

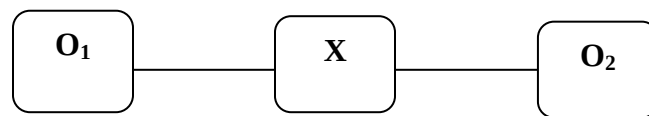
CHAPTER III

RESEARCH METHOD

A. Research Type

This study used the **quantitative research** type which makes use of numbers and statistical data to analyze and present the results. The researcher investigated how the cause which been an independent variable (in this study the use of using authentic materials) affected the dependent variable (the learning of writing). Experimental type used because the researcher had to draw the cause-effect relationship between the dependent and independent variables.

The type of study used is Experimental Study. It utilized One group pre-Test/Post-Test Design. Creswell stated that this type includes a pre-test measure followed by a treatment and a post-test for a single Group.⁵⁵ This design can be diagrammed as follows :



Where:

O₁ : Pre-test

X : Treatment

O₂ : Post-test

⁵⁵John W.Creswell, *Qualitative And Quantitative Approach*, California: SAGE Publications, inc,1994, P. 132.

In this Experiment, the writer taught the students directly. Firstly, the writer gave the students pre-test in order to measure the students' achievement in writing before using authentic materials as media. In this case, the students had learnt writing before. Secondly, the writer gave treatment. The writer taught the students for four times by using authentic materials. Third, there was post test. The result of pre-test and post-test was compared to look for the scores was whether their abilities in writing increased or not after authentic materials were taught. In this research, the writer had collected; processed; analyzed the data to get conclusion of the research.

B. Research Design

The research design of this study is quasi-experimental design using T-test. Experimental design is a plan for experiment that specifies what independent variable applied, the number of levels of each, how object assigned to group, and the dependant variables. T-test is a statistical procedure used to compare responses from two groups. T test is generally applied to normal distribution which has a small set of values. This test compares the mean of two samples. The T-test can be used for the case of a quantitative outcome with a categorical explanatory variable that has two variables.⁵⁶

The research design of the research is experimental design because the research measured the effect of giving treatment and compared the effect of the treatment for the sampling.

⁵⁶Husaini Usman, *Pengantar Statistik*, Jakarta: Bumi Aksara, 1995, P. 92

Experimental research involves a study of the effect of the systematic manipulation of one variable(s) on another variable. The manipulated variable is called the experimental treatment or the independent variable (authentic materials as instructional media in teaching recount writing). The observed and measured variable is called the dependent variable (students' scores in writing recount text).⁵⁷

C. Variables of the Study

In the study, there are two variables:

1. The first is Independent Variable :

The Independent variable (X) of this study is the use of authentic materials as media in the class.

2. The Second is Dependent Variable :

The Dependent Variable (Y) of this study is students' scores who involved in this study.

D. Place and Time of The Study

In this study, the writer needed about two months, they are from 18th August 2014 – 18th October 2014 to collect all of the data accurately and briefly. The place of study is MTs Islamiyah Palangka Raya Jl. dr. Murjani No. 77.

⁵⁷*Ibid.*, P. 266.

E. Population and Sample

1. Population

According to Arikunto, population is the whole of research subject, if someone wants to research all of the elements in research area her research is called population research.⁵⁸

The Population of the research is all the students of eighth grade students of MTs Islamiyah Palangka Raya, they are 62 Students in three classes; VIII(A), VIII(B), and VIII(C).

Based on the last definition about the population, can be concluded that the subject of all the study is all of the students which have the same characteristics and will be investigated through this research.

Table 2.1
Number of Eighth Grade Students in MTs Islamiyah
Palangka Raya

NO	CLASSES	NUMBER OF STUDENT
1	VIII(A)	22
2	VIII(B)	20
3	VIII(C)	20
TOTAL		62

⁵⁸Suharsimi Arikunto, *Procedure Penelitian: Suatu Pendekatan Praktek*, Jakarta: PT.Rineka Cipta, 2000, P. 108.

2. Sample

To determine the study, the writer took what Arikunto suggested that sample is a part of representative of population that are examined or investigated.⁵⁹ In order to take a smallest group, the writer used cluster sampling. Cluster sampling is a sampling technique where the entire population is divided into groups, or clusters, and a random sample of these clusters are selected. In cluster sampling, instead of selecting all the subjects from the entire population right off, the writer took several steps in gathering her sample population. First, the writer selected groups or clustered, and then from each cluster, the writer selected the individual subject by either simple random or systematic random sampling.⁶⁰

In this way, the writer only chose two classes that were class VIII(A) and VIII(B) which related to this study. In this study, the English teacher had recommended the writer to choose class VIII(A) as experimental class, VIII(B) as control class, whereas VIII(C) as try out class because they have same abilities in learning English.

⁵⁹*Ibid.*, p. 120.

⁶⁰Sukardi, *Metodologi Penelitian Pendidikan Kompetensi dan Praktiknya*, Jakarta:PT. Bumi Aksara, 2007, P. 61.

F. Research Instruments

1. Test Type

The type of the test used to collect the data is in the form of writing test, especially recount writing test using and without authentic materials as teaching media. In this sense, the students were assigned to complete a recount text with suitable words that provided. The allocated time to do each writing test was 40 minutes.

2. Test Construction

The construction was based on the objective of the study. The study was aimed at finding the effect of using authentic materials media on students' scores in writing recount text at eighth grade students of MTs Islamiyah Palangka Raya. To investigate the effect of using authentic materials media on students' scores in writing recount text at eighth grade students of MTs Islamiyah Palangka Raya, the subjects were assigned to complete recount text. The result of two tests were investigated using statistical analysis and the outcomes were compared to see the effects of using authentic materials media on students' scores.

To gain the appropriate writing test for the aim of this study, the writer did some steps: (a). planning the writing test, (b). preparing the writing test, (c). trying out (pre test) the test (d). analyzing the result, and (e). carrying out the test.

a. Planning the writing test

To produce a good writing test, the writer made plan on the test construction. In this sense, the objective of the test was determined. Then, the

writer decided the appropriate type of test. The test type and test objectives are very close. The test objective cannot be achieved without having appropriate test type. Then, the writer was caring for the adequacy of the content. The test content should match with test types and objectives. Lastly, the time allocation for the test administration plans as well as the instrument try out.

b. Preparing The Writing Test

The writing test was used to elicit the data covering direction and instructions of what the subjects had to do. To make the instruction clear and understood by the students, the instructions must simple.

To construct the directions, the writer took into account the guidelines applied by Clouse as follows: (1).The question should be clear, (2). The question should be brief, (3).The question should be definite, (4). Avoid question requiring yes or no answers, (5). Average students should be able to write answer to the questions, (6). The vocabulary used and the concepts expressed should not be too difficult for ordinary students to understand immediately, (7). The instructions should provide an organizing principle for composition.⁶¹

The writing instructions were designed to measure the students' writing ability. The students' ability was scored on the basis of the marking scheme that

⁶¹Barbara F. Clouse, *The Students Writer: Editor and Critic*, Boston : Mc Graw-Hill, Inc. 1986, P. 50

are if the students' answer is right then it is given score 10, while if the students' answer is wrong or there is no answer then it is given score 0.

c. Test Try Out

In order to prove the test is suitable to the students who were the sample of this study, the writer had conducted a try out test. The writer chose students in the same school but different class to try out the test. The try out test was conducted to MTs Islamiyah Palangka Raya, Class VIII(C) as the try out class with 20 students. The result is valid, it means that the test items (10 questions) as the instrument of this study is suitable to be given.

3. Research Instrument Validity

Validity is a measurement which shows the grades of number of an instrument. A valid Instrument must have high validity, it means that an instrument which lacks validity is said to be invalid instrument.

An instrument is called a valid one when it can measure something which is wanted by covering the variable studied exactly. The method used in measuring the validation of the instrument is called content validity. A test or a measurement can be called a content test when it measures the special purpose which is equal with the material or content given.

a. Face Validity

The types of face validity, if the test items look right to other testers, teacher, indicators and test. The types of test items, which used in this research, can be suitable to the others at the same level in Islamic Junior High school.

For face validity of the test items as follow:

- 1) The test used written test in completing test instruction.
- 2) The evaluation test based on scoring system.
- 3) Kind of the test is completing recount text.
- 4) The Language of items used English
- 5) The test is suitable with syllabus of English writing for eighth grade students at MTs Islamiyah Palangka Raya.

b. Content Validity

This kind of validity depends on a careful analysis of the language being tested and of the particular course objective. The test should be so constructed as to contain a representative sample of the course, the relationship between the test items and the course objective always being apparent.⁶² The instrument which was using test, the testing of content validity was done by asking the opinion of the judgment experts about the instrument is able to try out or not.

c. Construct Validity

It is capable of measuring certain specific characteristics in accordance with a theory of language behavior and learning. This type of validity assumes the existence of certain learning theories or constructs underlying the acquisition of abilities and skill.⁶³ After the instrument checked by the

⁶²J. B. Heaton, *Writing English Language tests*, New York: Longman, 1974, P. 154.

⁶³*ibid*, P. 155.

judgment experts, continued testing of construct validity. It was conducted by field test. The test is text completion. It is a test that used for beginning step suits to syllabus. The writer used this test as instrument because the sample that she studied is in beginner level (Eighth Grade Students). The test is formed in new paragraph and the students were asked to complete the paragraph with the suitable words that provided. The categories of missing words in the box consist three content words; 3 nouns, 4 verbs, and 3 adjectives. In order to find the validity, product moment Correlation was used as the formula to calculate from the result of try out, it was also calculated using SPSS program.

The formula is as follows.⁶⁴

$$r_{xy} = \frac{N(\sum XY) - (\sum X)(\sum Y)}{\sqrt{\{N \cdot \sum X^2 - (\sum X)^2\} \{N \cdot \sum Y^2 - (\sum Y)^2\}}}$$

Where:

- r_{xy} : The coefficient of correlation
 $\sum X$: Total Value of Score X
 $\sum Y$: Total Value of Score Y
 $\sum XY$: Multiplication Result between Score X and Score Y
 N : Number of Cases

Furthermore, it calculated using T-test Calculation as follows:⁶⁵

$$t_{\text{observe}} = \frac{M_D}{SE_{MD}}$$

⁶⁴Riduan, *Metode dan teknik Menyusun Thesis*, Bandung: Alfabeta, 2004, P. 110.

⁶⁵*ibid.*,

where:

M_D = Mean of Difference

SE_{MD} = Standard Error of Mean of Difference

The distribution of t_{table} at alpha 5% and the degree of freedom (n-2) with the measurements of validity using the criteria below:⁶⁶

$r_{xy} > t_t = \text{Valid}$
$r_{xy} < t_t = \text{Invalid}$

To know the validity level of the instrument, the result of the test interpreted to the criteria below:⁶⁷

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

0.00-0.199.1 = Very Poor Validity

4. Research Instrument Reliability

Reliability is a necessary characteristic of any good test for it to be valid at all. A test must first be reliable as a measuring instrument. It is the degree of consistency with which it measures whatever it is measuring.⁶⁸ Reliability is the

⁶⁶Ridwan, *Metode dan Teknik Penyusunan Tesis*, Bandung: Alfabeta, 2009, P. 110.

⁶⁷*ibid.*, P.111.

⁶⁸Donald Ary et al, *Introduction to Research in Education*, 8th edition, P. 236.

extent of consistency and stability of the measuring instrument. In this case, to score the students' tasks as fairly and consistently as possible, the writer used KR 20 or (Kuder–Richardson Formula 20) method (test of reliability). These are alternative formulas for calculating how consistent subject responses are among the questions on an instrument. Items on the instrument must be dichotomously scored (0 for incorrect and 1 for correct). The Formula is as follow:⁶⁹

$$KR20 = [n/(n - 1)] \times [1 - (\Sigma pq)/Var]$$

Where:

KR20 = estimated reliability of the full-length test

n = number of items

Var = variance of the whole test (standard deviation squared)

Σpq = sum the product of pq for all n items

p = proportion of people passing the item

q = proportion of people failing the item (or 1-p)

KR-20 (Kuder–Richardson Formula 20) is an index of the internal consistency reliability of a measurement instrument, such as a test, questionnaire, or inventory. Although it can be applied to any test item responses that are dichotomously scored, it is most often used in classical psychometric analysis of psychoeducational tests and, as such, is discussed with this perspective. Values of KR-20 generally range from 0.0 to 1.0, with higher values representing a more internally consistent instrument. In very rare cases, typically with very small

⁶⁹*Ibid.*,

samples, values less than 0.0 can occur, which indicates an extremely unreliable measurement. A rule-of-thumb commonly applied in practice is that 0.7 is an acceptable value or 0.8 for longer tests of 50 items or more. Squaring KR-20 provides an estimate of the proportion of score variance not resulting from error. Measurements with KR-20 < 0.7 have the majority of score variance resulting.⁷⁰ Furthermore, the reliability of try out test was also calculated using SPSS program and the result shown that the test is reliable to be given.

G. Data Collection

In collecting the data of this study, the writer took the data from pre-test and post-test. Pre-test had been given to the subjects before doing teaching and learning process (treatment). Meanwhile, post-test had been given after applying teaching and learning process (treatment).

In this study, the writer applied steps as follow:

1. The writer observed the school (MTs Islamiyah Palangka Raya).
2. The writer tried out the test to class VIII(C). Kind of the test try out is asking students to complete a recount text with the suitable words that provided.
3. The writer checked the result of the test try out.
4. The writer divided the students (sample) into two classes (experimental and control) by using cluster sampling.
5. The writer gave a pre-test to both classes (experimental and control).

⁷⁰David Nunan, *Research Methods in Language Learning*, P. 56.

6. The writer checked the result of pre-test of experimental and control classes.
7. After the pre-test given, the writer taught the students in experimental class about recount text by using authentic materials and control class without using authentic materials. Experimental and control classes were taught using grammar translation method. The treatment was done four times.
8. After doing the treatment, the writer gave the post-test to both classes.
9. Then, the writer checked the students' answers in the post-test.
10. The writer gave scores to students' answers by using scoring rubric. In this case, the writer applied T-test for correlated samples to examine the significant difference scores between experimental and control classes.
11. Finally, the writer compared the students' scores in the pre-test and post-test. It is done to know whether the use of authentic material is effective in improving students' abilities in writing recount paragraphs or not.

H. Data Analysis

1. Techniques of Data Analysis

a. Normality Test

It is used to know the normality of the data that is going to be analyzed whether both groups have normal distribution or not. The normality of the data was also analyzed using SPSS program and the result shown that the data distribution is normal.

Lilifors is used here⁷¹

$$F(Z_i) - S(Z_i)$$

Notice:

$F(Z_i)$: 0,5 – the value of Z_i table

$S(Z_i)$: $fk - \Sigma A_1$

b. Homogeneity Test

It is used to know whether experimental group and control group, that were decided, come from population that has relatively same variant or not. The homogeneity of the data was analyzed using SPSS program and the result shown that the data were taken from homogeny samples.

2. Data Analysis Procedures

The data of this study is students' writing scores in experimental and control classes. Therefore, the data are in quantitative data. The data were analyzed by means of inferential statistics. This statistical analysis is suitable to use to answer the research problem. In this case, the researcher applied T-test for correlated samples to examine the significant difference score between experimental class that taught using authentic materials and control class that taught without using authentic materials in completing recount text.

In Order to analyze the data, the writer did some procedures:

- a. The writer collected the students' written scores of pre-test and post test

⁷¹Sudjana, *Metode Statistika*, Bandung: Tarsito, 1996, P. 273.

- b. The writer arranged the obtained score into the distribution of frequency of score table.
- c. The writer calculated mean by using this formula:⁷²

$$M_x = \frac{\sum fX}{N}$$

Where: M_x = Mean

$\sum fX$ = Total Value of Multiplication Result between each score with its frequency.

N = Number of Cases

- d. The writer calculated Median by using formula:⁷³

$$Mdn = l + \left[\frac{\frac{1}{2}N - fk_b}{f_i} \right] \text{ or: } Mdn = u - \left[\frac{\frac{1}{2}N - fk_a}{f_i} \right]$$

Where:

Mdn = Median

l = lower limit of interval that contains median

fk_b = cumulative frequency (under interval that contains median)

f_i = frequency of interval that contains median

N = Number of Cases

u = upper limit f interval that contains median

fk_a = cumulative frequency (upper interval that contains median)

⁷²Anas Sudijono, *Pengantar Statistik Pendidikan*, P.40.

⁷³*ibid.*,P.52.

e. The writer calculated Modus by looking score that has highest frequency:⁷⁴

f. The writer calculated Deviation Standard by using formula:⁷⁵

$$SD = \sqrt{\frac{\sum fx^2}{N}}$$

Where:

SD = Standard of Deviation

$$\sum fx^2 =$$

N = Number of Cases

g. The writer calculated T-test for two samples that have correlation each others to answer the problem of the study, whether authentic materials gives effect toward students' scores of experimental class in completing recount paragraph. Formula that used to find "t" or t_o (t-observed) for two samples that have correlation each others is as follows:⁷⁶

$$t_o = \frac{M_D}{SE_{MD}}$$

Where:

1) M_D = Mean of Difference = Average score from deviation between score variable I and score variable II that can be found by using formula:

$$M_D = \frac{\sum D}{N}$$

⁷⁴*Ibid.*, p. 56.

⁷⁵*ibid.*, p. 64.

⁷⁶*ibid.*, p. 93.

2) $\sum D$ = The Total Score of deviation between score variable I (variable X) and score variable II (variable Y), and D is found by using formula: $D = X - Y$.

3) N = Number of Cases = the total subject that is studied.

4) SE_{MD} = Standard Error of Mean of Difference that found by formula:

$$SE_{MD} = \frac{SD_D}{\sqrt{N - 1}}$$

5) SD_D = Standard Deviation of difference between score variable I and Score variable II that can be found by formula:

$$SD_D = \sqrt{\frac{\sum D^2}{N} - \left(\frac{\sum D}{N} \right)^2}$$

Procedures that done in order to find the value of t_o (t-observed) continuously are as follow:⁷⁷

6) The writer found D (Difference) between score variable I and score variable II. If variable I is given symbol X then variable II is given symbol Y, so: $D = X - Y$.

7) The writer totalized D till get $\sum D$.

8) The writer found Mean of Difference by formula: $M_D = \sum D / N$.

9) The writer squared D: then totalized till find $\sum D^2$.

⁷⁷*Ibid.*, P. 94.

- 10) The writer found Standard Deviation of Difference (SD_D) by formula:

$$SD_D = \sqrt{\frac{\sum D^2}{N} - \left(\frac{\sum D}{N}\right)^2}$$

- 11) The writer found Standard Error of Mean of Difference, that is SE_M , by using formula:

$$SE_{MD} = \frac{SD_D}{\sqrt{N - 1}}$$

- 12) The writer found t_o by using formula:

$$t_o = \frac{M_D}{SE_{MD}}$$

- 13) The writer gave interpretation to " t_o " by following these steps:

(a) First, Alternative Hypotheses (H_a) and Null Hypotheses (H_0).

(b) The writer examined significant of t_o , by comparing the value of t_o (" t " result of observation or " t " result of calculation) with t_t (critic value " t " that is found in Null Tabel " t ") by first set its degrees of freedom (df) that can be found by formula: $df = N - 1$.

(c) The writer found critic value " t " that is found in Score Tabel " t " by based on df that has been found, neither on significant taraf 5% nor significant taraf 1%.

(d) The writer did a comparison between t_o and t_t :

(1) If t_o is bigger or equal with t_t , then Null Hypotheses is rejected; otherwise Alternative Hypotheses is accepted. It means there is significant difference between both variables that studied.

(2) If t_0 is smaller than t_t , then Null Hypotheses is accepted and Alternative Hypotheses is rejected. It means that there is no significant difference between both variables that studied.

(e) The writer gave conclusion from the result.

- h. The writer interpreted the result of analyzing
- i. The writer made discussion to clarify the research finding.
- j. The writer gave Conclusion.