THE CORRELATION BETWEEN STUDENTS’ VOCABULARY MASTERY AND READING COMPREHENSION OF THE ELEVENTH GRADE STUDENTS OF SMAN 5 PALU

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ABSTRACT

The purpose of this research is to find out the correlation between students’ vocabulary mastery and reading comprehension of the eleventh grade students of SMAN 5 Palu. Twenty eight (28) students were chosen as the sample using purposive sampling method which was class XI IPA 6. The data were collected by tests and were analysed statistically. All the data gained in this research were analyzed by using the formulation of Pearson Product Moment Correlation and also supported by the program of IBM SPSS Statistic Version 21. According to the result of the analysis and statistical calculation, it was found that \( r_{\text{counted}} \) was 0.399 and \( r_{\text{table}} \) was 0.388 with the significance level of 0.05 and degree of freedom (df) was 26. By comparing the values of \( r_{\text{counted}} \) and \( r_{\text{table}} \), it can be obtained that \( r_{\text{counted}} \) was higher than \( r_{\text{table}} \). It means the alternative hypothesis (Ha) is accepted and there is a positive correlation between students’ vocabulary mastery and reading comprehension.

**Keywords**: correlation; vocabulary mastery; and reading comprehension.

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INTRODUCTION

Nowadays English cannot be separated in our life. As an international language, English is used as a foreign language and has become one of subjects in Indonesian schools taught from elementary up to university. By mastering English we can communicate with other people around the world and require knowledge. English is also used in many special occasions such as dealing with diplomacy, foreigner, or even in daily conversation. Therefore people who speak English have more chance to propose a scholarship of overseas study or apply for a job than people who do not.

In English there are four basic skills to be mastered by the students, such as listening, reading, and writing, speaking. Those skills are divide into two; receptive skills and productive skills. Receptive skills are listening and reading, because the students receive the information and understand it. While, productive skills are writing and speaking, because the students need to produce their ability in written and orally. In that case, the one of important skills in English is reading. By reading people obtain a lot of information, get new ideas, broaden the knowledge, and also get the point of what the writer expresses. Therefore reading can make people be smarter and creative.

Reading comprehension is the process of making meaning in written word. Through reading, people try to draw the meaning from the printed page and interpret the information appropriately. It requires more than knowing the meaning of individual words but people also know how individual words combined together to produce meaningful sentences.

Based on the curriculum 2013, learning English is the important subjects. The general objective of teaching English in senior high school is to develop the communicative competence of the students. The specific objective of teaching English is to make students be active in the language class both in oral and written. In understanding both of oral and written language, this curriculum emphasizes on reading and vocabulary teaching. The purposes of teaching reading skill are to make the students should be able to get general information about a text, identify the main idea explicitly and implicitly, get detail information about a text, and summary by using their own words. For supporting reading activity, the students are expected to master a lot of vocabulary. The purpose of teaching vocabulary is to enrich the students’ words knowledge thus they can understand a text easily.

By knowing a lot of vocabulary, students can easily interpret the message of sentence in reading and avoid from misunderstanding. It is also needed to express our ideas
or to transmit the message. The students will get difficulty if the material of reading or listening is full of English and almost the words are unfamiliar for them. Therefore, many students still take reading only for granted of little awareness of their performance in reading comprehension. Meanwhile, the students who learn English are expected to be able to understand what they listen and read for making them be successful in speaking and writing. Thus, vocabulary is the major component in learning new language especially English.

From those explanations above, it was contradiction what the researcher found when she did observation at the school. Most of the students were unfamiliar with the vocabularies written in the reading test. Therefore, they were not able to comprehend what was in the reading text. The researcher conducted her research in SMAN 5 Palu. The main reason, the researcher ever did the teaching practice in SMAN 5 Palu. The researcher already knows about the condition of the students that most of them got difficulty in understanding the meaning in the reading text. They had a little stock of words that were needed in learning English. When they were reading a text, they always ask the researcher about what the word means. From that case, the researcher was interested to found whether there is a correlation between students’ vocabulary mastery and their reading comprehension.

**RESEARCH METHOD**

The research design was a correlational design that was procedure in quantitative research in which the researcher measured the degree of relation between two or more variables using the statistical procedure of correlational analysis. In this research design, the variable X related to variable Y, where variable X was vocabulary mastery and variable Y was reading comprehension. The first variable was taken from the students’ score in vocabulary test and the second variable was taken from the students’ score in the reading test.

The population of this research was all the eleventh grade students of SMAN 5 Palu which is consisted of nine classes. They are XI MIPA 1, XI MIPA 2, XI MIPA 3, XI MIPA 4, XI MIPA 5, XI MIPA 6, XI IPS 1, XI IPS 2 and XI IPS 3. The researcher used a purposive sampling method in taking sample that was XI MIPA 6.

In conducting the research, the researcher only used the test as the main instrument that is vocabulary test and reading comprehension test. In this case, the researcher chose
multiple choice test items in gathering the score. It was divided into 25 items for vocabulary
test that included synonym and antonym questions and 25 items for reading comprehension
questions. Each correct answer was given 1 score. The scores of the students were obtained
by using the formula proposed by Sutomo (1985:123)

\[
\text{Individual Score} = \frac{\text{Jumlah Skor Perolehan}}{\text{Jumlah Skor Maximum}} \times 100
\]

To know the students’ mean score, the researcher used the following formula
proposed by Best (1981:225) as follows:

\[
M = \frac{\sum x}{n}
\]

where: M: mean score
\(\sum x\): total score
n: number of subjects

Furthermore, to know the degree of
correlation between students’ achievement in vocabulary and reading comprehension, the
researcher used the Pearson’s Product Moment analysis by Best (1981:248-249) as follows:

\[
\rho_{xy} = \frac{N\sum xy - (\sum x)(\sum y)}{\sqrt{(N\sum x^2 - (\sum x)^2)(N\sum y^2 - (\sum y)^2)}}
\]

where:
\(r\) = product moment correlation
\(\sum xy\) = sum of the product moment of the paired x and y score
\(\sum x\) = sum of the x score
\(\sum y\) = sum of the y score
\(\sum x^2\) = sum of the square x score
\(\sum y^2\) = sum of the square y score

To interpret the result of the correlation analysis, the researcher used standard of
correlation product moments (r) proposed by Best (1981:225) as in the following:
Table 3.8
The Standard of Correlation Product Moment

<table>
<thead>
<tr>
<th>Coefficient (r)</th>
<th>Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0 to 0.20</td>
<td>Negligible</td>
</tr>
<tr>
<td>0.20 to 0.40</td>
<td>Low</td>
</tr>
<tr>
<td>0.40 to 0.60</td>
<td>Moderate</td>
</tr>
<tr>
<td>0.60 to 0.80</td>
<td>Substantial</td>
</tr>
<tr>
<td>0.80 to 1.00</td>
<td>High to very high</td>
</tr>
</tbody>
</table>

In addition, Cohen and Manion (1994) consider the following interpretations given the following size of coefficients about the strength of association between two variables:

- **0.20 –.35:** When correlations range from .20 to .35, there is only a little relationship. This size of a coefficient may be useful to show the interconnection of variables but of little value in correlation studies.

- **0.35 –.65:** When correlations are above .35, they are limited correlation. This typical values used to identify variable membership in the statistical procedure of factor analysis (the intercorrelation of variables with a scale), and many correlation coefficients for bivariate relationships fall into this area.

- **0.66 –.85:** When correlations fall into this range, good prediction can result from one variable to the other. Coefficients in this range would be considered very good.

- **0.86 and above:** Correlations in this range totally have strong or high relation between two variables.

**RESEARCH FINDINGS**

In collecting the data, the researcher gave multiple choice tests to measure the students’ ability in vocabulary mastery and reading comprehension. Both tests were given on March 3rd, 2018. The result of that test can be seen as follows:
Table 4.1  
The Students’ Score in Vocabulary Test

<table>
<thead>
<tr>
<th>No</th>
<th>Initials</th>
<th>Correct Answer</th>
<th>Individual score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MAG</td>
<td>24</td>
<td>96</td>
</tr>
<tr>
<td>2</td>
<td>GC</td>
<td>21</td>
<td>84</td>
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<tr>
<td>3</td>
<td>DSF</td>
<td>20</td>
<td>80</td>
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<td>NTU</td>
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<td>5</td>
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<tr>
<td>6</td>
<td>MR</td>
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<td>88</td>
</tr>
<tr>
<td>7</td>
<td>NSA</td>
<td>23</td>
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<td>23</td>
<td>92</td>
</tr>
<tr>
<td>9</td>
<td>KST</td>
<td>24</td>
<td>96</td>
</tr>
<tr>
<td>10</td>
<td>MFM</td>
<td>25</td>
<td>100</td>
</tr>
<tr>
<td>11</td>
<td>DA</td>
<td>24</td>
<td>96</td>
</tr>
<tr>
<td>12</td>
<td>GPA</td>
<td>22</td>
<td>88</td>
</tr>
<tr>
<td>13</td>
<td>TI</td>
<td>24</td>
<td>96</td>
</tr>
<tr>
<td>14</td>
<td>MR</td>
<td>24</td>
<td>96</td>
</tr>
<tr>
<td>15</td>
<td>RM</td>
<td>24</td>
<td>96</td>
</tr>
<tr>
<td>16</td>
<td>IW</td>
<td>24</td>
<td>96</td>
</tr>
<tr>
<td>17</td>
<td>AM</td>
<td>22</td>
<td>88</td>
</tr>
<tr>
<td>18</td>
<td>AR</td>
<td>22</td>
<td>88</td>
</tr>
<tr>
<td>19</td>
<td>CA</td>
<td>24</td>
<td>96</td>
</tr>
<tr>
<td>20</td>
<td>ARD</td>
<td>23</td>
<td>92</td>
</tr>
<tr>
<td>21</td>
<td>NDA</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td>22</td>
<td>NM</td>
<td>24</td>
<td>96</td>
</tr>
<tr>
<td>23</td>
<td>RAS</td>
<td>23</td>
<td>92</td>
</tr>
<tr>
<td>24</td>
<td>SA</td>
<td>23</td>
<td>92</td>
</tr>
<tr>
<td>25</td>
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<td>24</td>
<td>96</td>
</tr>
<tr>
<td>26</td>
<td>AH</td>
<td>23</td>
<td>92</td>
</tr>
<tr>
<td>27</td>
<td>NA</td>
<td>23</td>
<td>92</td>
</tr>
<tr>
<td>28</td>
<td>SF</td>
<td>21</td>
<td>84</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td><strong>2560</strong></td>
</tr>
</tbody>
</table>

From the data above, the researcher calculated the students’ mean score in vocabulary test. The researcher applied the formula as stated previously, the mean score in vocabulary test is as follows:

\[ M = \frac{2560}{28} = 91 \]

Based on the students’ vocabulary score in table 4.1, the researcher made classification of students’ achievement in vocabulary test as below:
Table 4.2  
Percentage of Students’ Achievement in Vocabulary Test

<table>
<thead>
<tr>
<th>No</th>
<th>Classification</th>
<th>Range Scores</th>
<th>Frequencies</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Excellent</td>
<td>96-100</td>
<td>11</td>
<td>39.28</td>
</tr>
<tr>
<td>2</td>
<td>Very Good</td>
<td>86-95</td>
<td>13</td>
<td>46.42</td>
</tr>
<tr>
<td>3</td>
<td>Good</td>
<td>76-85</td>
<td>4</td>
<td>14.28</td>
</tr>
<tr>
<td>4</td>
<td>Fairly good</td>
<td>66-75</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>Fair</td>
<td>56-65</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>Poor</td>
<td>46-55</td>
<td>0</td>
<td>0</td>
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<tr>
<td>7</td>
<td>Very Poor</td>
<td>36-45</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>28</strong></td>
<td></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

From the classification above, the students who got score above the mean score were 18 students and under the mean score are 10 students. It means the students’ achievement in vocabulary test was classified as very good.
Table 4.3
The Students’ Score in Reading Comprehension Test

<table>
<thead>
<tr>
<th>No</th>
<th>Initials</th>
<th>Correct Answer</th>
<th>Individual score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MAG</td>
<td>25</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>GC</td>
<td>24</td>
<td>96</td>
</tr>
<tr>
<td>3</td>
<td>DSF</td>
<td>24</td>
<td>96</td>
</tr>
<tr>
<td>4</td>
<td>NTU</td>
<td>23</td>
<td>92</td>
</tr>
<tr>
<td>5</td>
<td>YM</td>
<td>25</td>
<td>100</td>
</tr>
<tr>
<td>6</td>
<td>MR</td>
<td>25</td>
<td>100</td>
</tr>
<tr>
<td>7</td>
<td>NSA</td>
<td>24</td>
<td>96</td>
</tr>
<tr>
<td>8</td>
<td>NS</td>
<td>24</td>
<td>96</td>
</tr>
<tr>
<td>9</td>
<td>KST</td>
<td>24</td>
<td>96</td>
</tr>
<tr>
<td>10</td>
<td>MFM</td>
<td>25</td>
<td>100</td>
</tr>
<tr>
<td>11</td>
<td>DA</td>
<td>24</td>
<td>96</td>
</tr>
<tr>
<td>12</td>
<td>GPA</td>
<td>25</td>
<td>100</td>
</tr>
<tr>
<td>13</td>
<td>TI</td>
<td>24</td>
<td>96</td>
</tr>
<tr>
<td>14</td>
<td>MR</td>
<td>24</td>
<td>96</td>
</tr>
<tr>
<td>15</td>
<td>RM</td>
<td>24</td>
<td>96</td>
</tr>
<tr>
<td>16</td>
<td>IW</td>
<td>24</td>
<td>96</td>
</tr>
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<td>17</td>
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<td>24</td>
<td>96</td>
</tr>
<tr>
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<td>AR</td>
<td>25</td>
<td>100</td>
</tr>
<tr>
<td>19</td>
<td>CA</td>
<td>24</td>
<td>96</td>
</tr>
<tr>
<td>20</td>
<td>ARD</td>
<td>25</td>
<td>100</td>
</tr>
<tr>
<td>21</td>
<td>NDA</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td>22</td>
<td>NM</td>
<td>25</td>
<td>100</td>
</tr>
<tr>
<td>23</td>
<td>RAS</td>
<td>25</td>
<td>100</td>
</tr>
<tr>
<td>24</td>
<td>SA</td>
<td>24</td>
<td>96</td>
</tr>
<tr>
<td>25</td>
<td>AF</td>
<td>24</td>
<td>96</td>
</tr>
<tr>
<td>26</td>
<td>AH</td>
<td>24</td>
<td>96</td>
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<tr>
<td>27</td>
<td>NA</td>
<td>24</td>
<td>96</td>
</tr>
<tr>
<td>28</td>
<td>SF</td>
<td>24</td>
<td>96</td>
</tr>
</tbody>
</table>

Total  | 2704

Based on the students’ score in reading comprehension test, the researcher calculated the students’ mean score as in the following

\[ M = \frac{2704}{28} = 96 \]

From the students’ reading comprehension score as in Table 4.3, the researcher made classification of students’ achievement in reading comprehension test as below.
Table 4.4  
Percentage of Students’ Achievement in Reading Comprehension Test

<table>
<thead>
<tr>
<th>No</th>
<th>Classification</th>
<th>Range Scores</th>
<th>Frequencies</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Excellent</td>
<td>96-100</td>
<td>26</td>
<td>92.85</td>
</tr>
<tr>
<td>2</td>
<td>Very Good</td>
<td>86-95</td>
<td>1</td>
<td>3.57</td>
</tr>
<tr>
<td>3</td>
<td>Good</td>
<td>76-85</td>
<td>1</td>
<td>3.57</td>
</tr>
<tr>
<td>4</td>
<td>Fairly good</td>
<td>66-75</td>
<td>0</td>
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</tr>
<tr>
<td>5</td>
<td>Fair</td>
<td>56-65</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>Poor</td>
<td>46-55</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>Very Poor</td>
<td>36-45</td>
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<tr>
<td></td>
<td>Total</td>
<td></td>
<td>28</td>
<td>100</td>
</tr>
</tbody>
</table>

Based on the result of students’ score in reading comprehension test, the researcher made the classification of the students’ achievement in reading test was Excellent where almost students who get score above the mean score are 26 students and the students who get score under the mean score are only 2 students.

It has been mentioned before, the data were gained from the students’ scores of vocabulary and reading comprehension test. The researcher analyzed those scores by using Pearson product moment correlation formula to find out the correlation between students’ achievement in vocabulary and reading comprehension. The result was as follow:
Table 4.5
The Score of Vocabulary Mastery and Reading Comprehension

<table>
<thead>
<tr>
<th>No</th>
<th>Initials</th>
<th>X</th>
<th>Y</th>
<th>$x^2$</th>
<th>$y^2$</th>
<th>Xy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MAG</td>
<td>96</td>
<td>100</td>
<td>9216</td>
<td>10000</td>
<td>9600</td>
</tr>
<tr>
<td>2</td>
<td>GC</td>
<td>84</td>
<td>96</td>
<td>7056</td>
<td>9216</td>
<td>8064</td>
</tr>
<tr>
<td>3</td>
<td>DSF</td>
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<td>96</td>
<td>6400</td>
<td>9216</td>
<td>7680</td>
</tr>
<tr>
<td>4</td>
<td>NTU</td>
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<td>7744</td>
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<td>8096</td>
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<tr>
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<td>100</td>
<td>7744</td>
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<td>234784</td>
<td>261536</td>
<td>247440</td>
</tr>
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</table>

$N = 28$

$\Sigma X = 2560$

$\Sigma Y = 2704$

$\Sigma XY = 247440$

Later, the researcher put the result of the test in the formula to measure the correlation between the two variables using the formula of Pearson product moment correlation. It can be seen as follows:
From the calculation above, it was stated that the correlation between students’ achievement in vocabulary and reading comprehension of the eleventh grade students of SMAN 5 Palu was 0.399. The criterion of interpretation coefficient r was low or according to Cohen and Manion (1994) states that when the correlation above 0.35 means there has limited correlation.

After the researcher found the correlation between the two variables was 0.399, she used the 5% (0.05) level in the critical value of Pearson Correlation Coefficient to know the value of the \( r_{table} \) to determine the degree of freedom (df), the researcher calculated it as follows:

\[
df = N-2 \\
df = 28-2 \\
= 26
\]
The value of $r_{table}$ at significance level of 0.05 and degree of freedom (df)= 26 was 0.388. In other words, the $r_{counted}$ was higher than $r_{table}$. It means that there was a correlation between students’ achievement in vocabulary and reading comprehension.

In addition, to make the result accurately, the researcher also used the program of IBM SPSS Statistic Version 21 to find out the correlation between students’ vocabulary mastery and reading comprehension. The result can be seen below:

**Table 4.6**
The Correlation between Vocabulary Mastery and Reading Comprehension Using the Program of IBM SPSS version 21

<table>
<thead>
<tr>
<th></th>
<th>Vocabulary</th>
<th>Reading</th>
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<td><strong>Vocabulary</strong></td>
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<td></td>
<td>Sig. (2-tailed)</td>
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<tr>
<td></td>
<td>N</td>
<td>28</td>
</tr>
<tr>
<td><strong>Reading</strong></td>
<td>Pearson Correlation</td>
<td>.399*</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>28</td>
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</tbody>
</table>

**Case Processing Summary**

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<tbody>
<tr>
<td>Total Cases</td>
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<tr>
<td>Excluded Cases</td>
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<td>Forecasted Cases</td>
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<tr>
<td>Newly Created Cases</td>
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</table>

**The Scatter Diagram**
From the result of SPSS Program, the researcher also found the correlation between the two variables was 0.399 that classified as low positive correlation. It was also drawn in the diagram above.

**DISCUSSION**

The researcher used test as the instrument in gathering data. The researcher collected the data by giving the students multiple choice tests of vocabulary and reading comprehension questions. The researcher intended to know the correlation between vocabulary mastery and reading comprehension from the result of the test.

Based on the calculation using the formula of Pearson Product Moment, the correlation between vocabulary mastery and reading comprehension $r_{\text{counted}}$ was 0.399. While the value of $r_{\text{table}}$ at significant level of 0.05 and degree of freedom (df)= 26 was 0.388. From that result, $r_{\text{counted}}$ was higher than $r_{\text{table}}$ which means there is a positive correlation between vocabulary mastery and reading comprehension. Vocabulary has positive contribution in reading comprehension. The large size of vocabulary determines the students’ comprehension in predicting the meaning of words in reading. It is proved in this research where the students who had very well achievement in vocabulary test also had the better comprehension in reading test. To achieve a good comprehension in reading, the students need a lot of vocabulary to be mastered. Vocabulary is merely than a list of words. Some words may appear to be simple to refer to one to thing but some words may have more than one meaning, it may be changed depends on the words that they are attached. Therefore, in mastering vocabulary, the students are not enough only to know the meaning of the word, but they must understand the word when it is applied in a context; In what patterns the word occurred, what words or types of words be expected before and after the word.
In this research, not only vocabulary that has contribution in reading, but reading also has contribution in vocabulary growth. The more students read the more vocabulary they acquire. Reading does not simply involve finding information on the text itself. Rather, it is a process of working with the text. In other words, reading involves the process of perceiving how written symbols come true with one’s spoken language and the process of making sense of words, sentences, and text. Therefore, through reading, students try to develop their understanding of the word occurred in the text.

Based on the result of the vocabulary test, the researcher found 46.42% of the students got score 86-95. From the result of vocabulary test, the students’ mastery in vocabulary was classified very well. While, based on the reading test, the researcher found 92.85% of the students got score 96-100. From the result of reading test, the students’ comprehension in reading was classified excellent.

There are some reasons why students’ are better in reading comprehension than vocabulary test in this research. The first reason, from the researcher observation when she conducted her research, the students did the reading test by using scanning technique. They read the text rapidly for specific information to find the answer. They did not read the text at all but they were only looking for the information related to the question. The second reason, the students understood the questions very well therefore they are easier to find out the answer from the text, even though they did not know the meaning of each vocabulary occurred in the text. The third reason, all questions in reading test were literal questions. In literal questions, the information is explicitly stated in the text. They did not need to draw or interpret the answer based on their prior knowledge. Therefore, the students easily found the answer from the text. For the example, “Who is George Lucas?”, the answer is filmmaker that is because in the text, George Lucas is stated explicitly as a filmmaker.
CONCLUSION

After analyzing the data that the researcher obtained from the test, the researcher came to the conclusion. The researcher found that the correlation between the vocabulary mastery and reading comprehension was 0.399. While the value of $r_{\text{table}}$ at significance level of 0.05 and degree of freedom (df)= 26 was 0.388. In other words, the $r_{\text{counted}}$ was higher than $r_{\text{table}}$. It means that there is a correlation between students’ achievement in vocabulary mastery and reading comprehension and the alternative hypothesis (Ha) is accepted. From that result, the researcher concluded that reading comprehension depends on vocabulary knowledge and vice versa. The more students read the more vocabulary they acquire. And the more vocabulary they know, the more fluent they become in reading.

REFERENCES


