

CHAPTER III

RESEARCH METHOD

Research methodology is the most significant aspect in conducting a research. It includes the research design, population and sample, data collection and data analysis.

3.1 Research Design

The design of this study is quasi experimental design because random process to control group and experimental group cannot be applied. This research consists of two groups. There are experimental group and control group. The experimental group is the group which is applied with the strategy that is chosen by researcher and the control group is not. Both of groups are given the same of pre-test and post-test and also the same material. After giving pre-test, the researcher can analyze the data and can divide which group will be experimental group and control group. For the experimental group, the researcher will give treatment by applying blended strategy but control group is without given a treatment just taught as like usual by applying traditional strategy. The design of pre-test and post-test in the experimental group is:

Group	Pre-test	Treatment	Post-test
E	X1	T	X2
C	X1	-	X2

Table 3.1 Quasi Experiment Design

Remarks:

E : The experimental group (which given a treatment)

C : The control group (which not given a treatment)

X1 : The pre-test (before the experimental treatment)

T : The treatment

X2 : The post-test (after giving a treatment)

3.2 Population and Sample

Arikunto (2004: 115) stated that population is all subjects of a research.

Sekaran (2000: 266) wrote that population refers the entire group of people, events, or things of interest that the researcher wishes to investigate. Based on these two theories, it can be concluded that population is all subjects or individuals with certain characteristics that will be analyzed. In this study, the population is 10th grade students of MA MA'ARIF NU Sidomukti. Researcher chooses this grade as the population because in the tenth grade there is procedure text.

Sekaran (2000: 267) wrote that a sample is a subset of the population. It comprises some members selected from the population. To determine the sample of this research, the researcher uses population sampling technique. Population sampling technique is used if the total of population is used as sample. Two classes of 10th grade students were taken as the sample of this study. Those are X-A as the control group and X-B as the experiment group.

3.3 Data Collection Technique

Data collection is the process of gathering and measuring information.

There are some stages to collect data such as:

3.3.1 Instrument of the study

Instrument is a tool that used to collect the data. It is the most important component of the research design because the researcher uses it to collect the valid data or information from research instrument. Without instrument, the researcher cannot collect the valid data.

3.3.1.1 Test

Instrument that will be used to collect the data in this study is test. Test is a set of techniques, procedures, and items that constitute an instrument of some sorts that requires performance or activity on the part of the test taker. There are two tests that are given to the both experimental and control groups, those are pre-test and post-test.

3.3.1.1.1 Pre-Test

Before applying a treatment, the researcher arranges pre-test to the subject. Pre-test is arranged in both experimental and control group. Pre-test is used to know the ability of the students in writing procedure text. The researcher gives the students 60 minutes to finishing their pre-test. Pre-test is used to know the students' ability before giving treatment.

3.3.1.1.2 Post-Test

Post-test is used to know the improvement of the students' ability after getting a treatment. The researcher gives the students 60 minutes to finishing their post-test. The researcher will give some topics about procedure text and the participant can choose one of them. They should write their procedure text.

3.3.2 Procedure of Data Collection

The data of this study is in form of number. The data is collected through a test. The test is used to investigate the students' ability in writing. The researcher uses pre-test and post-test in this study. The data of this study consists of primary and supporting data. The primary data is taken from the students' writing ability test. The researcher chooses the subject and divides groups as experimental and control group. Experiment group is a group which is taught by applying blended strategy and control group is a group which is not taught by applying blended strategy. The teacher collects the result of pre test.

The last stage of collecting the data is using post-test. Post-test is given in both experimental and control group. Post-test is used in order to know whether or not there is a significant difference between students' ability in writing procedure text before and after treatment such us in terms of content and vocabulary. The students in control class get the post-test after they are taught without getting a treatment. The time to the post-test is appropriate with the schedule. They work individually in doing post-test. The last is analyzing the data from pre-test and post-test by using SPSS 16.0 program.

This is a brief schedule for teaching procedure text in experimental group and control group:

Date	Agenda
1st December 2016	Giving pre-test in experimental and control group.
2nd December 2016	Giving treatment.
3rd December 2016	Giving treatment.
5th December 2016	Giving treatment.
6th December 2016	Giving treatment.
9th December 2016	Giving post-test in experimental and control group.

Table 3.2 Schedule

3.3.3 Validity

In this study the test is analyzed by using content validity. The content validity is measured by relating the content of the instrument in Indonesian curriculum. Content validity is not always in numeric form but it can be determined whether the items reflect the course and objective in curriculum guide, syllabus, and course books. To test the content validity, the researcher compares the content of the instrument of the subject based on English curriculum and English syllabus. If the content of the test reflected the curriculum guide, syllabus and course books, so it can be said that the test is valid. The researcher conducts the pre-test when the test's content can be said valid.

BASIC	SUB BASIC	QUESTIONS	
COMPETENCE	COMPETENCE	PRE-TEST	POST-TEST
6.1 Expressing	6.1.2 Expressing	1. Write a	1. Write a

meaning and rhetorical steps accurately, fluently and in accordance with the use of variation in written language in the contexts of everyday life in texts such as:	meaning and rhetorical steps accurately, fluently and in accordance with the use of variation in written language in the contexts of everyday life in texts such as:	procedure text with free theme based on the generic structure and language feature appropriately.	procedure text using one of the following title based on the generic structure and language feature appropriately.
Recount,			a. How to Open Microsoft Word
Narrative, and			b. How to Use a Blender
Procedure.	Procedure.		c. How to Make Gado-gado
			d. How to Make Fried Chicken
			e. How to Make a Kite

Table 3.3 Analyzing Content Validity

3.4 Scoring Guide

According to Brown and Bailey (1984) in Brown (2004) designed an analytical scoring scale that specified five major categories and description of five

different levels in each category, ranging from “unacceptable” to “excellent”. The order in which the five categories (content, organization, vocabulary, grammar, and mechanism).

In this research, the researcher uses three raters to score the test. The first rate is the researcher herself, the second rater is the teacher from that school and the last rater is the other English teacher in the school. The researcher gives the score for the students’ composition based on the table below:

No	Aspect	Score	Criteria
1	Content	30	All sentences are relevant and support the topic, the ideas can deliver well.
		24	Ideas are not well organized but all sentences are relevant and support the topic.
		18	Some lacks of relevant sentences and re-reading required for clarification of ideas.
		12	Individual ideas may be clear but very difficult to connect between them.
		6	Difficult to understand ideas and have many lacks of relevant sentences.
		20	Very easy to understand and all of the generic structure are correctly and clearly stated.
		16	Mostly easy to understand and some of generic structure of procedure text are

2	Organization	placed incorrectly.
	12	Not too hard to understand one of the generic structure of procedure text are not stated.
	8	An effort needed to understand and two of the generic structures of procedure text are not stated.
	4	Very hard to understand and have many unstated generic structure in procedure text.
	20	Use of wide range of vocabulary taught previously
	16	Good use of new word acquired, procedural appropriate synonyms.
	12	Attempt to use words acquired procedural appropriate vocabulary on the whole but sometimes restricted.
3	Vocabulary	
	8	Restricted vocabulary and use a synonym (but not always appropriate), imprecise and vague, affect meaning.
	4	Very restrict vocabulary and inappropriate use of synonym seriously hinders communication.
	20	Mastery of grammar (present tense) taught on course – only 1-2 minor mistakes.

		16	A few minor mistakes only (preposition, articles, etc).
		12	Only 1 or 2 major mistakes but a few minor ones (present tense).
4	Grammar	8	Major mistakes lead to difficulty in understanding and lack of mastery of sentence construction (present tense).
		4	Numerous serious mistakes and no mastery of sentence construction (present tense).
		10	No errors in spelling.
		8	Only 1 or 2 minor errors in spelling.
		6	Several errors in spelling and a few words very hard to recognize.
5	Mechanics	4	Several errors in spelling and some words very hard to recognize.
		2	Numerous errors, hard to recognize many words.

Table 3.4 Scoring Guide

3.5 Data Analysis Technique

After getting the data during the experiment process, the researcher compares the result of the pre-test and post-test. The score of pre-test and post-test are analyzed using t-test formula to know about the significant differences between the experiment group and control group to answer the hypothesis.

3.5.1 Homogeneity Test of Variance

The analysis of variance, assume that variances are equal across groups or sample. For homogeneity test, the researcher uses Levine's test of homogeneity in SPSS 16.0 version. The test of Levine's test, or P, defines as follow:

$$P = \frac{(N - k) \sum_{i=1}^k N_i (Z_i - Z..)^2}{(k - 1) \sum_{i=1}^k \sum_{j=1}^{N_i} (Y_{ij} - \bar{Y}_i)^2}$$

The symbols defined as follow:

P : the result of the test

K : the number of different groups which the sample belong

N : the total number of sample

N_i : the number of sample in the i^{th} group

Y_{ij} : the value of the j^{th} sample from i^{th} group

Z_{ij} : $\begin{cases} |Y_{ij} - \bar{Y}_i| / \bar{Y}_i & \text{is a mean of } i^{\text{th}} \text{ group} \\ |Y_{ij} - \bar{Y}_i| / \bar{Y}_i & \text{is median of } i^{\text{th}} \text{ group} \end{cases}$

The significance of P is tested against F (α , $k - 1$, $N - k$) where F is a quintile of the F test distribution, with $k - 1$ and $N - k$ its degrees of freedom, and α is the chosen level of significance (0,05).

To analyze the homogeneity, the researcher uses SPSS (Statistical Product and Service Solutions) version 16.00 by Levine's test with the some steps. The first step is collecting the pre test data both experimental and control groups using the data view. The second step is analyzing menu, selecting compare means, and then choosing independents sample t-test. The last step is interpreting the homogeneity test output, the researcher needs to see Levine's test Column to

know whether the equality of variances in the groups of scores were homogeneity or not.

3.5.2 Hypothesis Testing

Independent t-test was used to know the significant difference between experimental and control group will be accepted or rejected. Here were the steps of t-test calculation: Hypothesis testing in this research was:

H0: There is no significant difference on the use of blended strategy in writing between experiment and control groups.

H1: There is significant difference on the use of blended strategy in writing between experiment and control groups.

Then, finding t-value using independent t-test formula and comparing the probability with the level of significance for testing the hypothesis. Determining t-critical in table t- (0,05) df, the researcher compares t-observed and t-critical. If $t_{obs} < t_{critical}$, the researcher should accept the null hypothesis and if $t_{obs} > t_{critical}$, it means the researcher can reject the null hypothesis. In another word, the researcher can accept the alternative hypothesis.

T-test is calculated to find out the comparison of two means between experimental and control group pre and post test. In analyzing the data, the researcher uses independent t-test formula. The formula in calculating t-test is:

$$t = \frac{(\bar{X}_1 - \bar{X}_2) - (\mu_1 - \mu_2)}{S_{\bar{X}_1 - \bar{X}_2}}$$

Where :

$$S_{\bar{X}_1 - \bar{X}_2} = \sqrt{\frac{S^2_{pooled}}{n_1} + \frac{S^2_{pooled}}{n_2}}$$

Pooled variance: the average of the two sample variances, allowing the larger sample to weight more heavily.

Formula:

Estimated Standard Error of the Difference

$$S_{\bar{X}_1 - \bar{X}_2} = \sqrt{\left(\frac{SS_1 + SS_2}{n_1 + n_2 - 2}\right) \left(\frac{1}{n_1} + \frac{1}{n_2}\right)}$$

The results of the tests are subjected for the following statistical procedures. To calculate t-test, the researcher uses SPSS (Statistical Product and Service Solution) version 16.00. The post test score experimental and control groups are analyzed by using SPSS version 16.00 with the following procedures. The first procedure is inserting the post test data of both experimental and control group using the data view. The second procedures is going to the analyze menu, selecting compare mean, and then choosing independent sample t-test. The last procedure is interpreting t-test output. From interpreting t-test output, automatically it could answer to the research question about the comparison between two groups. The final result is collected by means of pre-test and post-test score. It is aimed to find out the significance on the effect of blended strategy in writing procedure text.