

CHAPTER III

RESEARCH METHOD

This research applied a correlative research. “the purpose of a correlation coefficient is show how much two variables ‘go together’ or covary. Ideally, the variables have a ratio level of measurement (some use variables at the interval level).”⁶⁴

Thus, a correlative research had a goal of finding wheather there was a correlation between one variable and another or not. This research had a goal of finding wheather there was a correlation between the English vocabulary mastery and writing ability or not. This chapter presented the description of research methodology that was applied in this research.

A. Research Design

In this study, the writer used quantitative Correlation method. Correlation research methods was used to assess relationships and patterns of relationship among variables in a single group of subject.⁶⁵

According to Arikunto research design was plan about how to collect data so that the research can do economically and matching with objectives of the study.⁶⁶ Thus, research design was a plan of collecting and analyzing data in order to match the research objectives. It stated that research design was a guide for the researcher to conduct a scientific research. It gave the researcher

⁶⁴ William Lawrence Neuman, *Social Research Method: Qualitative and Quantitative Approaches*, United States of America: Library of Congress Cataloging in Publication Data, 2000, p. 331.

⁶⁵ Donal Ary, Lucy Chesar Jacob, Chris Sorensen, Asghar Razavieh. *Introduction to Research in Education, (English Edition)*. Canada: Wadsworth Cengage Learning. 2010. p.129.

⁶⁶ S. Nasution, *Methode Research*, Bandung: Jemmars, 1982, p. 31.

a description of in what ways data was collected, coded, and analyzed. It was a well-organized plan of achieving the research objectives.

This research promotes a hypothesis. The were alternative hypothesis; there was any correlation between the English vocabulary mastery and writing students' ability at SMP Muhammadiyah Palangka Raya, and null hypotheses; there was no any correlation between the English vocabulary mastery and writing students' ability at SMP Muhammadiyah Palangka Raya. The hypothesis offered two variables; X variable and Y variable. X variable was identified as the English vocabulary mastery and Y variable was identified as the writing ability. Both the English vocabulary mastery and writing ability were measured through test. The result of the tests was used to examine wheather there was a significant correlation between the English Vocabulary mastery and writing students' ability at SMP Muhammadiyah Palangka Raya or not.

B. Population and Sample

1. Population

Population was one of elements of research methodology.

Population can be defided as follows; according to Ary "a population was defided as all members of any well defined class of people, events, or objects."⁶⁷ Other statement about population was "some population or groups of subjects are not capable of giving true voluntary invormed consent. They lacked the necessary competency or may be indirectly

⁶⁷ Donald Ary, *Introduction To Research In Education*, America: Library of Congress Cataloging in Publication Data, 1979, p. 129.

coerced”.⁶⁸ Thus population was the object of research from which the researcher may collect data. Population provides the researcher with information or data will be used to solve the research problems.

According to Arikunto, if the subject of research less than 100 subjects, it was taken all subjects. So the research was including the research of population.⁶⁹ This research used the eighth grade students of SMP Muhammadiyah Palangka Raya as the population. The total number of population 109 students. The type of test were vocabulary test using multiple choice and writing test about recount text.

Tabel 3.1
The Number of Population⁷⁰

Name of school	Class	Total
SMP Muhammadiyah Palangka Raya	VIII-1	23
	VIII-2	21
	VIII-3	22
	VIII-4	22
	VIII-5	21
TOTAL		109

2. Sample

Sample was a part of the population which is investigated.⁷¹ If the research subject less than 100 was better to take all of it. So, it was

⁶⁸ William Lawrence Neuman, *Social Research Method: Qualitative and Quantitative Approaches*, p. 97.

⁶⁹ Arikunto Suharsimi, *Prosedur Penelitian: Suatu Pendekatan Praktek*: Edisi Revisi V, Jakarta: PT. Rineka Cipta, 2002, p. 112.

⁷⁰ From Data List of English Studens on AcademicYear 2016

⁷¹ Arikunto Suharsimi, *Prosedur Penelitian: Suatu Pendekatan Praktek*: Edisi Revisi V, Jakarta: PT. Rineka Cipta, 2006, p. 130.

regarded as a population research. But if the research subject more than 100, the research can take 10-15% or 20-25% from the population.⁷²

In this research, the writer choosed two classes namely : VIII-3 and VIII-4 from the total population where the students consisted of 44 students. And the writer used the random sampling technique to get sample.

C. Research Instrument of the Study

Data was one of essential components in a research activity. The accurate data is the starting point to conduct a research. To collect data, it was necessary for the researcher to select appropriate methods. In connection with this case, “every researcher collect data using one or more techniques.”⁷³

To collect the data in this study, the writer used several procedures in collecting the data, as follows:

1. Test

The instrument of the study was used to collect the data. The instrument used in the study was test. The test was used to know the result of student's test and this result took gave the description where is more ability of the student comprehended between vocabulary mastery and writing ability. The test was students' vocabulary score in multiple choice test vocus on verb form and there were 50 item for the try-out test. The result which found was there were 5 invalid items and there were 45 valid items was valid. The test used 45 items. For writing test the write used

⁷² ibid

⁷³ William Lawrence Neuma, *Social Research Method: Qualitative and Quantitative Approachs*, p. 33.

recout text and the students' write down short paragraph about recount text. The instrument of the study used to measure the students' understanding of vocabulary that master by students only students' writing ability.

2. Documentation

Documentation provides the researcher with information that is used to support the avilable data. Documentation is way of getting information or data throught notes, transcripts, books, newspaper, magazines, agenda, etc.⁷⁴ In other words, it can be stated that documentation is used to collect data through printed materials.

D. Instrument Try Out

In order to prove the test was suitable to the students who were the sample of this study so the try out test was used. Then, for try-out class was chosen VIII-5 which consisted of 21 students. The test was students' vocabulary score in multiple choice test form and there were 50 items. The try out test conducted on August, 19th 2016 SMP Muhammadiyah Palangka Raya. The result which found was there were 5 items and 45 valid items.

E. Instrumentation Validity

Validity instrument it means the instrument that used to get the data (measure) was valid. Valid it meant the instrument can be used to measure what are we want to measure.⁷⁵

⁷⁴ Arikunto Suharsimi, *Prosedur Penelitian: Suatu Pendekatan Praktek*, p. 206.

⁷⁵ Sugiyono, *Statistik untuk Penelitian*, Bandung: Alfabeta, 2004, p. 267.

Based on Sugiyono, the result of study was called valid if there was a similarities between the data that have collected by the testes and the true data that happened on the object of the study.⁷⁶

Spolky stated that validity was the central problem in foreign language testing. Validity was concerned with whether a test measures what it is intended to measure. A test of writing ability in a classroom setting was usually an achievement test. An achievement test should have content and face validities. Since content validity asks if the test content matches the content of the course of study, what teachers can do was to match the course objectives and syllabus design with the test items.⁷⁷ To find the validity of test, face validity, content validity, and construct validity were used.

The writer used three validities to know the instrument validity of the study; they are face validity, content validity and construct validity. According to Heaton, a good test should posses' validity: that is it should measure what it is intended to measure and nothing else.⁷⁸

Validity was the extent to which a measure actually taps the underlying concept that it purports to measure.⁷⁹ In this study, the validity was classified into face, content and construct.

⁷⁶*Ibid*, p. 267.

⁷⁷ Kim, Hyun Sook, *The Types of Speaking Assessment Tasks used by Korean Junior Secondary School English Teachers*, [http://www. Asian-eft-journal.com/dec_03_gl_kr.php](http://www.Asian-eft-journal.com/dec_03_gl_kr.php), Online on November 29th, 2015.

⁷⁸J.B. Heaton, *English Language Test, England: Logman, 1974*.p.X

⁷⁹DonalAry, Lucy Chesar Jacob, Chris Sorensen, AsgharRazavieh.*Introduction to Research in Education, (Eighth Edition)*, Canada: Wadsworth Cengage Learning, 2010.p. 196.

1) Content Validity

According to Heaton, a good test should possess validity: that was to measure and nothing else.⁸⁰ If a test does this, it said to be valid. All of the test must be related to what students learned. The test based on the material in the curriculum applied in SMP Muhammadiyah Palangka Raya.

To measure the validity of vocabulary mastery and writing ability, the writer used the formulations of Product Moment as follows:⁸¹

$$r_{xy} = \frac{(N \sum xy) - (\sum x)(\sum Y)}{\sqrt{[(N \sum X^2) - (\sum X)^2][(N \sum Y^2) - (\sum Y)^2]}}$$

Where:

r_{xy} :Table coefficient of correlation

$\sum X$: Total value of score X

$\sum Y$: Total value of score Y

$\sum XY$: Multiplication Tesult between Score X and Y

N: Number of studentsof the study.

After that, the data was calculated by using Test-observed calculation with the formulation belows:

$$t_{observed} = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$$

Where :

⁸⁰ *Ibid.*,

⁸¹ Riduwan, *Metode dan tehni kmenyusun tesis*, Bandung :Alfabeta, p. 110.

t = The value of t_{observed}

r = The coefficient of correlation of the result of r_{observed}

n = Number of students

The distribution of t_{table} for $\alpha = 0,05$ and the degree of freedom (n-2) with the measurements of validity using these criteria below :⁸²

Interpretation:

$t_{\text{observed}} > t_{\text{table}} = \text{Valid}$
$t_{\text{observed}} < t_{\text{table}} = \text{Invalid}$

The criteria of interpretation the validity :⁸³

0.800 – 1.000	=	Very High Validity
0.600 – 0.799	=	High Validity
0.400 – 0.599	=	Fair Validity
0.200 – 0.399	=	Poor Validity
0.00 – 0.199	=	Very Poor Validity (invalid)

And also the writer used vocabulary scoring system as follows:

$$S = n/N \times 100$$

Where :

S = Students' score

n = Number of true answer

N = Number of testitems.⁸⁴

⁸²Riduwan, *Metode dan Teknik Menyusun tesis*, Bandung :Alfabeta, p. 110.

⁸³Riduwan, *Metodedan Teknik Menyusun Thesis*, Bandung : Alfabeta, 2004, p. 120

⁸⁴ Depdikbud, *Kurikulum Pedoman Khusus Bahasa Inggris Madrasah Tsanawiyah*, Jakarta: Direktorat Jendral Agama Islam, 2004.

2) Construct Validity

The item test was constructed based on the material given in classroom namely English writing and vocabulary. And also the objective of the test were made to be precise based on attainment in indicator of syllabus.

The test was students' vocabulary score in multiple choice test focus on verb used in simple past tense form and there were 50 item for the try-out test. The result of the try out test which found 5 invalid items and 45 valid items . The test used 45 items. For writing test the write used recount text and the students' write down short paragraph about recount text.

F. Instrumentation Reliability

The reliability of a measuring instrument is the degree of consistency with which it measures what ever its measuring. This quality is essential in any kind of measurement.⁸⁵ It is use to prove that the instrument approximately believe is use as the tool of collecting the data because it is regard well. The reliable instrument is the constant.

Reliability correlate with the instrument can give the same result to the object that is measure repeatedly in the same time, Heaton stated:

“Reliability is necessary characteristic of any good test: for it to be valid data all, a test must first be reliable as a measuring instrument. If the test is administrated to the same candidates on different occasion (with no language practice work taking place these occasion) then, to the extent that is procedures differing result, it not reliable”⁸⁶

⁸⁵DonalAry, Lucy Chesar Jacob, Chris Sorensen, Asghar Razavieh. *Introduction to Research in Education*, (Eighth Edition), Canada: Wadsworth Cengage Learning, 2010.p. 236

⁸⁶J.B. Heaton, *Writing English Language*, England: Longman, 1974.p.155.

To know the reliability of the instrument test, the writer used the Alpha's cronbach. The formula was .⁸⁷

$$r_{11} = \left(\frac{k}{k-1} \right) \times \left(1 - \frac{\sum S_i}{St^2} \right)$$

Where:

r_{11} : Reliability of instrument

k : Number of items

S_i : Value variance score of item

S_t : Variance score

The decision is comparing the value of r_{11} and r_t :

$r_{11} > r_{table} = \text{Reliable}$

$r_{11} < r_{table} = \text{Not Reliable}$

To know the level of reliability of instrument, the value of is interpreted based on the qualification of reliability as follows:⁸⁸

0.800 – 1.000 : Very High Reliability

0.600 – 0.799 : High Reliability

0.400 – 0.599 : Fair Reliability

0.200 – 0.399 : Poor Reliability

0.00 – 0.199 : Very Poor Reliability

In scoring the writing test, the writer used inter-rater, Inter-rater reliability was a measure of realibility used to assess the degree to which different judge or raters agree in their assasment decisions. Interater realibility was useful because human observes used not necessarily interpret

⁸⁷Riduwan, *Metodedan Teknik Menyusun Tesis*, Bandung: Alfabeta, 2008, p. 88.

⁸⁸ Abdul Qodir, *Evaluasi Pembelajaran Bahasa Inggris*, Solo: El Torros, 2009, p.88.

answers the same way; rater may disagree as to how well certain responses or material demonstrate knowledge of the construct or skill being assessed.

In this study, the writer used inter-rater to correct the student's scores. The rater were the writer self, and one of English teacher eighth grade of SMP Muhammadiyah Palangka Raya. The writer used analytic scoring. In analytic scoring, scripts were rated on several aspects of writing or criteria rather than given a single score. Depending on the purpose of the assessment, scripts might be rated on such features as content, organization, cohesion, register, vocabulary, grammar, or mechanics.⁸⁹

G. Data Collection Procedures

The writer did some ways in the data analysis procedures, they are as follows:

1. Giving the vocabulary item to the all English students of the eighth grade of SMP Muhammadiyah Palangka Raya, academic year 2016/2017.
2. Collecting the data of the students' vocabulary item result.
3. Giving score to vocabulary mastery.

$$S = \frac{n}{N} \times 100$$

Where:

S : Students' score

n : Number of true answer

N: Number of tests items

4. Testing the students' writing ability by using instrument of writing test.

⁸⁹Sara Cushing Weigle, *Assessing Writing*, series editor: J. Charles Akderson and Lyle F. Bachman. New York: Cambridge University Press, 2002, p. 114.

5. Scoring students' writing ability by using writing scoring rubric.
6. Collecting the students' writing test.
7. Testing the normality and homogeneity.
8. Testing of linearity.
9. Calculating the data by using *correlation "r" product moment* to the test the hypotheses of the study. Whether there is correlation significant between English vocabulary mastery and writing ability or not.

Two know the hypothesis is accepted or rejected using the criterion:

- If $r_{\text{observed}} \geq r_{\text{table}}$ it means H_a is accepted and H_o is rejected.
- If $r_{\text{observed}} < r_{\text{table}}$ it means H_a is rejected and H_o is accepted.

10. In addition, the writer uses SPSS 18.0 program to compare the data.
11. Interpreting the result of t-test. Previously, the researcher accounted the degrees of freedom (df) with the formula :⁹⁰

$$df = N - nr$$

Note:

$$df = \text{degrees of freedom}$$

$$N = \text{Number of students}$$

$$nr = \text{Number of variable}$$

After that, the value of t-test was consulted on the t-table at the level of significance 1% and 5%. In this research, the writer used the

⁹⁰*Ibid*

level of significance at 5%. If the research or r -observed was higher than r -table, it means H_a was accepted. But if the result of r -observed is lower than r -table, it means H_o was accepted.

12. Making discussion to clarify the research finding.

13. Giving conclusion.

14. Summary

To sum up, the steps in collecting, analyzing, and hypothesis testing can describe below. In the first step, the students were given writing test. And their writing ability will scored by their writing lecturer from every writing class by using writing scoring rubric. Second step, the students' fill the vocabulary multiple choice that given by researcher and the multiple choice result will measure by using score multiple choice. Third step, normality and homogeneity measure to fulfill the assuming. Fourth step, testing of linearity, Fifth step, calculating the data by using correlation " r " product moment to the test the hypotheses of the study, the research hypothesis will be test to answer the research problem. In addition, the writer also uses SPSS 18.0 program to compare the data.

H. Technique of Processing Data

1. Editing: this activity did in order to check of the data that to anticipate mistakes happens, so the data should be valid and suitable with the need.
2. Coding: after the processing of editing, the second step was exchange codes from the data. Code was a sign made in number or letters that is

given to identify in information or data that was to analyze to change the students' name. Each of the answer sheets was replaced by the code, for example: A1, B1.

3. Scoring: the score was given to the students refers to evaluation standards of English subject: 0-59 categorized as failed and 60-100 categorized as success.