

# **The Correlation of Visual, Auditory, and Kinesthetic Learning Style on Students' English Learning Achievement**

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## **Abstract**

This study aims to investigate the correlation of learning styles and students' English learning achievement. It was conducted by applying a correlation design with Multiple Regression to describe the correlation of visual, auditory and kinesthetic learning styles on students' English achievement of Junior High School 2 Pesanggaran students. The data was collected from questionnaires answered by the students as a sample of the study. Their last semester score of English academic achievement report were also collected to support this study. SPSS V.20 was used in computing and analyzing the result of the data collection. The data analysis was found by a significant correlation among learning styles and students' English learning achievement. The regression coefficient of these three factors was 0.868, meaning these three factors gave 86.8 % contribution to the students' English learning achievement. It indicated that there was only 13.2 % contribution of other factors that influenced the students' English learning achievement. Among the three predictor variables, auditory and kinesthetic learning style had the contribution to English learning achievement. Auditory learning style had the significant coefficient 0.000, while kinesthetic learning style had significant coefficient 0.000 or lower than 0.05. It meant they have significant correlation to the students' English learning achievement. Then visual learning style had the significant coefficient 0.076 or higher than 0.05. So, it meant that visual learning style didn't have positive correlation to the students' English learning achievement.

*Keywords:* visual learning style, auditory learning style, kinesthetic learning style, achievement

One of the most important factors that give contribution to the students' success in academic aspect is learning style. Each individual have his/her different ways of learning to gain and process the knowledge. Kumar, & Smart (2004) argued that the personal difference preferences were also known as learning styles. Processing, internalizing, and concentrating on new material in class became parts of the way of learning styles. Dunn & Griggs (2000), also argued the same statement that it was the way of students to begin concentrating, processing, internalizing, and remembering new academic information. It means that students have different ways in learning process which they need to concentrate and try to understand and remember new information when they are learning subject in the class. In this case, learning styles become an important aspect on the students' success of learning. Based on those understandings, some studies investigated the relationship of learning styles and academic achievement. Oksatridywi (2017) showed that learning styles were important factors which influenced students' vocabulary achievement in English class.

The result showed that there was significant relationship of visual and auditory to vocabulary achievement. It means that learning style was also the part in influencing the academic achievement of the student. Another research by Jhaish in 2010 investigated the correlation of learning styles and students' academic achievement in Al-Aqsa University. The research showed the significant correlation of achievement, auditory and total degree of style. However, it was different with visual, kinesthetic, tactile, group learning, and individual learning and the students' achievement. The result showed that there was no statistically significant correlation among them. Aboe in 2018 also did the research in Khairun University. A positive correlation of visual and auditory learning styles on student academic achievement was found in her research.

Then, the finding of the previous studies took a necessary aspect in designing this research. The researcher believed that learning styles had the correlation on students' English learning achievement at junior high school 2 Pesanggaran. This current research had been conducted to investigate the correlation of visual, auditory and kinesthetic learning style on students' learning achievement.

### **Method**

This study applied a correlational research design with Multiple Regression analysis, since it investigated the correlation of three predicted variables and dependent variable. Latief (2011:11) argued that correlation research design was one of the descriptive research designs to measure the correlation between two or more variables. Furthermore, the correlation research in this study was to investigate the pattern of correlation among the three variables to the students' English learning achievement. Borg, W.R., Gall, M.D in Latief (2015: 113) stated a correlation became the measurement in the co-relationship between two or more variables using correlational statistics and to investigate the precise degree of their relationship.

The research was at Junior High School 2 Pesanggaran, Banyuwangi, east java, Indonesia. The data sampling was eighth graders which consist of 123 students. The instrument was questionnaires which used Likert Scale type. It was used to identify students' learning style.

There were several steps in conducting the research. Firstly, the researcher decided the population and samples. Secondly, the researcher designed the instrument to obtain the data. Afterward, the students were given a questionnaire to measure the grade of their learning style. The highest score of their answer was identified as their preference learning style. After that, it was tested for the reliability test by using Alpha Cronbach in SPSS. Students' English score from their academic report were collected to find out students' English learning achievement. Next, the researcher analyzed the data collected by using Pearson Correlation and Multiple Regression analysis to find out a finding.

### **Results**

The data was calculated by using Pearson Correlation analysis to analyze the correlation and SPSS V.20 to analyze Regression Analysis. This correlation was figured out as follows;

#### **Correlation Analysis**

This analysis purposed to determine the strength of the correlation of visual, auditory and kinesthetic learning style on students' English learning achievement. In this study Pearson correlation analysis was used with the criteria that there is a relationship if significance value  $<0.05$ . The correlation analysis results showed as follows:

**Table 1. Correlation Analysis Result**

| Correlations               |                     | X1    | X2     | X3     | Y      |
|----------------------------|---------------------|-------|--------|--------|--------|
| Visual Learning Style      | Pearson Correlation | 1     | .017   | -.039  | .060   |
|                            | Sig. (2-tailed)     |       | .856   | .666   | .508   |
|                            | N                   | 123   | 123    | 123    | 123    |
| Auditory Learning Style    | Pearson Correlation | .017  | 1      | .869** | .920** |
|                            | Sig. (2-tailed)     | .856  |        | .000   | .000   |
|                            | N                   | 123   | 123    | 123    | 123    |
| Kinesthetic Learning Style | Pearson Correlation | -.039 | .869** | 1      | .865** |
|                            | Sig. (2-tailed)     | .666  | .000   |        | .000   |
|                            | N                   | 123   | 123    | 123    | 123    |
| Students' Achievement      | Pearson Correlation | .060  | .920** | .865** | 1      |
|                            | Sig. (2-tailed)     | .508  | .000   | .000   |        |
|                            | N                   | 123   | 123    | 123    | 123    |

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 1 above, described the correlation between visual learning style (X1) and English learning achievement (Y) produced a significance value 0.508 with coefficient 0.060. The significance value was  $> 0.05$ , which described there was no significant correlation between visual learning style and English learning achievement. While the correlation between auditory learning style (X2) and English learning achievement (Y) produced a significance value 0.000 with a coefficient 0.920. The significance value was  $< 0.05$ , it means that there was a significant correlation between auditory learning style and English learning achievement. The result of the correlation coefficient was very high. The correlation between kinesthetic learning style (X3) and English learning achievement (Y) produced a significance value 0.000 with coefficient 0.865. The significance value was  $< 0.05$ , which described there was a significant correlation between kinesthetic learning style and English learning achievement. It means that result of correlation coefficient was very high

**Table 2. Correlation of Learning Styles and Students' Achievement**

| (Y) Variable                 | (X) Variables                                | B      | T <sub>count</sub> | Significant | Description     |
|------------------------------|----------------------------------------------|--------|--------------------|-------------|-----------------|
| English Learning Achievement | Constant                                     | 51.744 |                    |             |                 |
|                              | Visual Learning Style (X <sub>1</sub> )      | 0.052  | 1.790              | 0.076       | Not Significant |
|                              | Auditory Learning Style (X <sub>2</sub> )    | 0.593  | 9.982              | 0.000       | Significant     |
|                              | Kinesthetic Learning Style (X <sub>3</sub> ) | 0.190  | 4.126              | 0.000       | Significant     |

|                                                 |           |
|-------------------------------------------------|-----------|
| $\alpha$                                        | = 0.05    |
| Coefficient Determination (Adj R <sup>2</sup> ) | = 0.864   |
| F-count                                         | = 260.262 |
| Significant                                     | = 0.000   |

The regression equation that was formed was as follows:

$$\text{English learning achievement} = 51,744 + 0.052 X_1 + 0.593 X_2 + 0.190 X_3$$

- The value 51,744 means that if visual, auditory and kinesthetic learning style had 0 value, so the average English learning achievement was 51,744.
- The value 0.052 means that if visual learning style increases 1, so English learning achievement would increase 0.052.
- The value 0.593 means that if auditory learning style increases 1, so English learning achievement increased 0.593.
- Value of 0.190 means that if kinesthetic learning styles increase 1, so English learning achievement would increase 0.190.

### Multiple Regression Analysis

After the assumptions were fulfilled, it could be tested the correlation of those three learning styles on students' learning achievement. Using SPSS V.20, Regression Analysis was applying to identify the significance correlation of predicted variables and dependent variable. The results were as follows:

**Table 3. The Summary of Regression**

| Model Summary <sup>b</sup> |                   |          |                   |                            |
|----------------------------|-------------------|----------|-------------------|----------------------------|
| Model                      | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1                          | .932 <sup>a</sup> | .868     | .864              | 1.57439                    |

a. Predictors: (Constant), Visual, Auditory and Kinesthetic Learning Style

b. Dependent Variable: English Learning Achievement

**Table 4. The ANOVA of Multiple Regression Analysis**

| ANOVA <sup>a</sup> |            |                |     |             |         |                   |
|--------------------|------------|----------------|-----|-------------|---------|-------------------|
| Model              |            | Sum of Squares | Df  | Mean Square | F       | Sig.              |
| 1                  | Regression | 1935.329       | 3   | 645.110     | 260.262 | .000 <sup>b</sup> |
|                    | Residual   | 294.964        | 119 | 2.479       |         |                   |
|                    | Total      | 2230.293       | 122 |             |         |                   |

a. Dependent Variable: English Learning Achievement

b. Predictors: (Constant), Visual, Auditory and Kinesthetic Learning Style

Table 3 above described the correlation of the three variables (R Square) was .868. It means that all the three variables had 86,8% correlation to English learning achievement. Based on ANOVA measurement, the significance level p was .000. It was smaller than p.01 or p 0.05. Thus, there was a significant correlation between visual, auditory and kinesthetic learning style and English learning achievement.

Coefficient of determination (Adj R<sup>2</sup>) was a magnitude which provided information from the regression equation that gave the proportion or percentage of the power of influence of the visual learning style variable (X<sub>1</sub>), auditory learning style (X<sub>2</sub>) and kinesthetic learning style (X<sub>3</sub>) on English learning achievement (Y). From table 3, the value of Adj R<sup>2</sup> was 0.864. These results explained the contribution of visual, auditory and kinesthetic learning style on students' learning achievement that was 86.4%, while the other 13.6% was contributed by other variables not included in this research.

### **The Significant Correlation of Visual, Auditory and Kinesthetic Learning Style on Students' English Learning Achievement**

Statistical hypothesis testing of the regression of all three predicted variables correlated with students' English learning achievement. With the significance level  $p = .000$ , the R Square of regression was .868. Therefore  $H_0$  was rejected while the  $H_1$  was accepted. There was a positive significant correlation of visual, auditory and kinesthetic learning style on students' English learning achievement among Junior High School 2 Pesanggaran students. Those three predicted variables gave 86.8 % contribution to the students' English learning achievement, while the other 13.2 % were contributed from the other factors. It means the three variables could contribute to the success of students' learning achievement.

Besides, the finding in this study also found that visual learning style didn't have positive significant correlation to the students' English learning achievement with the significant coefficient 0.076 or higher than 0.05. So, it means that  $H_0$  was accepted. However, the other results showed that auditory and kinesthetic learning styles had significant correlation to the students' English learning achievement. Auditory learning style had significant coefficient 0.000 and kinesthetic learning style had 0.000 or lower than 0.05. So, it indicated that  $H_0$  was rejected; auditory and kinesthetic learning styles had significant correlation to the students' English learning achievement.

## **Conclusions and Recommendations**

### **Conclusions**

This study had intention to investigate the correlation of learning styles on students' achievement. Besides, this study also attempted to identify the correlation of each learning style to the students' English learning achievement. The data analysis found that the three predicted variables correlated to English learning achievement. Visual, auditory and kinesthetic learning style gave 86.8 % contribution to the students' English learning achievement. It could be concluded that those three learning style could be significant factors influencing the students' English learning achievement.

Among the four correlations of each variable, auditory and kinesthetic learning styles correlated with students' English learning achievement. Auditory learning style had a significant coefficient 0.000 and kinesthetic learning style had 0.000 or lower than 0.05. So, it indicated that  $H_0$  was rejected which means auditory and kinesthetic learning styles had significant correlation to the students' English learning achievement. It means that those two variables contributed to the students' English learning achievement.

Furthermore, the other result showed that visual learning style didn't have positive significant correlation to the students' learning achievement with the significant coefficient 0.076 or higher than 0.05. So, it means that  $H_0$  was accepted and it didn't give the contribution to English learning achievement. In conclusion, learning styles gave much contribution to the success of VIII graders of SMPN 2 Pesanggaran to achieve learning

achievement. Among the three learning styles, auditory and kinesthetic contributed a lot to the students' English learning achievement.

### Suggestions

The researcher gives some suggestions for English teachers as the professionals who transfer their knowledge and prepare the students to face English material in class; (1) the teacher should maximize the students' learning style by guiding the appropriate methods and materials. Students' learning-style preference can be used by individuals or group with the same style preferences to maximize learning. Teachers' identification of the students' learning style can make the students easily accepting the materials by more matching with teacher practices, (2) the students' awareness of learning styles are considered important aspects to assist students in understanding their own way of learning, so they can get the point of learning easily. In this case, the teachers must have a method and strategy to increase the students' learning styles preference. For future researchers, it's suggested to analyze the other factors with English comprehension.

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