# CHAPTER IV
# RESEARCH FINDINGS AND DISCUSSION

## A. Profile of School

SMP N 2 Gringsing Batang is a developing school that was found in 1990. It is located on Jalan Raya Surodadi Gringsing Batang, Phone (0294) 642113 Post Code 51281. This Junior High School was built in a strategic area near the main street of the district. The total area of this school was 22.270 $m^2$.

Now, SMP N 2 Gringsing Batang is headed by Mr. Waluyo, S.Pd and Mr. Aryatmono Siswandi, S.Pd as the vice headmaster, with twenty three teachers and five officials.

Study activities in this school started at 07.00 A.M up to 13.00 P.M, except Friday going home at 11.00 A.M. Especially for Saturday, the students get workshop class for some hours, where they are equipped with some skills like music, art, sewing, cooking, and etc. These classes started at 09.00 A.M after the regular class. Beside it, there are also additional activities for covering the study such as English class, Mathematics and Science class in every Monday, Wednesday and Thursday after teaching and learning process. Actually this class was held for the ninth grade students to prepare their final examination.

For the other students' skill improvement, SMP N 2 Gringsing Batang gives opportunity to all of students for developing their skills in some extracurricular activities where the students will choose the activity that they want to join in like PRAMUKA, PMR, Volley ball, Football and others.

SMP N 2 Gringsing Batang was also completed with facilities and equipment, in order to support students' knowledge. For the sport activities, this school is facilitated with football court, basketball area, tennis court, and some sport equipment. There are also school library that provides various lesson books for teaching and learning process, and school laboratory for scientific activities. But, it has not language laboratory that is important for improving English especially in speaking and listening. The teaching and learning process in SMP N 2 Gringsing Batang is like the other junior high school, where the teacher as the

central of learning process, and still use conventional method in teaching with textbook and discussion.

## B. Description of The Result of Research

As it has been mentioned in chapter one, the researcher used the field research. She held field research by taking the scores of 40 students as an object of the research and analyzed those scores in order to find out whether there is any correlation between students' achievement vocabulary and their reading ability by using the Pearson *r* formula. So, in total there are 40 scores because the samples had 2 set of scores. The first score is vocabulary that consists of 20 items and the second one is reading comprehension ability that also consists of 20 items, the scoring is 5 for each correct answer and 0 for the wrong answer. (The form of the test and the result score can be seen in appendix).

In this test, the researcher collected pieces of information from many independent responses, then add them together in some way and report a number or letter that claimed mean something about the result. Accordingly, mark of good task design is for range to be interlinked the data variables.

The data in this research were derived from the test result, as follow:

## 1. Result of The Test of instrument

### a. Validity

The test of validity used the formula as was explained in chapter III. Forexample the question no.1 (vocabulary), the price of $r_{xy} = 0.665$ and $r_{table}$ is 0.444, with n = 40. After getting $r_{xy}$, the price of $r_{xy,}$ is compared with the price of $r_{xy}$, if $r_{xy} > r_{table}$ so the item tested is valid. It means that the instrument can be used as equipment for collecting data. (See Appendix)

### b. Reliability

To test reliability used the formula that was explained in chapter III. After the calculation, for example the try out test of vocabulary get $r_{11} = 0.70549$. It means that the coefficient of reliability is on the high reliability (reliable). For the complete calculation can be seen on appendix.

### c. Distinguishing feature

The calculation used the formula of distinguishing feature and classification of difference power as was explained at chapter III. From the calculation, the question no.1 (vocabulary) the price of D is 0.500. Because discrimination index more than 0.30, so the question is accepted. For the complete calculation can be seen in appendix.

### d. Difficulty level

The test of difficulty level used the formula that was explained in chapter III. For example question no.1 (vocabulary), the price of difficulty level is 80% (Easy), question no.2 70% (medium), and question no.3 60% (medium). For the complete calculation can be seen in appendix.

### 2. Result of The Research

### a. Students' vocabulary score

The students' vocabulary score is as follows:

Table 4.1

Students' Vocabulary Score

| No. | Code | Vocabulary Score | KKM |
|-----|------|------------------|-----|
| 1. | E.1 | 75 | √ |
| 2. | E.2 | 65 | √ |
| 3. | E.3 | 60 | √ |
| 4. | E.4 | 80 | √ |
| 5. | E.5 | 50 | - |
| 6. | E.6 | 75 | √ |
| 7. | E.7 | 80 | √ |
| 8. | E.8 | 65 | √ |
| 9. | E.9 | 35 | - |
| 10. | E.10 | 70 | √ |
| 11. | E.11 | 65 | √ |
| 12. | E.12 | 65 | √ |
| 13. | E.13 | 70 | √ |
| 14. | E.14 | 65 | √ |
| 15. | E.15 | 70 | √ |
| 16. | E.16 | 70 | √ |
| 17. | E.17 | 60 | √ |
| 18. | E.18 | 70 | √ |
| 19. | E.19 | 70 | √ |

| No. | Code | Score | |
|-----|------|-------|---|
| 20. | E.20 | 75 | √ |
| 21. | E.21 | 30 | - |
| 22. | E.22 | 55 | - |
| 23. | E.23 | 50 | - |
| 24. | E.24 | 50 | - |
| 25. | E.25 | 70 | √ |
| 26. | E.26 | 60 | √ |
| 27. | E.27 | 60 | √ |
| 28. | E.28 | 55 | - |
| 29. | E.29 | 45 | - |
| 30. | E.30 | 20 | - |
| 31. | E.31 | 45 | - |
| 32. | E.32 | 50 | - |
| 33. | E.33 | 35 | - |
| 34. | E.34 | 55 | - |
| 35. | E.35 | 50 | - |
| 36. | E.36 | 55 | - |
| 37. | E.37 | 50 | - |
| 38. | E.38 | 60 | √ |
| 39. | E.39 | 55 | - |
| 40. | E.40 | 30 | - |
| **N=40** | | ∑x=2.315 | 22 |

The following calculation of the vocabulary test is:

$$M = \frac{\sum X}{N}$$

$$M = \frac{2315}{40}$$

$$M = 57.875$$

Where:

M           = the mean

$\sum X$           = the sum of all scores

N           = the total number of objects

From the calculation above, we can conclude that the vocabulary score of SMP N 2 Gringsing Batang in the academic year of 2011/2012 is 57.875

Table 4.2

Table of students' vocabulary mastery

| Grade | Interval | Frequency | Percentage | Classification |
|-------|----------|-----------|------------|----------------|
| A | 81 – 100 | - | | Excellent |
| B | 61 – 80 | 17 | 42.5 % | Good |
| C | 41 – 60 | 18 | 45 % | Fair |
| D | 21 – 40 | 4 | 10 % | Poor |
| E | 0 - 20 | 1 | 2.5 % | Failed |

There were twenty multiple choice questions in vocabulary test. The students need to answer the test correctly. There were 22 students pass the minimum graduation criteria. The highest score was 80 and there were 2 students who get this score. Based on the calculation of mean the average score is 57.875. It means that of the eighth grade student of SMPN 2 Gringsing Batang is fair.

**b. Students' reading score**

The students' reading score is as follows:

Table 4.3

Students' Reading Score

| No. | Code | Reading Score | KKM |
|-----|------|---------------|-----|
| 1. | E.1 | 70 | √ |
| 2. | E.2 | 65 | √ |
| 3. | E.3 | 65 | √ |
| 4. | E.4 | 75 | √ |
| 5. | E.5 | 65 | √ |
| 6. | E.6 | 75 | √ |
| 7. | E.7 | 75 | √ |
| 8. | E.8 | 70 | √ |
| 9. | E.9 | 65 | √ |
| 10. | E.10 | 80 | √ |
| 11. | E.11 | 70 | √ |
| 12. | E.12 | 75 | √ |
| 13. | E.13 | 70 | √ |
| 14. | E.14 | 80 | √ |
| 15. | E.15 | 70 | √ |
| 16. | E.16 | 60 | √ |

| | | | |
|---|---|---|---|
| 17. | E.17 | 70 | √ |
| 18. | E.18 | 75 | √ |
| 19. | E.19 | 70 | √ |
| 20. | E.20 | 70 | √ |
| 21. | E.21 | 65 | √ |
| 22. | E.22 | 70 | √ |
| 23. | E.23 | 60 | √ |
| 24. | E.24 | 60 | √ |
| 25. | E.25 | 70 | √ |
| 26. | E.26 | 65 | √ |
| 27. | E.27 | 60 | √ |
| 28. | E.28 | 75 | √ |
| 29. | E.29 | 60 | √ |
| 30. | E.30 | 50 | - |
| 31. | E.31 | 60 | √ |
| 32. | E.32 | 60 | √ |
| 33. | E.33 | 45 | - |
| 34. | E.34 | 50 | - |
| 35. | E.35 | 60 | √ |
| 36. | E.36 | 70 | √ |
| 37. | E.37 | 40 | - |
| 38. | E.38 | 55 | - |
| 39. | E.39 | 45 | - |
| 40. | E.40 | 50 | - |
| **N=40** | | ∑y=2.585 | 33 |

To facilitate the measurement of students' reading test, the raw scores are converted in the standard scores using the percentage correction formula as stated in chapter three and the result can be seen in the next table. To calculate the mean score of the reading test by using the following formula:

$$M = \frac{\sum X}{N}$$

$$M = \frac{2585}{40}$$

$$M = 64.625$$

Where:

M                    = the mean

$\sum X$             = the sum of all scores

N          = the total number of objects

From the calculation above, we can conclude that the reading score of SMP N 2 Gringsing Batang in the academic year of 2011/2012 is 64.625

Table 4.4

Table of students' reading mastery

| Grade | Interval | Frequency | Percentage | Classification |
|-------|----------|-----------|------------|----------------|
| A | 81 – 100 | - | - | Excellent |
| B | 61 – 80 | 25 | 62.5 % | Good |
| C | 41 – 60 | 14 | 35 % | Fair |
| D | 21 – 40 | 1 | 2.5 % | Poor |
| E | 0 - 20 | - | - | Failed |

There were twenty multiple choice questions in reading test. The students need to answer the test correctly. The highest score was 80 and there were 2 students who get this score. Based on the calculation of mean the average score is 64.625. In this test of reading, there were 33 students who passed the minimum graduation criteria. It means that of the eighth grade student of SMPN 2 Gringsing Batang is good.

## C. Data Analysis

## 1. Normality tests

### a. Variable X (Students' achievement in vocabulary)

1) Hypothesis

$H_o$ = the data has a normal distribution

$H_1$ = the data has not a normal distribution.

2) Criteria

Hypothesis is accepted if $H_o$, the probability value > 0.05

3) Test of Hypothesis

The frequency of students' vocabulary score is as follows:

Table 4.5

Frequency Table of Students' Vocabulary Score

| Score | Frequency | Percent | Cumulative percent |
|-------|-----------|---------|--------------------|
| 20 | 1 | 2.5% | 2.5% |
| 30 | 2 | 5.0% | 7.5% |
| 35 | 2 | 5.0% | 12.5% |
| 45 | 2 | 5.0% | 17.5% |
| 50 | 6 | 15.0% | 32.5% |
| 55 | 5 | 12.5% | 45.0% |
| 60 | 5 | 12.5% | 57.5% |
| 65 | 5 | 12.5% | 70.0% |
| 70 | 7 | 17.5% | 87.5% |
| 75 | 3 | 7.5% | 95.0% |
| 80 | 2 | 5.0% | 100.0% |
| Total | 40 | 100.0% | |

To test the normality of the data, the researcher used One Sample K-S (Kolmogorov Smirnov) Test from SPSS program, with result as follows:

**Descriptive Statistics**

| | N | Mean | Std. Deviation | Minimum | Maximum |
|---|---|------|----------------|---------|---------|
| VAR00001 | 40 | 57.88 | 14.272 | 20 | 80 |

**One-Sample Kolmogorov-Smirnov Test**

| | | VAR00001 |
|---|---|---|
| N | | 40 |
| Normal Parameters[a] | Mean | 57.88 |
| | Std. Deviation | 14.272 |
| Most Extreme Differences | Absolute | .116 |
| | Positive | .073 |
| | Negative | -.116 |
| Kolmogorov-Smirnov Z | | .735 |
| Asymp. Sig. (2-tailed) | | .653 |
| Monte Carlo Sig. (2-tailed) | Sig. | .600[c] |
| | 99% Confidence Interval    Lower Bound | .400 |
| | Upper Bound | .800 |

Based on the data above, it can be seen from the significant column (Asymp. Sig (2-tailed)) shows that the price is 0.653 or the probability value is more than 0.05. If the probability value > 0.05, so $H_o$ is accepted. It means the data has a normal distribution. So, it can be concluded that the data of the vocabulary score has a normal distribution.

**b. Variable Y (Students' reading ability)**

1) Hypothesis

$H_o$ = the data has a normal distribution

$H_1$ = the data has not a normal distribution

2) Criteria

Hypothesis is accepted if $H_o$, the probability value > 0.05

3) Test of Hypothesis

The frequency of students' reading score is as follows:

Table 4.6

Frequency Table of Students' Reading Score

| Score | Frequency | Percent | Cumulative percent |
|-------|-----------|---------|--------------------|
| 40 | 1 | 2.5% | 2.5% |
| 45 | 2 | 5.0% | 7.5% |
| 50 | 3 | 7.5% | 15.0% |
| 55 | 1 | 2.5% | 17.5% |
| 60 | 8 | 20.0% | 37.5% |
| 65 | 6 | 15.0% | 52.5% |
| 70 | 11 | 27.5% | 80.0% |
| 75 | 6 | 15.0% | 95.0% |
| 80 | 2 | 5.0% | 100.0% |
| Total | 40 | 100.0% | |

To test the normality of the data, the researcher used One Sample K-S (Kolmogorov Smirnov) Test from SPSS program, with result as follows:

**Descriptive Statistics**

| | N | Mean | Std. Deviation | Minimum | Maximum |
|---|---|------|----------------|---------|---------|
| VAR00002 | 40 | 64.62 | 9.766 | 40 | 80 |

**One-Sample Kolmogorov-Smirnov Test**

| | | VAR00002 |
|---|---|---|
| N | | 40 |
| Normal Parameters[a] | Mean | 64.62 |
| | Std. Deviation | 9.766 |
| Most Extreme | Absolute | .184 |
| Differences | Positive | .094 |
| | Negative | -.184 |
| Kolmogorov-Smirnov Z | | 1.164 |
| Asymp. Sig. (2-tailed) | | .133 |

Based on the data above, it can be seen from the significant column (Asymp. Sig (2-tailed)) shows that the price is 0.133 or the probability value is more than 0.05. If the probability value > 0.05, so $H_o$ is accepted. It means the data has a normal distribution. So, it can be concluded that the data of the reading score has a normal distribution.

2. **Hypothesis Analysis**

   a. The coefficient correlation of students' achievement in vocabulary and reading ability of SMP N 2 Gringsing Batang is as follows:

$$\mathbf{r}_{xy} = \frac{N \sum xy - (\sum x)(\sum y)}{\sqrt{\{N\sum x^2 - (\sum x)^2\}\{N\sum y^2 - (\sum y)^2\}}}$$

$$\mathbf{r}_{xy} = \frac{40\,(153,075) - (2315)(2585)}{\sqrt{\{40(141,925) - 5,359,225\}\{40(170,775) - 6,682,225\}}}$$

$$\mathbf{r}_{xy} = \frac{6,123,000 - 5,984,275}{\sqrt{\{5,677,000 - 5,359,225\}\{6,831,000 - 6,682,225\}}}$$

$$\mathbf{r}_{xy} = \frac{138,725}{\sqrt{(317,775)(148,775)}}$$

$$\mathbf{r}_{xy} = \frac{138,725}{\sqrt{47,276,975,625}}$$

$$\mathbf{r}_{xy} = \frac{138,725}{217,432.69}$$

$$\mathbf{r}_{xy} = 0.638$$

The correlation coefficient of the two variables is 0.638, in order to know whether this correlation is coefficient or not, it is necessary to find out its significance. The significance level used in this research is 5% (0.05). It can be concluded that there is correlation between both variables. The correlation coefficient with SPSS program can be seen from the table as follows:

**Correlations**

|  |  | reading | Vocabulary |
|---|---|---|---|
| Reading | Pearson Correlation | 1 | .638[**] |
|  | Sig. (2-tailed) |  | .000 |
|  | N | 40 | 40 |
| Vocabulary | Pearson Correlation | .638[**] | 1 |
|  | Sig. (2-tailed) | .000 |  |
|  | N | 40 | 40 |

**. Correlation is significant at the 0.05 level (2-tailed).

b. The coefficient correlation between students' achievement in vocabulary (X) and reading ability (Y) is 0.638. The level of influence is as follows:

Table 4.7

The "**r**" Product Moment Table

| Product Moment (r) | Interpretation |
|---|---|
| 0.00 – 0.19 | Very low |
| 0.20 – 0.39 | Low |
| 0.40 – 0.69 | Moderate |
| 0.70 – 0.89 | High |
| 0.90 – 1.00 | Very High |

In the table above, the correlation coefficient is on the third column, that is moderate because it lies between 0.40 – 0.69. So, it can be concluded that the significance level variable of students' achievement in vocabulary and reading ability is moderate.

c. Looking for the regression similarity

$\hat{Y} = ax + K$

From the data, it is known that:

$$\sum xy = 153,075$$

$$\sum x^2 = 141,925$$

$$\sum y^2 = 170,775$$

1) $\frac{\sum xy}{\sum x^2} = \frac{153,075}{141,925} = 1.078$

   So, y = 1.078 $x$

   $\hat{Y} = \frac{\sum Y}{N} = \frac{2585}{40} = 64.625$

   $\hat{X} = \frac{\sum X}{N} = \frac{2315}{40} = 57.875$

   So, the regression similarity was:

   Y = $ax$ or Y - $\bar{Y} = a$ (X - $\bar{X}$ )

   Y – 64.625 = 1.078 (X – 57.875)

   Y – 64.625 = 1.078X – 62.390

          Y = 1.078X (- 62.390 + 64.625)

          Y = 1.078X + 2.235

   From the calculation above, the regression similarity was:

   Y = 1.078X + 2.235

2) Variant analysis of regression line

   $JK_{reg} = \frac{(\sum xy)^2}{\sum x^2} = \frac{(153,075)^2}{141,925} = \frac{23,431,955,625}{141,925} = 165,100$

   $JK_{res} = \sum y^2 \frac{(\sum xy)^2}{\sum x^2} = 170,775 - 165,100 = 5,675$

   db $_{reg} = 1$

db $_{res}$ = N − 2 = 40 − 2 = 38

$$RK_{reg} = \frac{JK_{reg}}{db_{reg}} = \frac{165,100}{1} = 165,100$$

$$RK_{res} = \frac{JK_{res}}{db_{res}} = \frac{5,675}{38} = 149.342$$

$$F_{reg} = \frac{RK_{reg}}{RK_{reg}} = \frac{165,100}{149.342} = 1,105$$

To know the result of the regression analysis computation above, it could be seen on the summary of regression analysis table as followed:

Table 4.8

The Summary of Regression Analysis

| Variant Resource | Dk | JK | RK | $F_{reg}$ | $F_{table}$ 0. 05 | Kriteria |
|---|---|---|---|---|---|---|
| Regression | 1 | 165,100 | 165,100 | | | |
| Residual | 38 | 5,675 | 149.342 | 1,105 | 251 | Sig |
| Total | 39 | 170,775 | | | | |

d.  Final Analysis

After getting $F_{reg}$, the next step is comparing the price of $F_{reg}$ with the F value on table value. The table value is 5%.

1)  It is significant if $F_{reg}$> Ft 5%. There is positive influence of students' achievement in vocabulary and their reading ability.

2)  It is not significant if $F_{reg}$< Ft 5%. There is no positive influence of students' achievement in vocabulary and their reading ability.

From the hypothesis test above, it was known that $F_{reg}$ = 1,105 > $F_{table}$ = 251 (0.05), it meant the hypothesis was accepted. So there was positive influence between students' achievement in vocabulary and reading ability.

**D. Discussion of The Research Findings**

**1. Students' achievement in vocabulary**

The result of the research shows that students' vocabulary score is fair. It can be seen from 22 students of 40 students who pass the test with the good results. The percentage of these score is 55%; it means that students' vocabulary score of the eight grade students of SMP N 2 Gringsing Batang is fair.

**2. Students' reading ability**

The result of the research shows that students' reading score is good. It can be seen from 33 students of 40 students who pass the test with the good results. The percentage of these score is 82.5%; it means that students' vocabulary score of the eight grade students of SMP N 2 Gringsing Batang is good.

**3. The influence of students' achievement in vocabulary and reading ability**

The researcher has mentioned the hypothesis before from the hypothesis; the researcher has criteria of test hypothesis:

If $r_{xy} > r_{table}$, the alternative hypothesis (Ha) is accepted and Null Hypothesis (Ho) is rejected. It means there is correlation between students' achievement in vocabulary and reading ability.

If $r_{xy} < r_{table}$ the alternative hypothesis (Ha) is rejected and Null Hypothesis (Ho) is accepted. It means there is no correlation between students' achievement in vocabulary and reading ability.

According to the hypothesis, it could be proved that the influence of students' achievement in vocabulary and reading ability showed the significant result in 5% significance. Thus, hypothesis was accepted.

From the coefficient test above, could be known that $r_{xy}= 0.638$. Because $r_{xy}= 0.638 > r_t (5\%) = 0.312$, it meant significant. It can be concluded that there is significant influence of students' achievement in vocabulary to reading ability at the eighth grade students of SMP N 2 Gringsing Batang in the Academic Year of 2011/2012. Coefficient $r^2 = 0.638^2 = 0.407$. Then, to found the percentages of contribution from the students' achievement in vocabulary to the students' reading ability is $r^2$ x 100% = 40.7%

This case showed that the contribution of students' achievement in vocabulary to reading ability is 40.7%. The contribution of variable X to variable Y is not big, because, 59.3% are influenced by other factors. Other factors are influenced by the hidden variable and it did not discuss in this research.

Student's achievement: the quality and quantity of a student's work. According Noehi Nasution, students' achievement is influenced by *raw input, environmental input* and *instrumental input.* In the learning process, raw input is students. As raw input, students have different characteristic (physiology or psychology). Physiology is included physiological condition and the five sense conditions. Psychology is included interest, intelligence, talent, ability, motivation and aptitude. Besides that, students' achievement is influenced by environmental input and instrumental input. Environmental input is included environmental factor, family, natural environment, social and culture. Instrumental input is included curriculum, program, teacher, facility and medium. These factors can influence students' achievement in the learning process.

From the result of the correlation between students' achievement in vocabulary and reading ability, it was known that $F_{reg}$= 1,105 > $F_{table}$ (5%) = 251. It meant significant. So, there was significant influence between students' achievement in vocabulary and reading ability.

## E.  Limitation of The Research

The researcher realizes that this research had not been done optimally. There were constrains and obstacles faced during the research process. Some limitations of this research are:

1.  The research is limited at SMPN 2 Gringsing Batang. So that when the same research will be gone in other school, it is still possible to get different result.
2.  The implementation of the research process was less smooth; this was more due to lack of experience and knowledge of the researcher.

Considering all those limitations, there is a need to do more research about teaching English in reading and vocabulary. So that, the more optimal result will be gained.