

**A CORRELATION OF LEARNING STYLES  
AND VOCABULARY ACHIEVEMENT**

**AN ARTICLE**

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PONTIANAK  
2017**

# A CORRELATION OF LEARNING STYLES AND VOCABULARY ACHIEVEMENT

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## **Abstract**

*This research focused on correlation of learning styles and vocabulary achievement. The aim of this research was to know whether significant or not the correlation of visual, auditory, and kinesthetic learning style to vocabulary achievement. The research was conducted to Year-11 students of Madrasah Aliyah Khulafaur Rasyidin in academic year 2016/2017. The data were collected through a questionnaire about learning style and a test of vocabulary. Significance of the correlated variable is computed using t-test. If t-value is higher than t-table, the correlation is significant. The t-value was compared to t-table. The findings are t-value of visual learning style was 8.02, for auditory learning style 2.46, while t-value of kinesthetic learning style was 0.51. The value of t-table was 2.101 at significant level 5% and df 18. Based on the results, it was found there is significant correlation of visual learning style to vocabulary achievement. There is significant correlation also for auditory learning style and vocabulary achievement. There is no significant correlation of kinesthetic learning style and vocabulary achievement.*

**Keywords: Auditory, Visual, Kinesthetic, Vocabulary Achievement**

## **INRODUCTION**

In learning English, every student applies particular way and technique to make them feel comfortable to gain the knowledge. They need to know about the learning style in learning process. Learning style is a mode of learning. It is an individual's preferred or best manner(s) in which to think, process information and demonstrate learning (Pritchard, 2009, p. 41). It is a habitual way of processing and transforming knowledge in learning skills to make individual be more intellectual. Learners who have higher degree, they will have some appreciation of their own learning style since this knowledge can help to make learning more efficient (Reid, 2005, p. 22). Students can be more successful in learning if they have applied about their learning style because they will prepare the strategy. This is one factor why every student was not realized how to make learning process more effective.

There are three common characteristics of learning style used by students, such as visual, auditory, and kinesthetic. Visual style is a way of learning which get the information based on images or presented visually. A visual learner uses the material or media that can be seen. Visual learners prefer seeing, such as reading a book, seeing the demonstration from the teacher, look at many examples in nature phenomenon with observation, or seeing the lesson that is served through television or video. They also use imagination as their information or "make movies in their minds" of information from that they read. In learning, they have to see the body language and expression of their teacher to understand the material. They think with imagination in their brain.

Auditory style prefers in learning through listening as a way to get the successful of learning. For example, they like to listen what the teacher explains, listen to the recording,

discuss with friends, listen to the music, etc. When auditory learners read a book, they read aloud. When they listen to the teacher, they acquire the information through tone, pitch, and speed of speaking. Answering and asking method, discussion method are effective for auditory learners.

Kinesthetic style is learning through doing something or physical movement. They use the whole body while they are learning. Kinesthetic learners also prefer to learn via experience. They enjoy physical education and movement opportunities. They do not like to sit in a long time because they want to do an activity and an exploration.

On the whole, every student has a learning style. One child may stick only to one way of learning over a long period of time (Sinagatuliin, 2009, p. 97). Although many people who have access to the three modalities such as visual, auditory, and kinesthetic, almost everyone tends toward one modality of learning. Every student has a strongest one or dominant learning style in learning. So, when students learn in accordance with their learning style, lessons are easily accepted.

This research focused on Year-11 students of Madrasah Khulafaur Rasyidin academic year 2016/2017. The participants are Science Class. In Madrasah Aliyah Khulafaur Rasyidin, English teacher asked students to memorize the vocabulary every day before the learning process began. Then, in final of semester, the teacher gave them the oral test to know about their vocabulary achievement. To make the vocabulary be inherent in long term memory, they have their

## METHOD

The research method applied correlation study. Correlation research is non experimental research that studies the direction and strength of relationships among variables (Ary, Jacobs, & Sorensen, 2010, p. 365). The main emphasis in a correlation study is to discover or establish the existence of a relationship/ association/ interdependence between two or more aspects of a situation (Kumar, 2011, p. 30). The researcher used

own learning style. It made some of them get easier to do the assignment from the teacher.

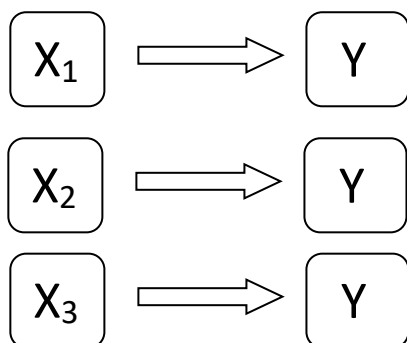
Students cannot express their own ideas or understand what people says if they are lack of vocabulary. Vocabulary is a group of words in certain language as a part of teaching and learning a language. To achieve speaking, listening, reading and writing skills in learning a language, students also must acquire many vocabularies. They are really competent in learning English, it means that they have acquired many vocabularies.

Therefore, it is important to know about the learning style that they applied in gaining and memorizing vocabulary. If they have known about their learning styles, they also know about their strategies in mastering vocabulary. It makes them can be easier to improve their vocabulary and know about the strengths and weaknesses when they enrich vocabulary.

In obtaining the data, the researcher gave students a test that has been tested in validity and reliability. It was because the researcher wanted to know about their achievement especially in vocabulary. Then, the researcher gave them questionnaire to know about their learning styles. To know the relation of students' learning styles and vocabulary, correlation form was important to get the data. The reason why the researcher did this research is to know the evidence based on the statistical data whether there is a significant correlation between learning styles and vocabulary achievement or not.

For the population of this research is 41 students, but the samples are 20 students. The researcher took XI C class.

correlation study to know the relation of learning styles and vocabulary achievement. Learning style is the independent variable (X) of this study, and the dependent variable (Y) of this research is vocabulary achievement. In this research, the kind of correlation is *bivariate* correlation. It is the technique of correlation analysis based on two variables. The paradigm of this design is like:



Keyword: X<sub>1</sub> = Visual learning style  
 X<sub>2</sub> = Auditory learning style  
 X<sub>3</sub> = Kinesthetic learning style  
 Y = Vocabulary Achievement

Techniques of data collection are observation and measurement. Observation is a purposeful, systematic and selective way of watching and listening to an interaction or phenomenon as it takes place. Observation can be defined as viewing and making a note systematically the phenomenon that is investigated (Kumar, 2011, p. 34). Observation can be direct observation and indirect observation. Direct observation is the researcher watches the interactions, processes, behaviors, or what happened to the participants and indirect observation is when

the researcher uses instrument to collect data. In this research, the researcher uses indirect observation with the questionnaire. While Measurement can be defined as a process through which researchers describe, explain, and predict the phenomena and constructs of our daily existence (Kaplan cited in Marczyk, DeMatteo, Festinger, 2005, p. 95). Measurement technique was used to calculate the score of students' vocabulary achievement.

Tools of data collections are questionnaire and test. Questionnaire is a list of question or statement about students' learning style that is given to students to find the information of learning style. The questionnaire was used to know about what the learning styles that students applied or the dominant learning style they have. The researcher gave students 20-25 minutes to fill the statement for this questionnaire. For the questionnaire was taken from Sudarsono (2008). It has 36 statements that consist of 12 statements of auditory style, 12 statements of visual style, 12 statements of kinesthetic style. This questionnaire has been tested of its validity and reliability.

**Table 1. Specification of Questionnaire**

Kinds of Learning Style	Specification	Number of Statement	Total
Visual	Prefer learning with seeing (visually)	2, 3, 6, 7, 12, 17, 19, 23, 25, 30, 31, 33	12
Auditory	Prefer learning with listening (hearing)	1, 4, 8, 11, 14, 15, 16, 20, 22, 27, 32, 34	12
Kinesthetic	Prefer learning with physical movement	5, 9, 10, 13, 18, 21, 24, 26, 28, 29, 33, 36	12

To have the score of learning style, Likert scale was used. Likert scale is one of tool to construct the data and usually used in questionnaire. In this research, the ranges from strongly agree to strongly disagree.

There are scored from 4 to 1 that can be seen in following table.

**Table 2. Frequency Score**

Frequency	Score
Strongly agree	4
Agree	3
Disagree	2
Strongly disagree	1

The researcher will analyze the students' learning style to know the score of X variable. After the students answer the statement from questionnaire, the researcher will sum the score of every number in each learning style. There is a key to know kind of learning style in every number of statements. While test is a tool of measurement and it guides the researcher to collect the data. It is to know the score or achievement of students' vocabulary achievement. The researcher used vocabulary test with 50 questions. Kind of question is using multiple choice. In making of the test, content words were applied. Students were given 90 minutes in one meeting to answer the test. Participants were given score 1 if the answer is true, and score 0 if the answer is false. To make the test be worthy, an instrument must be valid and reliable. It was analyzed through test items analysis. The test has been tried out to other sample. The researcher took Year-11 of XI B in Madrasah Aliyah Khulafaur Rasyidin in Academic Year 2016/2017.

**Table 3. Correlation Coefficient**

Coefficient Interval	Qualification
00 – 0.199	Very weak
0.20 – 0.399	Weak
0.40 – 0.599	Moderate
0.60 – 0.799	Strong
0.80 – 1.000	Very strong

In measuring how many contribution of X variable to Y variable, the following formula (Siregar, 2015, p. 205) was applied.

$$KP = r^2 \times 100\% \quad (3)$$

Keyword: *KP* =contribution

To answer the research questions, that is to have whether or not the correlation of learning styles and vocabulary achievement significant statistically. It must be found t-value associated with the correlation coefficient (Urduan, 2010, p. 86). It is computed with the following formula (Urduan, 2010, p. 86).

$$t = (r) \sqrt{\frac{n - 2}{1 - r^2}} \quad (1)$$

Keyword: *t* = value

*r* = correlation coefficient

*n* = number of students

To obtain the value of *r*, Pearson Product Moment formula (Ary, Jacobs, & Sorensen, 2010, p. 130) was applied as shown below:

$$r = \frac{\sum XY - \frac{(\sum X)(\sum Y)}{N}}{\sqrt{\left(\sum X^2 - \frac{(\sum X)^2}{N}\right) \left(\sum Y^2 - \frac{(\sum Y)^2}{N}\right)}} \quad (2)$$

Keyword: *r* = value

$\sum X$  = sum of score of students' learning style

$\sum Y$  = sum of score of vocabulary

$\sum X^2$  = sum of the squared score of students' learning style

$\sum Y^2$  = sum of the squared score of vocabulary

$\sum XY$  = sum of products of paired students' learning styles and vocabulary achievement

*N* = number of students

(Sugiyono, 2011, p. 184)

*r* = correlation coefficient

The value of t-table is to see whether or not t-value statistically significant. Then, the researcher determined signification level ( $\alpha$ )

and Df (degree of freedom). Df is number of participant minus two (n-2).

If t-value is higher than t-table, X variable has significant correlation with Y variable. If t-value is lower than t-table, X variable does not have significant correlation with Y variable.

## RESEARCH FINDING AND DISCUSSION

### Research Finding

Based on the data, the calculations are (1) visual learning style and vocabulary

achievement, (2) auditory learning style and vocabulary achievement, and (3) Kinesthetic learning style and vocabulary achievement. After obtaining the data from vocabulary test and questionnaire about visual learning style, it was calculated from the score of students in their vocabulary achievement and score of learning styles.  $X_1$  means visual learning style and Y is vocabulary achievement. There are six students can be categorizes as visual learner. For the scores, it can be seen in table below.

**Table 4. Calculation of Visual Learning Style and Vocabulary Achievement**

No.	Student	$X_1$	Y	$X_1^2$	$Y^2$	$X_1Y$
1	S6	42	87	1764	7569	3654
2	S7	41	80	1681	6400	3280
3	S8	35	75	1225	5625	2625
4	S9	34	75	1156	5625	2550
5	S11	28	70	784	4900	1960
6	S13	38	85	1444	7225	3230
	$\Sigma$	<b>218</b>	<b>472</b>	<b>8054</b>	<b>37344</b>	<b>17299</b>

After knew the result of calculation, it was obtained the result below to make easier the calculation of correlation coefficient and it was gotten  $r=0.887$ .

From the result of correlation coefficient of visual learning style and vocabulary achievement, it was obtained 0.865 and it can be interpreted as very strong correlation. In measuring how many contribution of X variable to Y variable, the researcher used this formula:

$$KP = r^2 \times 100\%$$

$$KP = 78\%$$

After knowing the value of correlation coefficient of visual learning style, it was measured the significant correlation of visual learning style and vocabulary achievement.

$$t = 8.02$$

The result of value of significant correlation coefficient, it was obtained 8.02 from visual learning style and vocabulary achievement.

For the hypothesis testing of visual learning style and vocabulary achievement, it was compared of r-value and r-table and it was obtained r-value = 0.887 and r-table = 0.46. r-value is higher than r-table ( $0.887 > 0.468$ ), so the Null Hypothesis is rejected or correlation coefficient of visual learning style and vocabulary achievement is significant.

In auditory learning style and vocabulary achievement data, there are eight students can be categorizes as auditory learner. The scores of auditory learning style and vocabulary achievement were in the table below. They were calculated to get the result of correlation coefficient.

**Table 5. Calculation of Auditory Learning Style and Vocabulary Achievement**

No.	Student	X <sub>2</sub>	Y	X <sub>2</sub> <sup>2</sup>	Y <sup>2</sup>	X <sub>2</sub> Y
1	<b>S1</b>	39	72	1521	5184	2808
2	<b>S3</b>	39	77	1521	5929	3003
3	<b>S4</b>	37	77	1369	5929	2849
4	<b>S5</b>	35	77	1225	5929	2695
5	<b>S10</b>	41	75	1681	5625	3075
6	<b>S12</b>	38	77	1444	5929	2926
7	<b>S19</b>	32	70	1024	4900	2240
8	<b>S20</b>	40	80	1600	6400	3200
	<b>Σ</b>	<b>301</b>	<b>605</b>	<b>11385</b>	<b>45825</b>	<b>22796</b>

After calculated the score of auditory learning style and vocabulary achievement, the results were inputted to formula of correlation coefficient.

$$r = 0.501$$

For the value of correlation coefficient of auditory learning style and vocabulary achievement, it was obtained 0.501 and can be categorized as average correlation. In measuring how many contribution of X variable to Y variable, the researcher used this formula:

$$KP = r^2 \times 100\%$$

$$KP = 25\%$$

After getting the value of correlation coefficient, it was measured the significant correlation of auditory learning style and vocabulary achievement.

$$t = 2.46$$

For the hypothesis testing of auditory learning style and vocabulary achievement, it was compared of r-value and r-table and it was obtained r-value = 0.501 and r-table = 0.468. r-value is higher than r-table (0.501 > 0.468), so the Null Hypothesis is rejected or correlation coefficient of auditory learning style and vocabulary achievement is significant.

In kinesthetic learning style and vocabulary achievement result, it was obtained the scores of kinesthetic learning style and vocabulary achievement, it was putted into the table below. X<sub>3</sub> is visual learning style and Y is vocabulary achievement. There are six students can be categorizes as kinesthetic learner.

**Table 6. Calculation of Kinesthetic Learning Style and Vocabulary Achievement**

No.	Student	X <sub>3</sub>	Y	X <sub>3</sub> <sup>2</sup>	Y <sup>2</sup>	X <sub>3</sub> Y
1	<b>S2</b>	33	80	1089	6400	2640
2	<b>S14</b>	39	77	1521	5929	3003
3	<b>S15</b>	38	82	1444	6724	3116
4	<b>S16</b>	41	82	1681	6724	3362
5	<b>S17</b>	39	80	1521	6400	3120
6	<b>S18</b>	32	80	1024	6400	2560
	<b>Σ</b>	<b>222</b>	<b>481</b>	<b>8280</b>	<b>38577</b>	<b>17801</b>

After obtaining the result of data, it was putted into the formula of correlation coefficient.

$$r = 0.120$$

From the result above, the value of correlation coefficient of auditory learning style and vocabulary achievement was obtained 0.067 and it was categorized as very weak correlation. In measuring how many contribution of X variable to Y variable, the researcher used this formula:

$$KP = r^2 \times 100\%$$

$$KP = 1.4\%$$

Based on the calculation correlation coefficient, it was measured the significant correlation of kinesthetic learning style and vocabulary achievement.

$$t = 0.51$$

For the hypothesis testing of kinesthetic learning style and vocabulary achievement, it was compared of r-value and r-table and it was obtained r-value = 0.120 and r-table = 0.468. r-value is lower than r-table (0.120 < 0.468), so the Null Hypothesis is accepted or correlation coefficient of kinesthetic learning style and vocabulary achievement is not significant.

## Discussion

Related to the research finding, the researcher discusses about the result of the data. It is from the questionnaire and vocabulary test, the research could answer the research question and determined the hypothesis from every learning style. The data was obtained from year-11 students of Madrasah Aliyah Khulafaur Rasyidin in academic year 2016/2017. It can be seen what students like the most or what they prefer in learning style even they have three modalities of learning style from the questionnaire. The researcher could see the score of achievement of vocabulary of students. So, it can be discussed whether every learning style has significant correlation or not with vocabulary achievement.

Based on the questionnaire that researcher gave to students, most of them who chose agree and strongly agree in

statement of visual and auditory. For example, in visual statement of number 12 that states "when listening to other people talk, I usually make describing from what they said in my mind". For students who answers agree and strongly agree for this number, they have higher score in vocabulary test. For auditory statement in number 11 that states "I know almost all of words from song that I listened", the researcher found the students who have higher achievement in vocabulary, they answered strongly agree. It means they got or learned new vocabulary from songs. It was also proved from their scores in visual and auditory toward their scores in vocabulary achievement. It can be seen from those examples, it shows learner who have high score in visual and auditory, they have higher achievement in vocabulary than students who low score in visual and auditory. But for kinesthetic learning style, statement number 29 that states "I usually use my finger to point sentence that I read.", the researcher found students who have high achievement and low achievement they answered strongly agree, agree, disagree and strongly disagree. It means it does not affect to vocabulary achievement.

The result from the calculation of contribution of learning styles and vocabulary achievement, it was obtained visual learning style gives the most contribution to vocabulary achievement than auditory and kinesthetic. For the contribution of visual learning style to vocabulary achievement is 78%. It is caused by the data which showed the scores of visual learner is high in vocabulary achievement and visual learning style. It means if they have higher score in visual learning style, they also have higher score in vocabulary achievement. For the contribution of auditory learning style to vocabulary achievement, it is weaker than visual or the calculation is 25%. It is proved by the data which showed auditory learners have high score in auditory learning style but not all of them could get the score of vocabulary achievement is higher. While the contribution of kinesthetic learning style to vocabulary achievement is only 1.4% and it



is the weakest from visual and auditory learning style. It means the score kinesthetic learner in kinesthetic learning style has influence but very weak to their score of vocabulary achievement.

## CONCLUSION AND SUGGESTION

### Conclusion

Visual learning style and vocabulary achievement have significant correlation with the t-value 8.02. It is higher than value of t-table which has the value 2.101 at significant level 5% and degree of freedom (df) is 18 ( $8.02 > 2.101$ ). It makes the correlation can be stated as significant. Value of  $r_1$  (correlation coefficient) of visual learning style and vocabulary achievement is 0.887 and has the contribution 78%. It is categorized as very strong correlation.  $H_0$  is rejected and  $H_a$  is accepted. So, there is a good influence of visual learning style toward vocabulary achievement.

Auditory learning style has significant correlation to vocabulary achievement. T-value is higher than t-table ( $2.46 > 2.101$ ). The value of t-value is 2.46, while t-table has the value 2.101 at significant level 5% and degree of freedom (df) is 18.  $r_2$  (correlation coefficient) of auditory learning style and vocabulary achievement has the value 0.501. For the contribution of auditory learning style toward vocabulary achievement is 25%. It is interpreted as moderate or average correlation.  $H_0$  is rejected and  $H_a$  is accepted. It means auditory learning style has sufficient effect to vocabulary achievement.

Kinesthetic learning style and vocabulary achievement do not have significant correlation. It can be proved from the t-value is 0.51. While the value of t-table is 2.101 at significant level 5% and degree of freedom (df) is 18. It can be stated as t-value is lower than t-table ( $0.51 < 2.101$ ). The value of  $r_3$  (correlation coefficient) of kinesthetic learning style and vocabulary achievement is 0.120 and has the contribution only 1.4%. It has positive correlation but it is very weak.  $H_0$  is accepted and  $H_a$  is rejected. So, kinesthetic learning style does not affect vocabulary achievement significantly.

### Suggestion

Based on the conclusion, the researcher recommends for students, teacher, and future researcher that may become input. It is from the result of this research which is about a correlation of learning styles and vocabulary achievement to year-11 students of Madrasah Aliyah Khulafaur Rasyidin in academic year 2016/2017. For students, in learning English, students have to achieve vocabulary in order to make them be more intelligent in speaking, listening, writing and reading. They must know about their learning style that they applied, especially in visual and auditory learning style. Because for visual and auditory learning style, it is proved by statistic research that they have significant correlation to vocabulary achievement. It means if they have higher score in visual and auditory, they have higher score also in vocabulary.

For teacher, the researcher recommends for English teacher to prepare the strategy or technique in teaching learning. It is caused some learning strategies or technique can coordinate every learning style that students used. The teacher also is expected to ask students in knowing their strategies in visual, auditory, and kinesthetic learning style because every students have their own way and ability in learning.

For future researcher, this research gives the information about the significant correlation of visual, auditory and kinesthetic learning style toward vocabulary achievement. The result shows visual and auditory learning styles have significant correlation to vocabulary achievement. The researcher gives the suggestion for future researcher to do the research more accurate based on the manual statistic data or a software that related to statistic.

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