

CHAPTER III

RESEARCH METHOD

In this part, the writer describes research method that consist of, Research Design, Approach and type of the study, Population and Sample, Instrument of the study, Data Collecting Techniques, Research instrument, Research instrument Try Out, Research instrument Validity, Research instrument Realibility, Data Collection Procedures, Data Analysis Procedure.

A. Research Design

In this research, the writer used the quantitative approach. Quantitative is a research that relies less on focus group, subjective reports and case studies but is much focused on the collection and analysis of numerical data and statistics. The design of this study is a experimental design because the writer measures the effect of using direct method in teaching learning english reading process. According to Arikunto, Experimental study is a study which aimed to know there is or not effect of the variable studied.²¹ The writer did field study, especially quasi experimental design. An experiment involves the comparison of the effects of a particular treatment with that of a different treatment or without treatment. quasi experimental design are similar to randomized experimental design are similar to randomized experimental design in they involve manipulation of an independent variable but different in that subjects are not randomly assigned to treatments group.²² The writer used the quasi-experimental design in this study.

²¹Suharsimi Arikunto, *manajemen penelitian*, p. 272

²²Donald Ary, Lucy Cheser Jacobs, and Christine K, Sorensen., *Introduction to Research in Education*, USA: Wadsworth Cengage Learning, 2010, p. 316

Because this study will compare with two ways and the writer wants to measure the effectiveness of teaching english reading that ways.

Although true experimental are preferred, quasi-experimental designs are considered worthwhile because they permit researchers to reach reasonable conclusion even though full control is not possible. The type of this study is quasi-experimental study by the nonrandomized control group; pretest-posttest design is one of the most widely used quasi-experimental design in educational research.²³

B. Approach and Type of the Study

The approach of the study is quantitative approach and the type of the study is quasi-experimental design. This type of study will show if there any difference effect between teaching english by using direct method and without using direct method on students' scores at the tenth grade students at SMA Muhammadiyah 1 of Palangka Raya.

In a typical group situation, schedules cannot be distruped nor classes reorganized to accommodate a research study. In such a case, one uses groups already organized into.

The non randomized control group, pretest-posttest design is one of the most widely used quasi-experimental designs in educational research. Moreover, the design could be drawn in the following scheme below :

²³Alison Mackey and susan M. Gass, *Second Language Research Methodolgy and Design*, London 2005 p. 146

Table 3.1 Scheme of quasi experimental design**Nonrandomized control group, pretest – posttest design**

| Subject | Pre – test | Treatment | Post – Test |
|----------------|-------------------|------------------|--------------------|
| E | Y1 | X | Y2 |
| C | Y1 | - | Y2 |

Where :

E : Experimental group

C : Control group

X : Treatment

Y1 : Pre – Test

Y2 : Post – Test

C. Population and Sample

1. Population

According to Ary “*Population is all members of well-defined class of events, or objects.*”²⁴ It means all the member of the object observation is the population in which the larger group about the generalization is made. Related to the study, the population of the study was all of the Tenth grade students at SMA Muhammadiyah 1 Palangka Raya in Academic Years 2013/2014.

The writer took the students from the SMA Muhammadiyah 1 Palangka Raya for this research. The population of the study is first grade students of SMA Muhammadiyah 1 Palangka Raya. In this case, the

²⁴Donald Ary, et. Al, *Introduction to Research in education; Third Edition*, P. 138.

sample of this study is the students of X1 as experiment group and the students X2 as control group at SMA Muhammadiyah 1 Palangka Raya.

Table 3.2 The number of the first grade students at SMA Muhammadiyah 1 Palangka Raya

| No | GRADES | THE NUMBER OF THE STUDENTS |
|------------------|--------|----------------------------|
| 1. | X1 | 22 |
| 2. | X2 | 22 |
| 3. | X3 | 23 |
| 4. | X4 | 24 |
| 5. | X5 | 24 |
| THE TOTAL NUMBER | | 115 |

2. Sample

Sample is the small group that is observed.²⁵ Students in the first grade at the second semester in SMA Muhammadiyah Palangka Raya as a sample to get the data for this research. In this research, to take sample, the writer take two classes to be the sample, the first class is experiment group who were taught by using direct method and the second class control group who were taught by using Grammatical Translation Method. In this way, the writer take two classes X1 and X2 which will be related to this study.

The subject choosen by using cluster sampling, because the unit choosen is not individual but,rather, a group of individuals who are

²⁵*Ibid*

naturally together. A common application of cluster sampling in education is the use of intact classrooms as clusters. The clusters actually included in your study be choosen at random from a population of clusters.²⁶

In a typical situation, schedules cannot be disrupted nor classes reorganized to accomodate a research study. In this case, group sample already organized into classes or group. So, the writer taked two class without randomized. The classes were :

| No. | Classes | Group | Number of Students |
|--------------|---------|------------|--------------------|
| 1 | X-1 | Experiment | 22 |
| 2 | X-2 | Control | 22 |
| All students | | | 44 |

D. Instruments of The Study

Instruments of the study are tools or facilities that are used by the researcher in collecting the data of the study. Instruments of the study are very needed in the research. It is because the instruments are tool to get the data of study, in which the data are the important things to help the writer in answering the problem of the study and also to prove the hypothesis.

E. Data Collection Techniques

One of the main duties in the study was to collect the data to answer the problem of the study above. Data was collected in natural setting without any manipulation of the setting. The data was taken from the primer data source. The

²⁶Donald Ary, Lucy Cheser Jacobs, and Christine K, Sorensen., *Introduction to Research in Education*, USA: Wadsworth Cengage Learning, 2010, p. 154

primer data source was the data source that gave the data directly without any other mediums. Data collecting techniques was used in the study namely: test and documents.²⁷

The data also needed to find the aim of the study. It was to measure the effectiveness of direct method in the teaching reading at the tenth grade students of SMA Muhammadiyah 1 of Palangka Raya. There were two instruments that used in this study to get the data, as follows :

1. Test

In this study the writer used test as the main instrument of the study. Test is an instrument in collecting data that is a series of question or treatment that applied to measure the skill of knowledge, intelligence, the ability or the talent that have by individual or group. Test is a systematic procedure for measuring a sample of behavior presumed to represent an educational or psychological characteristic.²⁸

The test was constructed in the matching test form which consisted of 10 items. The reason why the test item was constructed in matching test, because matching test is objective test. Objective tests are frequently criticized on the grounds that they are simpler to answer than subjectiv examinations. Items in an objective test, however, can be made just as easy or as difficult as the test constructor wishes.²⁹

Experimental group and control group. The test was given to measure the students' reading scores before the direct method was applied

²⁷Mudjia Rahardjo, *Pengantar Penelitian Bahasa*, Malang: Cendekia Para Mulya, 2002, p.56

²⁸Riduwan, *Metode dan Teknik Menyusun Thesis*, (Bandung: Alfabeta, 2004), p. 105

²⁹J. B. Heaton, *Language Testing*, Longman, 1987, p. 1.

and to know the progress of the students' reading scores after the direct method have been applied.

The writer gave pre-test for control group was held on wednesday, April 30th, 2014 period 09.45-11.15 which followed by 22 students. Then, the writer gave pre-test for experimental group was held on Wednesday, April 30th, 2014 period 12.00-13.30 which followed by 22 students. The writer gave post-test for control group was held on Saturday, May17th, 2014 period 08.00-09.45 which followed by 22 students. Then, the writer gave post-test for experimental group was held on Friday, May16th, 2014 period 08.00-09.45 which followed by 22 students. The time allocation of each test process was 75 minutes.

2. Documentation

Documentation is referred to get the data directly from the place of research, envelope of relevant book, rules, report of the activity, photos, film of documenter and research data relevant. Documentation is any communicable material that is used to describe, explain or instruct regarding some attributes of an object, system or procedure, such as its parts, assembly, installation, maintenance and use.³⁰

The documentation needed to got the real data information and can support the data. This technique was aim at found the documents related to the study and support the data that got by the writer. The documents that can support this study as follows :

³⁰A.S Homby, Oxford Advanced Learner's Dictionary, (New York: Oxford University Press, 1995), p. 342

- a. The names of Tenth grade students of SMA Muhammadiyah 1 Palangka Raya
- b. The students' answer sheet.
- c. Lesson plan.
- d. Syllabus.

F. Research Instrument

This research used the test as instrument. Test is a short examination of knowledge or ability, consisting of questions that must be answered.³¹ The test is to know the students' score about their reading comprehension. This research used pre-test and post-test as instrument because this research for educational research. The writer gave some test for the students about english reading comprehension. In this case, pretest used to describe the students' in english reading comprehension before conducting treatment posttest used to describe the students in reading comprehension after conducting treatment. The writer used written test. The test will be in form essay with 10 questions. From 10 questions, number 1 – 8 used Literal comprehension, number 9 and 10 used Inferential comprehension.

G. Research Instrument Try Out

The writer try out the test instrument before it applied to the real sample of the study. The writer obtained the instrument quality consisted of instrument validity and instrument realibility. The writer gave the instrument try out to the X-4 students of SMA Muhammadiyah 1 Palangka Raya. The try out test was held on Friday, April 25th, 2014 period 08.00-09.30 which followed by 22 students.

³¹Hornby, AS., *Oxford Advanced Learner's Dictionary*, New York : Oxford University Press, 1984, p. 1233.

The time allocation of try out test was 90 minutes. The total items of the try out test was 20 items with the total valid based on validity calculation were 18 items and the total invalid items were 2 items.

Based on the result of try out, the time allocation had been provided was suitable for the students to do the test and for the instruction of the test, the students understood it very well. Therefore, the writer concluded that the instruments did not need any revising and could be used to take the data.

The instrument try out was important because the result of try-out was used to analyze and to measure the instrument whether the test has some criteria of qualified test or not. There were some criteria in analyzing the test instrument to know the quality of the test, such as instrument validity, instrument reliability, and index difficulty. In this study, the writer analyzed the quality of the test, and index of difficulty. The procedures of the try out as follows :

1. The writer prepared the test instrument.
2. The writer gave the try out test to the students.
3. The writer gave score to the students' answer.
4. The writer calculated the result of the test.
5. The writer analyzed the obtained data to know index of difficulties, the instrument validity and instrument reliability.

H. Research Instrument Validity

The validity of a test is the extent to which it measures what it is supposed to measure and nothing else.³² Simply, it can be said that a test will be valid, if it measure accurately what is intended to measure. Therefore, related to

³²J.B. Heaton, *language testing...* p.153.

the study the test was aimed to measure the students' reading scores used direct method. Therefore, related to the study, test was aimed to measure the students' reading scores used direct method. Validity has three distinct aspects, all of which are important. They are, content, face, and construct validity.

a. Content Validity

Content validity is essentially and of necessity based on the judgment, and such judgment must be made separately for each situation.³³ It refers to whether or not the content of the manifest variables is right to measure the concept that is trying to measure. In this study, the writer measured reading score. The test items were made based on the material in the syllabus that used for the tenth-grade students in the school.

Based on the explanation above, in making the test the writer try to match each of the items test with the curriculum that was used by SMA Muhammadiyah 1 Palangka Raya. The purpose is in order to make the test is appropriate with the lesson that the students accept in the moment when the research is done.

b. Face Validity

This aspect of validity refers to whether the test looks as if it is measuring what it is supposed.³⁴ A test intended to measure reading scores in order to apply as follow :

³³Donald Ary, et, al, *Introduction to Research in Education, Eight Edition*, Canada: Wadsworth Cengage Learning, 2010, p. 215

³⁴Marianne Celce and Murcia, *Teaching English as a Second or Foreign language (Third edition)*, Amerika: United States of Amerika, 2001, p. 526.

1. The kind of test was Reading test which was about narrative text.
2. The form of test items was matching test.
3. That languages of items used english.

c. Construct Validity

This form of validity refers to the degree to which score on a measure permit inferences about underlying traits.³⁵ It is related to the theoretical knowledge of the concept that was measured. The meaning of the test score is derived from the nature of the tasks examinees are asked to perform. Therefore the test instrument was made in the form of matching test. To measure the validity of the instrument, the writer used the formulation of Product Moment by Pearson as follows:³⁶

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

Where : The Coefficient

r_{xy} : The Number of Score for each items

$\sum X$: The Number of Score for Each Items

$\sum Y$: The Number of Total Score

n : The Number of Students

After the value of coefficient correlation (r_{xy}) had found, then it was calculated using the measurement of t (t-test) with the formula as follows :

³⁵*Ibid*, p. 526.

³⁶Anas Sudjijono, *Pengantar Statistik Pendidikan*, Jakarta: PT. Raja Grafindo Persada, 2008, p. 206.

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

Where :

t_o : The value of t_{observed}

r : The Coefficient Correlation of r_{xy}

n : The Number of Students

The distribution of t_{table} at alpha 5% and the degree of freedom

($n - 2$) with the measurement of validity using these criteria :

$$T_{\text{observed}} > T_{\text{table}} = \text{Valid}$$

$$T_{\text{observed}} < T_{\text{table}} = \text{Invalid}$$

To know the level of instruments validity, the result of the coefficient correlation would be interpreted to the criteria of the correlation index (r) as follows :³⁷

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

0.000 – 0.119 : Very Poor Validity

The researcher used evidence based on test content because the researcher will evaluate the relationship between two variables from the result of students' achievement test. In order to get a valid data the writer employs interpreter in this study.

³⁷*Ibid*, p.110

I. Research Instrument Reliability

Realibility is defined as the extent to which a questionnaire, test, observation or any measurement procedure produces the same results on repeated trials. Realibility refers to consistency of measurement, which is how consistent test scores or other evaluation results are from one measurement to another. Realibility can be defined as the stability of test scores.³⁸

To measure the realibility of the measurement, the writer used the formula of Kuder Richardson (KR-21). The formula was as follows :³⁹

$$r_{11} = \left(\frac{K}{K-1} \right) \left(1 - \frac{M(K-M)}{K.Vt} \right)$$

Where :

r_{11} : Instrument Realibility

K : The number of items in the test

M : The mean score on the test for all the testers

Vt : The standard deviation of all the testers' score

To know the realibility of the measurement, the writer used the criterion as follows:⁴⁰

- If $r_{11} > r_{table}$ = Reliable.
- If $r_{11} < r_{table}$, = Not Reliable.

³⁸David P. Harris, *Testing English As Second Language*, (New York: Mc Graw Hill Book Company, 1969), p. 86.

³⁹Riduwan, *Metode dan Teknik Menyusun Tesis*, (Bandung: Alfabeta, 2010), p.120.

⁴⁰*Ibid*, p. 128.

1. Index of difficulty

“The index of difficulty (or the facility value) of an item simply shows how easy or difficult the particular item proved in the test”⁴¹. To know the level of difficulty of test, use formula as follow :

$$F.V = \frac{R}{N}$$

Notes : F.V = index of the difficulties

R = the number of the correct answer

N = the total of the student⁴²

Then the result of the formula above is related to the value of F.V as the following classification :⁴³

F.V 0.00-0.30 : Difficult.

F.V 0.30-0.70 : Fair

F.V 0.70-1.00 : Easy

J. Data Collection Procedures

In this study, the writer used some procedures to collect the data. The procedures consist of some steps as follows:

1. The writer observed to SMA Muhammadiyah 1 Palangka Raya.
2. The writer gave try out to other class.
3. The writer determined the class into experimental group and control group.

⁴¹J.B. Heaton, *Writing language English Test*, London: Longman 1974, p. 172

⁴²*Ibid*, p. 172

⁴³Anas Sudijono, *Pengantar Evaluasi Pendidikan*, (Jakarta: PT. Rajagrafindo persada, 2007) p. 372.

4. The writer gave pre-test to the experimental group and control group.
5. The writer taught the experimental group by using direct method
6. The writer taught the control group by using conventional teaching (Grammatical Translation Method).
7. The writer gave post-test to the experimental group and control group.
8. The writer gave scores to the data from the experimental group and control group.
9. The writer tested the normality and homogeneity of the data.
10. The writer analyzed the data from pre-test and post-test using t-test.
11. The writer made the interpreting and concluding the result of data analysis.

**Table 3.3 The description of teaching activities
at experiment and control class**

| Day/ Date | Meeting | Class | Topic of the Discussion |
|--|-----------------------|-------------------|--------------------------------|
| Wednesday, April 30th, 2014 period 12.00 - 13.30 | I Pre-Test | Experiment | The Fly and The bull |
| Wednesday, April 30th, 2014 period 09.45 - 11.15 | | Control | Jack and the Beanstalk |
| Friday, May 2nd, 2104 period 08.00 - 09.45 | I | Experiment | The Fly and The Bull |
| | | Control | Jack and The Beanstalk |
| Saturday, | | | |

| | | | |
|--|-------------------------|-------------------|---|
| May 3th, 2014 period 08.00 - 09.45 | | | |
| Friday, May 9th 2014, period 08.00-09.45 | II | Experiment | The Mouse and The lion |
| Saturday, May 10th 2014, period 12.00-13.30 | | Control | Jack and The Beanstalk |
| Wednesday, May 14th 2014, period 12.00 - 13.30 | III | Experiment | Bandung Bondowoso and Roro Jonggrang |
| Wednesday, May 14th 2014, period 09.45 - 11.15 | | Control | The Monkey and The Crocodile |
| Friday, May 16th 2014 period 08.00 - 09.45 | IV Post-Test | Experiment | Bandung Bondowoso and Roro Jonggrang |
| Saturday, May 17th, 2014 period 08.00 - 09.45 | | Control | The Monkey and The Crocodile |

In this study, the writer used essay form to check students' reading comprehension. that consisted of 10 items. If the result is valid, it means that the

test item as the instrument of this study are suitable to be given. In order to find out the description of how well the individual student has comprehended the reading, the final scores are related to the following qualification :

Table 3.4

Scoring to Reading Comprehension by Form of Completion

| Criteria | Score | Predicate |
|----------------------------------|--------------|------------------|
| The answer students right | 10 | Good |
| The answer students wrong | 0 | Fair |

K. Data Analysis procedure

In this research, the writer used the t-test to analysis the data. T-test is a statistical procedure for testing hypotheses concerning the difference between two means.⁴⁴ T-test formula showed to the following formula :

$$t_o = \frac{M_1 - M_2}{SE_{m1} - SE_{m2}}$$

Where :

$M_1 - M_2$: The difference of two means.

$SE_{m1} - SE_{m2}$: The standard error of the difference between two means.

To know the hypotheses was accepted or rejected the writer used the criterion as follows :

⁴⁴Donald Ary, Lucy Cheser Jacobs, Chris Sorensen and Asghar Razavieh, *Introduction to Research in Education 8th Edition*, (Canada: Nelson Education, Ltd., 2010), p.224

- t-test (the value) \geq t-table , it means that H_a was accepted and H_o was rejected.
- t-test (the value) $<$ t-table, it means that H_a was rejected and H_o was accepted.

Interpreting the result of the t-test. Previously, the researcher accounts the degrees of freedom (df) with the formula:⁴⁵

$$df = (N_1 + N_2 - 2)$$

Where :

df : Degrees of freedom

N_1 : Number of subject group 1

N_2 : Number of subject group 2

2 : Number of variable.

After that, the value of df was consulted on the t-table at the level Of significance 1% and 5%. In this study, the researcher used the level of significance at 5%. If the result of t-test was higher than t-table, it means that H_a was accepted and H_o was rejected. But if the result of t-test was lower than t-table, it means that H_a was rejected and H_o was accepted.

⁴⁵Anas Sudjiono, *Pengantar Statistik Pendidikan*, (Jakarta: PT Raja Grafindo Persada, 2000), p. 372.