

# The Effect of PAVE Strategy and Motivation on Vocabulary Mastery in Junior High School

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## Abstract

This research aimed at investigating the effect of using PAVE strategy and motivation on students' vocabulary mastery. The design of this research was quasi-experimental research with 2x2 factorial designs. The population of this research was grade VIII students in junior high school 1 Batusangkar, West Sumatera, 2019/2020 academic year, amounting to 180 students consisting of 6 classes. There were two classes selected as experimental class and control class. The vocabulary mastery test and motivation questionnaire were used as instrumentation. Then the research data was processed using t-test formula and two-ways Anova. The results showed that (1) PAVE provided the significant effect in students' vocabulary mastery, (2) Pave provided the significant effect in students' vocabulary mastery with high motivation, (3) Pave didn't provide the significant effect in students' vocabulary mastery with low motivation, (4) there was an interaction between strategies and motivation on students' vocabulary mastery. Thus, the result shows that the PAVE provides better result to develop students' vocabulary mastery and motivation. The study recommended that the use of vocabulary learning strategies should be given enough attention to develop students' vocabulary and motivation.

**Keywords:** *PAVE strategy, motivation, vocabulary mastery*

## Introduction

Vocabulary mastery is the ability to recognize, understand and produce the words and the meaning. It also refers to the great skill and processing words of language. The success in improving vocabulary mastery requires students' motivation and interest on the words. It is important for the students to master the vocabulary since they cannot talk without having sufficient vocabulary. However, mastery the vocabulary is not an easy thing for the students, especially for the students in junior high schools. According to Academy (2014), it is easy to say the words in English but difficult to teach it to the students who learn English as the foreign language. The difficulty found is when the pronunciation sounds the same while the words are different. Thus, it makes students are confused in choosing the right word because there are many part of word that they should know. Besides that, it is difficult for the students to master it because they need long time to memorize, recall and mention a name of a thing.

The other problem is about choosing the appropriate strategy to help the students achieve the goal in learning. The students require assist from the teachers by applying appropriate strategy in the classroom. By using the strategy, they will be assisted in achieving the goal in teaching learning process. There are many strategies in teaching vocabulary, one of them is Prediction, Association, Verification and Evaluation (henceforth: PAVE) strategy. According to Diamond (2006), PAVE strategy is a teaching strategy that is used in teaching vocabulary where it contains picture, dictionary and contextual clues that can assist teachers draw students' interest and raise their motivation in teaching learning process. This strategy assists the teachers to teach students that they should always look words up in a dictionary as well, instead of just trusting the definition in the text. According to Lauren (2017), if the teachers apply this strategy, it will help students to be able to remember the meaning of words because they have a visual image to go with it. Then, it also assists the teachers in achieving goals in teaching learning process, especially in vocabulary mastery.

There have been number of studies deal with PAVE. They are Susilo from Indonesia in 2013, Altwaijri from Saudi Arabia in 2017, and Bader from Palestine in 2017. They investigated the effect of PAVE strategy in the different level, culture, subject and type of research. They proved that applying PAVE in the classroom have succeeded and given the good effect for the students' achievement in learning.

In addition, there are other important internal factors on learning, one of them is motivation. The reason for students to have desire to do action for something is based on the level of their motivation. It is one of the important factors that should be possessed by the students in learning or do something for life. According to Dornyei (2001), motivation plays a key role in the learning process. Motivation kick starts the process,

lubricates the parts, and fuels the engine to keep it running. Without motivation, the students may not start the act of learning at all and for those who have started to learn, they may not be able to maintain their learning once experiencing hardship in the process. Thus, motivation is the other factor that can assist students in achieving the goal in learning.

The research aims to investigate the effect of PAVE strategy and motivation on vocabulary mastery at junior high school students; (1) Does PAVE strategy provide the significant effect in vocabulary mastery at grade VIII students of SMPN 1 Batusangkar? (2) Does PAVE strategy provide the significant effect in vocabulary mastery for students with high motivation at grade VIII students of SMPN 1 Batusangkar? (3) Does PAVE strategy provide the significant effect in vocabulary mastery for students with low motivation at grade VIII students of SMPN 1 Batusangkar? (4) Is there any interaction between the strategies and motivation in vocabulary mastery at grade VIII students of SMPN 1 Batusangkar?

## Method

### 2.1 Population and the method of sampling

This research had a population from grade VIII students of SMPN 1 Batusangkar in academic year 2018/2019. The amount of population was 180 students and they were distributed into six classes. Each class consisted of 30 students.

The samples of this research were experimental and control class. This research used cluster random sampling to determine the sample. The research used cluster random sampling technique because the sample has been group into their classes.

In selecting sample, there were some procedures that have done. First, placement test distributed for population in this research in order to figure out students' competency in vocabulary mastery. Then, the normality and homogeneity test have done to know the population was normally distributed and homogeneous. In this case, this research applied the Liliefors testing for normality testing and Barlett formula for homogeneity testing. Based on the statistical analysis, it is found that the all students were normally distributed.

Second, after ensuring the data population had normal and homogenous distributed, so each class had equal chance to choose as the sample. Then cluster random sampling would be done by doing lottery to take the sample. The classes were selected by writing the name of each class on class separated small pieces of paper, placing them on hands, and shaking them. The first paper was assigned for experimental group. The second paper was assigned for control group. The others were not be assigned in this research but one of them would be a tryout class.

### 2.2 Instrumentation

In this research, there were two instruments, test of vocabulary mastery and questionnaire of motivation. Post-test was only used in collecting the data. It was used to measure students' vocabulary mastery. The format of the test was multiple choices. It was designed based on the elements of vocabulary from Ur (1996). In order to know the students' level of motivation, questionnaire was used in this research as the instrumentation. Inter-rater reliability was used in order to see the reliability as similar as testing reliability for vocabulary mastery. This instrument was written or developed based on theory by Sobur (2011).

The instrumentation distributed to try-out class before they would be distributed in experimental and control class. The result of vocabulary mastery test in try-out class would be calculated according to reliability, validity, difficulty index and discrimination index of the test. In the other hand, the result of motivation questionnaire would be calculating according to reliability and validity of the test. If the test and questionnaire had good result according to the category of validity, reliability, difficulty index and discrimination index, they would be distributed to experimental and control class.

### 2.3 Technique of Data Analysis

This research used three steps in calculating the data analysis; normality testing, homogeneity testing and hypothesis testing. Before testing the hypothesis, the data was analyzed by pre-requisite analysis that was test normality and homogeneity. Normality testing had done to observe whether data collected from both group are normality distributed or not. It was analyzed by Lilliefors Test.

**Table 1. Normality Testing of Students' Motivation in Experimental and Control Class**

Class	N	L <sub>Observed</sub>	L <sub>Table</sub>	Data Distribution
Experimental	30	0.0544	0.1618	L <sub>Observed</sub> < L <sub>Table</sub> Normal
Control	30	0.0784	0.1618	L <sub>Observed</sub> < L <sub>Table</sub> Normal

The table description above shows that  $L_{observed}$  of experimental and control class are lower than  $L_{Table}$ . If  $L_{observed} < L_{table}$  it means that data had distributed normally.

**Table 2. Normality Testing of Students' Vocabulary Mastery in Experimental and Control Class**

Class	N	$L_{Observed}$	$L_{Table}$	Data Distribution	
Experimental	30	0.1259	0.1618	$L_{Observed} < L_{Table}$	Normal
Control	30	0.1295	0.1618	$L_{Observed} < L_{Table}$	Normal

The table description above shows that the data analysis of students' vocabulary mastery in both experimental and control class are lower than  $L_{Table}$ . If  $L_{observed} < L_{table}$  it means that data had distributed normally.

Besides that, the homogeneity testing was analyzed by Barlett formula for population and variance test (F-test) for sample (Sudjana, 2002).

**Table 3. The Result of Homogeneity Testing in Experimental and Control Class**

Data	$F_{Calculated}$	$F_{Table}$	Conclusion
Vocabulary Mastery	1.21	4.01	Homogeneous
Motivation	1.01	4.01	Homogeneous

The table of data description above shows that the value of  $F_{calculated}$  from vocabulary mastery in both classes is 1.21 and the value of  $F_{calculated}$  from students' motivation in both classes is 1.01 which is lower than  $F_{table}$  4.01. It is clear that all of the data analyses from students' vocabulary mastery and students' motivation are homogenous.

To classify the students who had high and low motivation, the researchers used the guidelines proposed by Wiersma and Jurs (1990) who agree on the number of all students in one class divided by 27%. The results are; some students (27% of the students) at the top line as the high motivation students and some students (27% of the students) at the bottom line as the low motivation students.

After the data were distributed normally and homogenous, the hypothesis testing would be done. The average scores of test from two classes were compared to determine the effectiveness of the teaching strategies. The hypothesis testing was about (1) Does PAVE strategy provide the significant effect in vocabulary mastery at grade VIII students of SMPN 1 Batusangkar? (2) Does PAVE strategy provide the significant effect in vocabulary mastery for students with high motivation at grade VIII students of SMPN 1 Batusangkar? (3) Does PAVE strategy provide the significant effect in vocabulary mastery for students with low motivation at grade VIII students of SMPN 1 Batusangkar? (4) Is there any interaction between the strategies and motivation in vocabulary mastery at grade VIII students of SMPN 1 Batusangkar?

**Results and Discussion**

The purpose of this research is to investigate the effect of PAVE strategy and motivation on students' vocabulary mastery. The result of the statistical analysis of the data was used to find the result of the hypothesis. The questionnaire of motivation was distributed in experimental and control class before implementing PAVE procedure to find out the students level of motivation. At the end of meeting, post test was distributed in order to find out the result of students' achievement in vocabulary mastery.

*3.1 Major Findings of the research*

a. PAVE strategy provides the significant effect in students' vocabulary mastery.

The first hypothesis was tested to know whether PAVE strategy provides better result than WM strategy in students' vocabulary mastery. The statistical analysis from students' vocabulary mastery "t-Test: Two-Sample Assuming Equal Variances" from excel program for the first hypothesis in experimental and control class is described in the table below:

**Table 4. The Result of Students' Vocabulary Mastery t-Test in Experimental and Control Class**

**t-Test: Two-Sample Assuming Equal Variances**

	<i>Vocabulary Mastery Score exp</i>	<i>Vocabulary Mastery Score cont</i>
Mean	79.96666667	75
Variance	92.10229885	115.1034483
Observations	30	30
Pooled Variance	103.6028736	
Hypothesized Mean Difference	0	
df	58	
t Stat	1.889838719	
P(T<=t) one-tail	0.031890248	
t Critical one-tail	1.671552763	
P(T<=t) two-tail	0.063780496	
t Critical two-tail	2.001717468	

**If Pvalue < 0,05, it means that alternative hypothesis is accepted**

From the table of “t-Test: Two-Sample Assuming Equal Variances”, Larson and Kho (2010) say that if  $P(T \leq t) < 0.05$  (level significance) means the research hypothesis ( $H_1$ ) is accepted and if  $P(T \leq t) > 0.05$  means the null hypothesis ( $H_0$ ) is accepted. It can be concluded from the table that the alternative hypothesis ( $H_1$ ) is accepted because  $P(T \leq t) 0,03 < 0.05$ .

b. PAVE strategy provides the significant effect than WM strategy in students' vocabulary mastery with high motivation.

The data analysis of students' vocabulary mastery scores in experimental and control class with high motivation were analyzed by using “t-Test: Two-Sample Assuming Equal Variances” from excel program. The students' vocabulary mastery scores were sorted based on their motivation score. Then, 27% of the upper class (8 students) were taken and categorized as high motivation students.

**Table 5. The t-Test Result of Students' Vocabulary Mastery in Experimental and Control Class Who Have High Motivation**

**t-Test: Two-Sample Assuming Equal Variances**

	<i>Vocabulary Mastery</i>	<i>Vocabulary Mastery</i>
Mean	80.875	71.25
Variance	87.26785714	140.5
Observations	8	8
Pooled Variance	113.8839286	
Hypothesized Mean Difference	0	
df	14	
t Stat	1.803846233	
P(T<=t) one-tail	0.046404785	
t Critical one-tail	1.761310115	
P(T<=t) two-tail	0.092809569	
t Critical two-tail	2.144786681	

**If Pvalue < 0,05, it means that alternative hypothesis is accepted**

The table description above shows that the result of data analysis of the students who had high motivation in experimental class which was taught by using PAVE strategy and control class which was taught by using WM strategy. The result of the “t-Test: Two-Sample Assuming Equal Variances” can be read if  $P(T \leq t) < 0.05$  (level significance) means the research hypothesis ( $H_1$ ) is accepted and if  $P(T \leq t) > 0.05$  means the null hypothesis ( $H_0$ ) is accepted. It can be concluded from the table above that alternative hypothesis ( $H_1$ ) is accepted because  $P(T \leq t) 0.04 < 0.05$ . In other words, the students who were taught by using PAVE strategy get better result in vocabulary mastery than those who were taught by using WM strategy. In other words, PAVE strategy provides the significant positive effect in vocabulary mastery for students with high motivation.

c. PAVE strategy does not provide the significant effect than WM strategy in students' vocabulary mastery with low motivation.

The data analysis of students' vocabulary mastery score in experimental and control class with low motivation were analyzed also by using “t-Test: Two-Sample Assuming Equal Variances” from excel program. The students' vocabulary mastery scores were sorted based on their motivation. Then, 27% of the lower class (8 students) were taken and categorized as the low motivation students.

**Table 6. The t-test Result of Students' Vocabulary Mastery in Experimental and Control Class Who Have Low Motivation**

**t-Test: Two-Sample Assuming Equal Variances**

	<i>Vocabulary Mastery</i>	<i>Vocabulary Mastery</i>
Mean	74.5	81.5
Variance	107.1428571	44.57142857
Observations	8	8
Pooled Variance	75.85714286	
Hypothesized Mean Difference	0	
df	14	
t Stat	-1.607421582	
P(T<=t) one-tail	0.065136875	
t Critical one-tail	1.761310115	
P(T<=t) two-tail	0.13027375	
t Critical two-tail	2.144786681	

If Pvalue > 0,05, it means that alternative hypothesis is rejected

The table description above shows that the result of data analysis of the students who had low motivation in experimental class which was taught by using PAVE strategy and control class which was taught by using WM strategy. The result of the “t-Test: Two-Sample Assuming Equal Variances” can be read if  $P(T \leq t) < 0.05$  (level significance) means the research hypothesis ( $H_1$ ) is accepted and if  $P(T \leq t) > 0.05$  means the null hypothesis ( $H_0$ ) is accepted. It can be concluded from the table above that alternative hypothesis ( $H_1$ ) is rejected because  $P(T \leq t) 0.06 > 0.05$ . In other words, the students who were taught by using PAVE strategy does not get better result in vocabulary mastery than those who were taught by using WM strategy. In other words, PAVE strategy does not provide the significant positive effect in vocabulary mastery for students with low motivation than high motivation.

d. There is interaction between both strategies (PAVE and WM) and motivation on students' vocabulary mastery

The fourth hypothesis was tested by using “two ways ANOVA: Two-Factor with replication” from excel program in order to know whether there is an interaction between motivation and the strategies (PAVE and WM).

**Table 7. The Result of Two Ways ANOVA Analysis Tests of Two-Factor with Replication**

ANOVA							
	<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>Fcrit</i>
Sample		2410.71875	7	344.3884	30.35930736	4.36864E-08	2.6571966
Columns		13.78125	1	13.78125	1.214876033	0.286672762	4.493998418
Interaction		646.96875	7	92.42411	8.147579693	0.000274585	2.6571966
Within		181.5	16	11.34375			
Total		3252.96875	31				

If  $F > F_{crit}$  or  $P_{value} < 0,05$  in interaction column, it means that alternative hypothesis is accepted and there is an interection both of strategies and motivation on students vocabulary mastery.

The table description above shows that the data analysis of the students who were taught by using PAVE strategy and WM strategy. The result of “ANOVA: Two-Factor with replication” from excel program can be read if  $P_{value} < 0.05$  (level significance) in interaction column, it means the alternative hypothesis ( $H_1$ ) is accepted and if  $P_{value} > 0.05$  in interaction column, it means the null hypothesis ( $H_0$ ) is accepted. It can be concluded from the table above that alternative hypothesis ( $H_1$ ) is accepted because  $P_{value} (0.0002) < \text{level significance} (0.05)$ . In short, there is an interaction between both Strategies and motivation on students' vocabulary mastery. It is clear that the alternative hypothesis ( $H_1$ ) is accepted. In other words, both strategies give the same significant effect in vocabulary mastery students with high and low motivation. It is also proven by the interaction chart below:

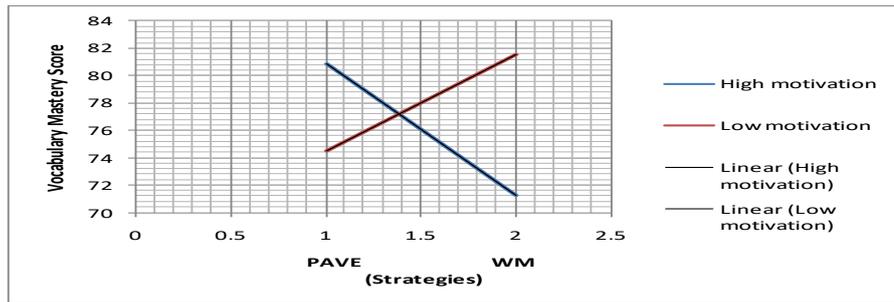


Figure 1. The Interaction between Strategies (PAVE and WM) and Motivation

The chart above shows that there are two lines which indicate high (blue line) and low (red line) motivation. The two lines interact each others that show there is an interaction between strategies and motivation. It shows there is the interaction because PAVE strategy provides the high score in vocabulary mastery for students with high motivation while WM provides high score for students with low motivation. On the other hand, PAVE does not provide better score for students with low motivation and WM also does not provide better score for students with high motivation. According to the data analysis above, this research shows that there is the interaction both strategies and motivation in vocabulary mastery.

3.2 Discussion

a. PAVE strategy provides better result in vocabulary mastery than WM strategy for the students.

The data of statistical analysis shows that the students’ mean scores in experimental class are higher than students’ mean score in control class. In other words, PAVE strategy gives better result for students. It is in line with the previous research findings conducted by Susilo (2013) studied *the effect of using PAVE strategy in teaching vocabulary at third grade students of SDN 182 Palembang*. The Participants of the research were the elementary students in third grade. The findings showed that students who were taught through by PAVE strategy had some improvements in their vocabulary mastery scores after intervention compared to the control group. The data analysis showed that more than half of the students who taught through PAVE strategy felt more confident while learning English. When the students learned the vocabulary by using the PAVE strategy they understood and remembered the meaning of words easier. The students got higher score after PAVE strategy had been applied.

b. PAVE strategy provides the significant effect than WM strategy in vocabulary mastery for the students with high motivation.

The result of the second hypothesis shows that the mean score of students’ vocabulary mastery with high motivation were taught by using PAVE strategy is higher than who were taught by using WM strategy. According to NEPS (2015) it happened because students’ visual cognition worked better while studying by using PAVE. Visual cognition helps students to focus on what they see then remember what they see. It is also about how they think then process the knowledge and find the references. Here, the students who had high motivation were interested to follow the procedures of this strategy because students’ with high motivation had big desire to learn the new things. They were excited to follow the procedures of PAVE strategy in order to enrich their vocabulary. According to Harmer (2001) motivation is sort of internal drive which asks the students to do something in order to achieve the goal. Thus, the procedures in PAVE strategy helped students who had high motivation achieve the goal in vocabulary mastery.

c. PAVE strategy does not provide the significant effect in vocabulary mastery than Wm strategy for the students with low motivation.

The finding shows that PAVE strategy does not give better result for students who have low motivation than. It happened because students with low motivation did not believe to themselves for achieving the goal in learning. It is also supported by the situation when the researcher asked them to draw a picture, they weren’t confident to do it. It affected to their learning that they find the difficulties in memorizing the vocabulary. It is different from control class where the students who have low motivation get the higher score in vocabulary mastery by using WM strategy. It shows that students with low motivation felt comfortable in following the procedures in WM strategy in order to achieve their goal in learning.

The students with low motivation that found in the field didn’t like to be active in doing something. It is supported by Harmer (2001) the students who have low motivation in learning tend to be ignorant or not enthusiastic when the new things are introduced. They often find the difficulties in learning and finally get

the failure for the goal. In this case, the students think they will fail again, so why should try with the new one. Thus, it made students with low motivation in experimental class get the lower score than in the control class.

d. There is an interaction between those strategies (PAVE and WM) and students' motivation in vocabulary mastery.

Based on the analysis of the fourth hypothesis testing, it shows that there is an interaction between those Strategies and motivation toward students' vocabulary mastery. Clearly, the alternative hypothesis is accepted. The chart shows that there were there are two lines which indicate high (blue line) and low (red line) motivation. The two lines interact each others that show there is an interaction between strategies and motivation. It shows there is the interaction because PAVE strategy provides the high score in vocabulary mastery for students with high motivation while WM provides high score for students with low motivation. On the other hand, PAVE does not provide better score for students with low motivation and WM also does not provide better score for students with high motivation. According to the data analysis above, this research shows that there is the interaction both strategies and motivation in vocabulary mastery.

The line in the interaction chart shows an parallel line, it is like cross line with two line meet each other in the center of the diagram. In short, it is concluded that there is an interaction between those strategies (PAVE and WM) and students' motivation toward students' vocabulary mastery. However, motivation is not always have significant part in predicting students' score in academic. It is also supported by Cherry (2018) who says that motivation comes from outside and inside the students (extrinsic and intrinsic). Extrinsic motivation comes from the situation when students want to achieve something because want to get the reward or afraid of punishment. Otherwise, intrinsic motivation comes from the students' personal desire to achieve something. Thus, the students who have low motivation in learning are not always make them get bad score in learning. Even though they have low motivation it does not mean they don't have a desire to learn. It cannot be denied if the intrinsic motivation on students with low motivation in control class more flexible to be diffused with WM strategy than PAVE strategy for low motivation students in experimental class. Thus, students with high motivation are not always get better result in lesson and it also happen to students with low motivation. It can be helped by the teachers in choosing and applying the appropriate teaching techniques, strategies, method, and etc for the students.

## **Conclusions**

Based on research that was conducted at grade VIII students of SMPN 1 Batusangkar in academic year 2019/2020, there are some findings which can be discussed. First, PAVE strategy provides the significant effect than WM strategy in vocabulary mastery at grade VIII students of SMPN 1 Batusangkar. Second, PAVE strategy provides the significant effect than WM strategy in vocabulary mastery for students with high motivation at grade VIII students of SMPN 1 Batusangkar. Third, PAVE strategy does not provide the significant effect than WM strategy for the students with low motivation at grade VIII students of SMPN 1 Batusangkar. Fourth, there is an interaction between those strategies and motivation in students' vocabulary mastery at grade VIII students of SMPN 1 Batusangkar. It could be caused by those strategies worked together in completing each others to help students with high and low motivation to comprehend the material that they learn. Referring to the conclusions and implications of the research above, some suggestions are:

1. The teachers should evaluate themselves and their students to find out the students understand about the material.
2. The teacher should pay attention to students' motivation in determining the suitable teaching strategy or technique.
3. It is better to use PAVE strategy in teaching English, especially vocabulary mastery. Perhaps, it is useful to see whether this strategy brings beneficial impact to different kind of students and different kind of English skills.
4. It is suggested to other researchers to conduct a research on other moderator variable.

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