement of pre-test and post-test of experimental and control groups based on the five categories of achievement can be seen in Table 1 below:

Table 1. The Score Distribution for the Experimental Group and Control Group (N=68)

Group	Category	Pre-test		Post-test	
		N	%	N	%
Experimental	Very good	3	8.82	15	44.12
	Good	13	38.24	19	55.88
	Average	11	32.35	0	0
	Poor	7	20.59	0	0
	Failed	0	0	0	0
Total		**34**	**100**	**34**	**100**
Control	Very good	4	11.76	3	8.82
	Good	21	61.76	29	85.29
	Average	8	23.53	2	5.88
	Poor	1	2.94	0	0
	Failed	0	0	0	0
Total		**34**	**100**	**34**	**100**

The scores in Table 1 shows that in the pre-test of the experimental group, there were only three students (8.82%) in very good category, while the rest 13 students (38.24%) were in good category, 11 students (32.35%) in average category, and 7 students (20.59%) in poor category respectively. In the post-test group, the students' score were categorized only in two categories, 15 (44.12%) students were in very good category and the rest 19

(55.88%) students were in good category. There were no more students in average and poor category. On the other hand, in the control group, the pre-test scores showed that there were four students (11.76%) in very good category, more than half students (61.76%) were in good category and the rest

(23.53% and 2.94%) were in average category and poor category. For the post-test scores, most students (85.29%) were in good category while the rest (8.82% and 5.88%) were separated into very good category and average category.

Table 2. The Result of Paired Samples t-Test

Group	Test	Mean	t	df	Sig. (2-tailed)
Exp. Group	Post-test	83.88	11.449	33	.000
	Pre-test	67.76			
Control Group	Post-test	77.76	1.779	33	.084
	Pre-test	74.9			

As shown in Table 2, the results of Paired Samples *t*-Test showed that in the experimental group, the mean score of post-test (83.88) was higher than the pre-test one (67.76) with the mean difference 16.12. The results also showed that the *t*-obtained was 11.449 and ρ-value was 0.000. At the significance level of 5% (2-tailed), because the ρ-value was lower than 0.05 (0.000 < 0.05), therefore, the null hypothesis ($H_0 1$) was rejected and the alternative hypothesis ($H_a 1$) was accepted. Thus, it proved that there was a significant difference in students' vocabulary

achievement between before and after they were taught by using PAVE Strategy.

The result of Paired Samples *t*-Test in control group showed that 77.76 and 74.9 were the mean score for post-test and pre-test respectively. The mean score of post-test was higher than the mean score of pre-test with mean difference 2.86. For the *t*-obtained, it was 1.779 and ρ-value was 0.084. Because the ρ-value (.05) was higher than 0.05, it indicated that there was no signifant difference between the pre-test and post-test of the control group.

Table 3. The Result of Independent Samples t-Test

Group	N	Mean	Mean Diff.	Std. Deviation	Std. Error Mean	T	Df	Sig. (2-tailed)
Exp.	34	83,88		7,066	1,212		66	
Control	34	77,76	6.12	6,243	1,071	3.783	66	.000

The results of Independent Samples *t*-Test showed that the *t*-obtained was 3.783 and ρ-value was 0.000. At the significance of 0.05 (2-tailed), since the ρ-value was lower than 0.05 (0.000 < 0.05), the null hypothesis ($H_0 2$) was rejected, therefore the alternative hypothesis ($H_a 2$) was accepted. In other words, it can be concluded that there was a significant difference in vocabulary achievement of the students who were taught by using PAVE strategy and those who were not.

Interpretation

Based on the findings and statistical analyses, some interpretations were made. First, based on the statistical analyses, the students' vocabulary achievement increased after they received the treatment. From the mean score of pre-test and post-test, it showed that the students' scores were increased with a mean difference of 16.12. Moreover, the results of Paired Samples *t*-Test also indicated that there was a significant difference in

students' vocabulary achievement between before and after they were taught by using PAVE strategy as the ρ-value (0.000) was lower than 0.05. The improvement showed by the students cannot be ignored from the treatment given to them for about one month through PAVE strategy. During the treatment, most students seemed excited and enthusiastic since they knew that they would have a worksheet which represented the five steps of PAVE strategy. They admitted that the worksheet was very helpful in guiding them to apply each step of the strategy. Therefore, they were sure that they applied the strategy well since they did not miss any steps of it. Additionally, they were interested because they were asked to draw a random symbol or thing which could best represent the meaning of certain unfamiliar words at the end of steps of PAVE strategy. Working in groups made the students more enthusiastic to learn. One of the reasons was that they can share each other's insights prior to the

decision making. Having a discussion in fact made them less anxious as the results were based on the group's consideration instead of the individual's.

Second, there were a difference between the mean score of experimental group and control group. When both groups were compared in terms of the mean score of post-test, then it could be stated that the students of experimental group outperformed those in control group with the mean score of experimental group and control group were 83.88 and 77.76 respectively with a mean difference of 6.12. Furthermore, it was statistically proved by the results of Independent Samples *t*-Test which showed that there was a significant difference in vocabulary achievement between the students who were taught by using PAVE strategy and those who were not. The main reason was because the control group was not given the treatment. Then the results of Paired Samples *t*-Test of control group showed that the pre-test and post-test were not significantly different. Therefore, it could be considered that the strategy used in this study gave a significant improvement towards the students' vocabulary achievement.

Next, the progress was depicted from the score distribution of experimental group. In the pre-test, the students were involved into four categories, namely very good, good, average, and poor. In contrast, in the post-test, they were only separated into two categories, very good and good. Moreover, achievement of the students who belonged to very good category rapidly increased. At the end of the treatment, no students belonged to average or poor category. Meanwhile, in the control group, according to the pre-test, the students belonged to four different categories (very good, good, average, and poor). In the post-test, though, there were no more students who belonged to poor category. However, the number of students who belonged to very good category decreased. This was one of the reasons there was a significant difference between the results of the post-test in the experimental group and those in the control group.

After all, it could be assumed that PAVE strategy could be one of the strategies which was able to improve students' vocabulary achievement. The study conducted by Mashayuni (2014) emphasized the effectiveness of PAVE strategy in improving students' vocabulary achievement. She applied PAVE strategy in her study and found out that PAVE strategy was able to facilitate the students in both understanding the meaning of the new words and memorizing those words in a long period of time and also lead them to use the dictionary properly. Furthermore, the findings of this study was in line with the results of a study conducted by D'Onofrio (2009) who compared the effectiveness of PAVE strategy with another strategy. The result showed that PAVE strategy was more effective to be applied.

Moreover, the step of "association" in this strategy really attracted the students' attention which made them interested to learn vocabulary by using PAVE worksheet. It enabled them to connect the meaning of the unfamiliar words into a symbol or picture which they thought it was representative. Through this way, they would memorize the meaning of the words easily and in a long term. As what Bannon, et al. (1990) state that by having the symbol association, it will promote the students' long term memory of the word.

However, the researcher found some weaknesses in this study. First, during the treatment, some of the students were still confused about how to predict the meaning of the words. Some of them also admitted that s/he had a lot of prediction in his or her mind about the meaning of the words and it made them a little bit confused. The second weakness was some of them also faced difficulty in creating a sentence using the predicted-meaning-words. They took a relatively long time to think about the best sentence using those words. However, after they have verified the real meaning on the dictionary, they found out that was easy to make the new sentence using the words with its verified meaning. To overcome this, the researcher suggested the students to make only a simple sentence using the words since some students liked to create such a compound or even complex sentence which made them think quite deeper. The researcher also overcame this problem by giving them a trigger such as directly giving them an example of simple sentence using the word, but, they needed to make their new own sentence later on. Those efforts were effective in encouraging the students to think and create the sentences easily. The last weakness that the researcher observed was, since the students were divided into groups of four, some of the students did not actively participate during the group discussion. As the solution, the researcher observed each group closely and made sure that every member got involved in the group discussion.

Briefly, the PAVE strategy used in this study could help the students to improve their vocabulary achievement.

CONCLUSION AND SUGGESTIONS

Based on the findings and interpretations of this study, it could be concluded that PAVE strategy could be applied as an effective strategy in teaching vocabulary to the eleventh graders of senior high school due to its ability to improve the students' vocabulary achievement based on the statistical proof.

Besides, the researcher also drew some suggestions. Firstly, the English teachers, especially those of senior high school are suggested to apply certain strategies in order to improve students' vocabulary achievement. This PAVE strategy for sure can be one of the alternative strategies in teaching English vocabulary. The other suggestion is that English teachers can also use the findings of this study as the information in order to improve the students' vocabulary achievement. They can learn what students actually need to make them interested and enthusiastic in learning English vocabulary. In this case, giving a worksheet and having a symbol association might be one of the ways.

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