CHAPTER III

RESEARCH METHOD

In this part, the researcher describe about research methodology that used in conducting the research. It purpose to answer the problem of the study. This chapter consist of: Research design, variable, population and sample, data collecting procedures, instruments of the study, and instrument try out.

A.   Research Design

The study used counterbalanced design. Counterbalancing is usually thought of as a method for controlling order effects in a repeated measures design.The study used counterbalanced design. A counterbalanced design**,** another design that can be used with intact class groups. For example, the experimental class might use methods A and B, respectively, for the first half of the experiment class receives treatments in the order AB, and exchange method for the second half in the order BA. The distinctive feature of this design is that all subjects will receive all experimental treatments but in a different order. In effect, this design involves a series of replications; so at the end of the experiment group will expose to each X.[1]

In a counterbalanced design to control for order effects, we use separate groups of subjects, each group receiving treatments in a different order. If there are two treatments, (say, A and B), Group 1 receives treatments in the order AB, and Group 2

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[1] Donald Ary, Lucy Cheser Jacobs, Chris Sorensen and Asghar Razavieh, Introduction *to Research in Education (Eight Edition)*, United States: Wadsworth Cengage Learning, 2010, p. 647.

receives treatments in the order BA. If you create a group for each possible order, then the variance due to order effects becomes a separate source of variance, making for a more powerful design. [2]

Table 3.1

The scheme of counter balanced procedure

Session	Treatment	
Session 1	Outline	Non Outline
Session 2	Non Outline	Outline

B. Variable of the study

According to Burhan Bugin : variable is the phenomenon that variation in type, quality, quantity, standard pearl.

As the experimental study, there are two variables of the study, they are:

1. The independent variable of study (X) is outline technique that is used in writing descriptive text

2. The dependent variable of the study (Y) is the students' score in writing descriptive text.

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[2]http://www.unc.edu/courses/2008spring/psyc/270/001/counterbalancing.html online on March 5, 2014.

C. Population and Sample

1. Population

Population is the larger group to which a researcher wishes to generalize.[3]The population of this research was all the students of the Eightgrade MTs. An-Nur Palangka Raya. Amount 53 Students in two classes: VIII A and VIII B

Table 3.2

Population of the study

No.	Class	Number
1.	VIII-A	30
2.	VIII-B	23
3.	Total	53

2. Sample

Sample is subset of Individuals or case from within a population.[4]To determine the students as experiment group the writer used cluster sampling. After doing random class the writer will find a class for sampling research. The class is already established, the subject cannot be randomized, it is called quase experiment research.

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[3]John W. Creswell, *Qualitative and Quantitative Approach,* 1994, California: SAGE Publication, Inc, 1994, p. 64.

[4]David Nunan, *Research Methods in Language Learning*, New York: Cambride University Press, 1992, p.231

D.   Research Instrumentation

This part explains the test, as a research instrument, used to collect the data. It covers the types, test construction and test validity and reliability.

The data are very important in the study. The data are needed to prove and support this study. By this collected data, the researcher could measure the effectiveness of outlining strategy in prewriting technique on the students' ability in writing descriptive text at MTs AN-Nur Palangka Raya.

1.   Test Type

A test is a set of stimuli presented to an individual in order to elicit responses on the basis of which a numerical score can be assigned. This score, based on a representative sample of the individual's behavior, is an indicator of the extent to which the subject has the characteristic being measured.[5]The data were needed to prove and support this study. By this collected data, the researcher could measure the effectiveness of outline on writing ability of the eightgrade students of MTs AN-Nur Palangka Raya. The types of the test are in the form of writing test, especially writing descriptive text by using outline technique and without using outline technique Since the research design of this study is counterbalanced design, the writer gives pretest and posttest to the students.

a.   Pretest is a preliminary test that has purpose the measure the students' score in writing before having treatment.

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[5]Donald Ary, Lucy Cheser, Jacobs, Chris Sorensen, Asghar Razavieh, *Introduction ...,* p.201.

b. Posttest is attest given after a lesson or a period of instruction to determine what the students have learned. The purpose of posttest is to measure the students' score in writing after the manipulation has been done by the teacher.

According to Heaton "Test may be constructed primarily as devices to reinforce learning and to motivate student, or primarily as a means of as seeing the student's performance the language.[6]

The researcher collected the main data from pretest and posttest. From the two tests, the researcher could find out the effectiveness of outline technique on writing ability of eightgrade students of MTs AN-Nur Palangka Raya. A pretest gave before treatment. By gave the pretest the researcher compared that scores to the posttest scores which gave after the treatment. A posttest as the last test also gave to get the quantitative data about their writing ability after the researcher taught descriptive text with outline technique.

In this study, the writer applied inter-rater reliability; two raters employed to score the students' writing.

2. **Test Construction**

The test construction is based on the objectives of the study. The study is aimed at finding out the effectiveness of using outline technique in writing descriptive text. To measure the effectiveness of using outline technique in writing descriptive text, the subjects are assigned to write descriptive text and will be corrected by using outline technique. The results of the tests are to measure

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[6] J.B.Heaton,, *Language Testing*, 1987, p. 1.

using statistical analysis and the outcomes are comparing to see the effect of using outline technique in writing descriptive text.

To obtain the appropriate writing test for the aims of the study, the researcher does some types: (1) planning the writing descriptive text test, (2) preparing the writing test, (3) trying out (pre testing) the test and analyzing the results, and (4) carrying out the test.

a. Planning the writing descriptive text test

To produce a good writing test, the writer made a plan on the test construction. In this sense, the objective of giving the test is determined. Then the writer decided the appropriate type of test. The test types and test objective were very close. The test objective could not be achieved without having appropriate test types. Then, the writer cares for the adequacy of the content. The test content should match with the test types and objective. Lastly, the time allocation for the test administration was planned as well as the instruction tried out.

b. Preparing the writing descriptive text test

The writing test was used to elicit the data covering directions and instructions of what the subjects have to do. To make the instruction clear and understood by the students, the instructions were made simple. The instruction is accompany with several alternative topics are the ones the students know and familiar and can develop into compositions.

To construct the test directions, the writer taked into account to guidelines applied by Sabarun in clause as follows: (a) the question should be clear; (b) the

question should be brief; (c) the instruction should be definite; (d) avoid questions requiring yes or no answer; (e) average students should be able to write average answer to questions; (f) the vocabulary used and the concepts expressed in the topic should not be too difficult for the ordinary students to understand to understand immediwalately; and (g) the instruction should provide an organizing principle for composition.[7]

The students' task was to write a descriptive text. The writing instruction was design to measure the students' writing ability. The students' writing ability was scored on the basis of the marking scheme that contains some features or components of writing, such as content, organization, sentence structure and grammar, usage and mechanics of the students' writing. The proposed time allocation to do writing is 80 minutes.

c. **Test Try Out**

In order to prove the test wassuitable to the students who were the sample of this study, the writer would conducted a try out test. Then the writer choosed students in different class to try out the test. Then the writer choosed student in different class to try out the test. The try out the test will conduct to eightgraders of MTs AN-Nurpalangka Raya. If the result was valid, it means the test item as the instrumentation of this study is suitable to be given.

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[7]Sabarun, The Effectiveness of Using Clustering Technique in Writing expository Essays of the Fourth Semester English Department Students of Palangka Raya, Unpublished Individual research Proposal, Palangka Raya: STAIN Palangka Raya, p. 38

3. **Test Instrumen 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, lecture, indicators and test. The types of test items, which would use in this research, can be suitable to the others at the same level of sevent grades students of MTs AN-Nur Palangka Raya.

For face validity of the test items as follow:

1. The test used writing test.

2. The evaluation by essay test based on scoring system.

3. Kind of the essay test is descriptive text.

4. The language of items used English for writing test.

5. The written test was suitable with syllabus of English writing for second year students at MTs AN-Nur Palangka Raya.

2. 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.[8] After the Instrument finished check by the judgment experts, continued testing of construct validity. It is conducted by field test. In order to find the validity, product moment Correlation will use as the formula to calculate from the try-out test result.To measure the validity of the instrument, the writer used the formulation of Product Moment by Pearson as follows[9]:

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

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 students

Furthermore, it was calculated using Test-t calculation below:

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[8] *Ibid*, P. 154
[9] Riduan, *Metode dan teknik Menyusun Thesis,*Bandung: Alfabeta, 2004, p. 110.

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

Where:

t $\quad\quad$ = The value of $t_{observed}$

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

n $\quad\quad$ = 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:

$t_{observed} > t_{table}$ = Valid

$t_{observed} < t_{table}$ = Invalid

To know the validity level of the instrument, the result of the test was

interpreted to the criteria or the correlation $_{index}$ as follows:

0.800 – 1.000 $\quad\quad$ = Very High Validity

0.600 – 0.799 $\quad\quad$ = High Validity

0.400 – 0.599 $\quad\quad$ = Fair Validity

0.200 – 0.399 $\quad\quad$ = Poor Validity

0.000 – 0.199 $\quad\quad$ = Very Poor Validity[10]

The result of validity measurement of test instrument based on the criteria as

follows:[11]

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[10] Ridwan, *Metode dan Teknik Menyusun Thesis*, Bandung: Alfabeta, 2004, p.110.

1. If the value of $t_{observed}$ is greater than t_{table}, it means thet the test item is valid and it can be used as the instrument of the study.

2. If the value of $t_{observed}$ is lower than t_{table}, it menas that the test item is invalid and it cannot be used as the instrument of the study

c. Content Validity

Content validity demands the appropriateness between the ability to be measured and the test being used to measure it.[12]The researcher used writing test for students. The students in this study would write descriptive text from essay test instruction, so the test would really measures the writing ability. The instrument which is using test, the tasting of content validity is done by asking the opinion of the judgment experts about the instrument is able to try out or not.

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.[13] Similarly, Sekaran states that reliability is the extent of consistency and stability of the measuring instrument. In this case, to score composition as fairly and consistently as possible, the researcher uses inter rater method (test of reliability). Inter-rater

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[11]*Ibid*, p. 112

[12] M.Soenardi Djiwandono, *Tes Bahasa dalam Pengajara*n, Indeks, Jakarta. Cetakan pertama, 2008, p. 92.

[13]Donald Ary, Lucy Cheser Jacobs, Chir Sorense, Asghar Razavieh, *Introduction to Research in Education, 8th edition*, Wadsworth: USA, 2010, p.236

reliability is the consistency of the judgment of several raters on how they see a phenomenon or interpret the responses of the subjects.

In this case, the two raters employed the score students' writing. The two raters are the researcher and the English teachers who have lot of experience in teaching English language in senior high school. One important thing in using the inter rater method in rating process is focused with the training of the raters. It can maximize the accuracy of the writing assessment. This makes the raters be consistent in scoring and avoid subjectivity of the raters in scoring. For this purpose, the training is done to get inter rater agreement in order to give reliable scores to students' writing product.

Relevant to this, Nunan states that the acceptance reliability on composition score is possible to get through careful training of raters.[14] Furthermore, Latief argues that reliability on composition is affected by both raters and writers of the text. Raters' reliability refers to the accuracy of the raters' judgment. Meanwhile, writers' reliability refers to the accuracy of the writers' performance.[15]

To obtained inter-rater reliability, the score of two raters were correlated using SPPS program. Then the writer got the interpretation of coefficient correlation, whether they belong to high, moderate, or positive weak negative inter rater reliability category. The obtained coefficient should indicate that the students

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[14]David Nunan, *Research Methods in Language Learning*,Cambridge: Cambridge University Press,1992 , p. 56

[15]M . Latief Adnan, *Reliability of Language Skill Assessment Result*, Jurnal Imu Pendidikan VIII No. 3, 214-224, 2010.

writing product both using clustering technique and without clustering technique have achieved the acceptable level reliability. Calculation result of **r** was compared with **r**$_{table}$ by 5% degree of significance with df=N-2. If **r** was higher than **r**$_{table}$ so it meant reliable and if **r** was lower than **r**$_{table}$ so it meant unreliable. In this case, the writer applied the coefficient correlation and interpretation of inter-rater reliability proposed by Winkle et al as shown in table 3.3.[16]

Table 3.3

Inter-Rater Coefficient Correlation and Interpretation

Correlation Coefficient	Interpretation
.90 to 1.00 or -.90 to -1.00	Very high positive or negative correlation
.70 to .89 or -.70- to -.89	High positive or negative correlation
.50 to .69 or -.50 to -.69	Moderate positive or negative correlation
.30 to .49 or -.30 to -.49	Low positive or negative correlation
.00 to .29 or -.00 to -.29	Little if any correlation

The writer used formula of Kuder and Richardson to measure the reliability of the questionnaire test[17]:

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

Where:

r11 = coefficient alpha

[16] Antony C. Winkle, and Jo Roy Mc Cuen, *Writing the Research Paper*, Orlando: Harcount Brace Jovanic Publisher, 1989, p.35.

[17]Sugiyono. *Metode Penelitian Administrasi*. Bandung, Alfabeta, 2007, p.137

k = number of items

M = the mean score on the test for all the testers

Vt = the standard deviation of all the testers' score

E.   **Data Collection**

To measure the research problem:Does outline technique give effect on writing ability of the eightgrade students at MTs AN-Nur Palangka Raya?

To collect the accurate data in this study, the writer selects the instruments that appropriated for the problem statement:

1. **Documentation**

Documentation method is used to look for the data concerningmatters or the variable that are taken in the form of the note, transcript,book, newspaper, magazine, inscription, notulen, lengger, agenda, etc. itrefers to the archival data that help the writer to collect the needed data. Inthis study, this method is used to get the data that related to the object ofresearch such as students' name list which are included in the population.In this case, the data was gained by the help of the English teacher

2. **Test**

Test is a set of questions or exercises and other tools which areused to measure skill, intelligence, knowledge, and ability those are hadby individual or group.[18] This method is used to get data about score of the pre-test and post-test that was given for both of groups.The test in this study is an essay test. In essay

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[18]*Ibid*, p.150

test of writing, the students were given a free chance to think as much as possible. They can freely express and organize their ideas in written form.

a)   **Pre- test**

Before the teacher teached new material by using outline technique, the teacher gave test to the students. Pre-test was given to the experiment group and the control group. Thes test was given before the experiment applied.

b)   **Post- test**

Post-test was given to the experiment class and the control class. The test was given in order to know the improvement of students' writing abilityin writing report text. The post-test gave to the experiment group and control group after receiving treatment. The experimental groups taught writing descriptivetext using outline technique the control groups taught writing writing descriptivetext without outline technique.

For collecting the data, the researcher used some steps in the procedure as follows:

1. The researcher observed the class

2. The writer determined the class into experimental group and control group.

3. The writer given Pre-Test to experimental group and control group.

In the pretest. the writer was given test for both group; writing test (to measure students writing ability). This test was given for both group to measure and find out their mean before gave treatment.

4. The writer analyzed the result of pre test so that the data gained from the test are valid and reliable.

5. The writer gave treatment to experimental group that taught by outline technique and taught control group using free writing.

6. The writer gave a posttest to the experiment group and control group.

This posttest gave for two groups (Experimental and Control Group).

By using post test, the study was getting the score from both groups.

1. The writer gave score to the data from experiment and control group.

After post test is done by experimental and control group, the writer gave scores combine with the pre test scores of both group.

2. The writer analyzed the data that have been obtained from pretest and posttest.

3. The writer interpreted the analysis result.

The data that analyze should interpret. By interpreting the data analyze, it answers the problem of study.

4. The writer concluded the activity of the study whether the outline technique give effect to the students writing ability by using outline technique or not, based on the obtained.

F. Data Analysis

The data of this is study students' writing ability. Therefore, the data was in quantitative data. The data was analyzed by means of inferential statistics. This statistical analysis is suitable to answer the research problem. In this case, the

researcher applied t test to examine the students' writing ability that tought using outline technique in writing descriptive essay.

1. **Techniques of Data Analysis**

Before analyzing data using T Test, the writer fulfilled the requirements of T Test. They are Normality test, homogeneity test and hypothesis test.

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.In this study to test the normality the researcher applied SPSS 17 program level of significance =5%. Calculation result of asymptotic significance is higher than **α** (5%) so the distribution data was normal. In the contrary, if the result of an asymptotic significance is lower than **α** (5%), it meant the data was not normal distribution.

b. **Homogeneity Test**

Homogeneity is used to know whether experimental group and control group, that are decided, come from population that has relatively same variant or not. To calculate homogeneity testing, the writer applied SPPS 17 program used Levene's testing with level of significance α (5%).

If calculation result was higher than 5% degree of significance so Ha was accepted, it means both groups had homogeneous.

c. **Testing Hypothesis**

The writer applies the t test statistical to test hypothesis with level of

significance 5% t test could be applied to test a difference mean or more. The steps are as follows:

1) Find out the grand mean (X) each group: $\sum X_t^2 = \sum X^2 - (\frac{\sum X^2}{N})$

2) Find out the sum of square among group:

$$SS_t = \sum X^2 - \frac{(\sum X_t)^2)}{N}$$

Where

SS_t = sum of square total

$\sum X^2$ = each score squared, then summed

$(\sum X_t)^2$ = all the scores summed first, then this sum squared

N= number of score

3) The sum of squares between groups

$$SS_b = \frac{(\sum X_1)^2)}{n_1} + \frac{(\sum X_2)^2)}{n_2} - \frac{(\sum X_2)^2)}{N}$$

4) The sum of squares within groups

$$SS_w = SS_t - SS_b$$

5) Find out degree of freedom between group:

$Df_b = G-1$

6) Calculate the between-groups mean square (MSb) :

$$MSb = \frac{SST}{dfb}$$

7) Find out the degree of freedom within group :

Df_w= N-1

8) Calculate within group mean score (MSw) :

$$MSw = \frac{SSb}{dfw}$$

9)Determining the level of significant of $F_{observed}$ by comparing the $F_{observed}$

with the F_{table}.

2.Data Analysis Procedures

To analyze the researcher did same ways in data analysis procedure, they

were as follows:

1. Collected the students' written scores of Pre-test and post- test.

2. Arranged the obtained score into the distribution of frequency of score table.

3. Calculated mean, median, modus, standard deviation and standard error of

    students' score.

4. Measured the normality and homogeneity.

5. Analyzed the data by using t test to answer the problem of the study. In

    addition, the SPPS program is applied.

6. Interpreted the result of analyzing data.

7. Make discussion to clarify the research finding.

8. Gave conclusion.

9. Summary

To sum up, the steps in collecting, analyzing, and hypothesis testing can

be described below. In the first step, the students will give Pre- Test that they

select the topic for descriptive text. The subjects were divided into two groups; experimental group and control group. Experiment group was assigned to write a descriptive text using outline technique and control group without outline technique. Second step, the students writing both using outline technique or without outline technique was scored by two raters. To analyze the data of writing score, independent test was employed. T test is a statistical computation used to test significant difference between within group and between groups. Before testing the hypothesis, normality and homogeneity measured to fulfill the assumptions. Third step, the researcher hypothesis would be test to answer the research problem. Lastly, discussion on the results was made to clarify the finding, as described in figure bellow.

Figure 3.1 Steps of Collecting, Data Analysis Procedure and Testing Hypothesis

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                          ┌──────────────────────┐
                          │     Writing Class     │
                          └──────────┬───────────┘
                                     │
                          ┌──────────▼───────────┐
                          │ Writing Descriptive Text │
                          └──────────────────────┘
             ┌────────────────────┴────────────────────┐
    ┌────────▼─────────┐                       ┌────────▼─────────┐
    │ Experiment Group │                       │   Control Group  │
    └────────┬─────────┘                       └────────┬─────────┘
             │                                          │
    ┌────────▼─────┐     ┌──────────┐          ┌────────▼─────┐
    │   Pre-Test   ├────►│ Scoring  │◄─────────┤   Pre-Test   │
    └────────┬─────┘     └──────────┘          └────────┬─────┘
             │                                          │
 ┌───────────▼──────────┐              ┌────────────────▼──────────┐
 │ Treatment by Taught  │              │ Teaching Used Freewriting │
 │  Outline Technique   │              │        Technique          │
 └───────────┬──────────┘              └────────────────┬──────────┘
             │                                          │
    ┌────────▼─────┐     ┌──────────┐          ┌────────▼─────┐
    │  Post-Test   ├────►│ Scoring  │◄─────────┤  Post-Test   │
    └──────────────┘     └────┬─────┘          └──────────────┘
                              │
          ┌───────────────────▼────────────────────┐
          │ Measuring Normality and Homogeneity     │
          └───────────────────┬────────────────────┘
                              │
          ┌───────────────────▼────────────────────┐
          │ Testing Hypothesis Using T Test         │
          └───────┬─────────────────────────────────┘
                  │
    ┌─────────────▼──┐     ┌────────────┐     ┌────────────┐
    │ Interpretation ├────►│ Discussion ├────►│ Conclusion │
    └────────────────┘     └────────────┘     └────────────┘
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