# CHAPTER III

## RESEARCH METHOD

This chapter presents the research method. It focuses on research design, population and sample, research instrument, validity and reliability testing, research procedure, data collecting, and data analysis.

### A. Research Design

A research design is the set of methods and procedures used in collecting and analyzing measures of the variables specified in the research problem. The design of a study defines the study type such as descriptive, correlative, semi-experimental, experimental, review etc. Research design is the framework that has been created to find answer to research questions.

This study uses quasi-experimental design. Ary (2010: 316) stated that quasi-experimental design are similar to randomized experimental designs in that they involve manipulation of an independent variable but differ in that subjects are not randomly assigned to treat groups. According to Creswell (2003:18) design is including as quantitative research. A quantitative approach is one in which the investigator primarily uses post positivist claims for developing knowledge (i.e,. cause and effect thinking, reduction to specific variables and hypotheses and questions, use of measurement and observation and the test of the theories).

The researcher used quasi-experimental design with two groups of students because the researcher wants to know wether the strategy of teaching effective or not in two groups of students. The design of this research can be seen at table below:

**Table 3.1 Nonrandomized Control Group, Pretest-Posttest Design**

| Group | Pretest | Independent Variable | Posttest |
|---|---|---|---|
| E | $Y_1$ | X | $Y_2$ |
| C | $Y_1$ | - | $Y_2$ |

The procedures of quasi-experimental research are;

1. Preparing two groups of students which one for control group (B) and the other for experience's group (A).
2. Administering pretest both two groups A and B with a purpose of measuring writing achievement of the second grade of Senior High School before given treatment.
3. Applying the experimental treatment of teaching writing by using four corners strategy for group A at the second grade student of Senior High School.
4. Administering posttest for both goups A and B with a purpose of measuring writing achievement of the second grade of Senior High School after given treatment.

## B. Population, Sampling Technique and Sample

According to McMillan (1996:85) states that a population is a group is a group of elements or cases whether individuals, objects, or events that conform to specific criteria and to which we intend to generalize the results of the researcher. For a research that requires a large population for the source of the data, the first step is to define the target population. The target population of this study is all second grade 132 students of Senior High School 1 Kampak, Trenggalek.

A sample as small group of people selected to represent the much larger entire population from which it is drawn. By studying the sample it is hoped to draw valid conclusion about the large group. A sample is generally selected for study because the population is too large to be studied in its entirety. The sample should be representative of general population (Charles, C.M 1995:96)

In choosing sample, the researcher used a certain sampling technique. The purpose of sampling is to obtain a group of subjects who will representative of larger population or will provide specific information needed. In this research the researcher used purposive sampling in choosing sample. Ary, (2010:156) stated purposive sampling also referred to as judgment sampling. Sample elements judged to be typical or representative are chosen from population.

In this research, the researcher took two classes of the second grade students Senior High School 1 Kampak Trenggalek. So, there were 44 students to be the sample. It was divided into experimental group and control group. The researcher

chose class IPA 1 and IPA 2 by using purposive sampling, because those two classes nearly have the same ability, so the effect of treatment can be known clearly. The experimental group was taught by using four corners strategy. On the other hand, the control group was taught with conventional teaching strategy.

The researcher took a certain school to conduct the study. It is Senior High School 1 Kampak Trenggalek , especially for the students in class IPA 1 and IPA 2 in the academic year 2018-2019. The study is done in March1$^{th}$ up to March29$^{th}$2018.

## C. Research Variable

1. Variable

Variable is the condition or characteristic that the researcher manipulates, control or observes. According to John (1981:59)there were two kinds of variables in this study:

a. Independent Variable (x)

Independent variable is the condition or characteristic that the researcher manipulates in his or her attempt to ascertain relationship to observe phenomena. In this research the independent variable is the use four corners as teaching strategy.

b. Dependent Variable (y)

Dependent variable is the conditions or characteristic that appear, disappear, or change as the researcher introduces, removes, or changes

independent variable. Dependent variable in this research was students' achievement in writing skill.

## D. Research Instrument

The important function in this research is instrument. Frankel (2005:112) states "Instrument is the device which is uses by researcher". According to Subagiyo (2007:53) actually there are two kinds of instruments; test instrument to measure students' achievement and non-test instrument used to measure attitude. In this research the researcher used test in order to measure the students' achievement.

The instrument which is used in collecting data is in the form of written test since there was no other direct measurement of the students' speaking ability except asking them to make essay. Through the test, the students are asked to write based on the topic and instruction given. It has appropriate with activity in the treatment where students have to choose four choices such as agree, strongly agree, disagree, strongly disagree by critically thinking their idea through the topic that teacher gave in learning writing.

The test was conducted twice. The pretest was given before giving the treatment and posttest was given after giving the treatment. The format level difficulty of pretest and posttest was same but it contain of different topic. In assessing students' writing skill the researcher modified according rubric by Hamp-Lyonsas attached (see appendix)

Students in control and experimental are provided with the same form of test containing about written, total score is 25 with point in each element. In this paper, the writer quoted the one that used by Brown as it has 1-10 or 10-100 range of point as stated in the guidelines of scoring speaking skill. To make easier to calculate, the score is converted into 100 point scale by multiplying it. It contains 3 aspects with 25 total score. It means that in every item has 3 points if they are good in writing. These aspects are organization and arguments, richness content, position, introduction. It is administered with a time limitation, twenty minutes for every student.

By giving some statement to both group IPA 1 and IPA 2 which class consist of 22 students as treatment group and 22 students as control group. The test have to finish during 90 minutes. The instrument is used by the researcher is test. The test was administered on pre-test and post-test. Both of pre-test and post-test student were asked to make a test about an analytical exposition. In pre-test the students face the same test, they have to make an essay about four topics or statement which is given by the researcher. They are " technology make us more alone, money can buy your happiness, homework make students better achievement. Students have to choose one of the topics to make their essay at least 200 words.

## E. Validity and Reliability Testing

To know whether the test is good or not, there are two important characteristics that should to be considered:

### 1. Validity

Grolund (1998:226) “the extent to which inferences made from assessment results are appropriate, meaningful and useful terms of the assessment based on Language Assessment-*principle and classroom practices* (Brown 2003:22) . There are four types of validity that can be discussed in relation to reach; four types of validity, content validity and criterion related validity, construct related validity and face validity.

a. Content Validity

Content validity is a kind of validity which on careful analysis of language being tasted and of particular test. In the content validity, the coverage of task becomes the evidence. A test will have content validity if it represents sample of language skills. The researcher adjusted the test with the learning syllabus that contains of standard competence and basic competence. The content validity in this research can be showed as follow:

**Table 3.3 Content Validity**

| Standard Competence | Basic Competence |
|---|---|
| Comprehending, applying, and analyzing factual, conceptual, procedural, and metacognitive knowledge based on their curiosity about science, technology, arts, culture, and humanities with the insights of humanity, nationality, state and civilization on the causes of phenomena and events, and | 4.4 Analytical exposition text.<br>4.4.1 Comprehending the meaning contextually related to social function, text structure, and linguistic features of analytical exposition text spoken or written regarding to actual issues. |

| | | |
|---|---|---|
| applying procedural knowledge in the field of specific studies in accordance with the talents and interests to solve problems. | | |
| Indicator | Writing Task | Rubric |
| 3.4.1. Creating an analytical exposition essay based on the mind map.<br>3.4.2. Persuading the audience about a certain topic through the writing. | Prompt: Choose whether agree, strongly agree, disagree, or strongly disagree.<br><br>Topic: money is more important than science, corruptor in Indonesia shall be put to death, minister of education initiated the full-day School for primary and JHS | Students were Content, organization, vocabulary, language use, mechanics<br><br>*Standard of performance:*<br>Very good (25-21)<br>Good (20-17)<br>Fair (16-13)<br>Poor (12-9)<br>Very Poor (8-5) |

b. Construct Validity

The construct validity of test is test in which is capable of measuring certain specific characteristic in accordance with a theory of language behavior and learning (Heaton, 1975:159). Construct validity is one kind of validity that is measures the ability which is supposed to measure. For writing test, it should have such knowledge of sub-abilities of writing such as social function, generic structure. The sub-abilities only can be measured if the form of written test. Thus, the pre-test and post-test used four corners strategy, in which students have to decided whether, agree, strongly agree, disagree or strongly disagree based on statement given. Therefore, it can be said that these test has construct validity because the product of test is in the form writing.

c. Face Validity

A test is said to have face validity if it measures what is supposed to measure. Face validity is hardly a scientific concept that is very important. A test which wasn't has face validity may not be accepted. In this test, these are some aspects that were considered from this test to make a good test based on the validity.

1) The instruction must be clear for the students, what they should do in test.
2) In this test, the students of second grade are instructed to choose four corners that in each corners has different opinion representative such as agree, strongly agree, disagree, or strongly disagree by statement given from teacher. Thus the degree of difficulty of the test must be suitable with their level.
3) The consideration of time allocation must be clearly. The researcher gave limited time about twenty minutes for each student.

**2. Reliability**

According to Harris (1969:14) reliability is necessary characteristic of any good test for it to be valid at all. Reliability the stability of tests scores; a test cannot measure anything well unless it measures consistently. It is the next way to measure the test or instrument. Kuder-Richardson reliability formula is used to get Kuder-Richardson it requires test administration only once. An instrument should be reliable means that the result of two occasion treatment has similar result. In this study, the test called reliable if the result score of pre-test and post-test is similar, consistent and dependable the differences result is not too far. According to Perry

(2005;143) reliability is consistency of the date result. We cannot have a valid instrument that is not reliable. If a measurement produce has low reliability, its validity will be low.

The researcher had been tried out the instrument first before administering the test. The purpose is to know the reliability of the instrument. The researcher use inter-rater reliability, where two raters do scoring in one test. The one rater is researcher itself and the other one is English teacher from SMA Negeri 1 Kampak, Trenggalek. Then, the score is processed by SPSS 16.0 version by using Cronbach's Alpha model. The reliability is based on the following roles:

1. If α score > rtable in score signification 5% so, the test items are reliable.

2. If α score < rtable in score signification 5% so, the test items are not reliable.

The result can be seen below

**Table. 3.4. Reliability Statistic**

**Reliability Statistics**

| Cronbach's Alpha | N of Items |
|---|---|
| .824 | 5 |

From the table above, the value of reliability coefficient is 0,824. Hence, the instrument is valid because it closes to 1.00. Perry (2005;130) explain a coefficient of 1.00 indicate that there is perfect reliability or consistency.

## F. Data Collecting Method

The data collecting methods and instrument are needed to obtain the research data. The method of collecting data used in this research was administering data test. According to Ary (1985:189) the test is a set of stimuli presented to individual in order to elicit responses on the basis of which a numerical score a be assigned.

Data of this study are collected by the way of observing. Researcher has her own guide and rubric to measure students' writing ability. There are pre-test and post-test to know whether the strategy of teaching effective or not. In stage of pre-test researcher who is helped by English teacher give a statement both in control and treatment group without using four corners teaching strategy. They are allowed to write down their opinion in piece of paper.

1. Pre-test

Pre-test was given before giving treatment in experimental research study or before teaching by using Four Corners strategy. The pre-test had done to get writing score of students before doing treatment. The pre-test conducted on March 5$^{th}$, 2018 in class control followed by 22 students. Pre-test in experimental group was conducted on March 6$^{th}$, 2018 followed by 22 students.

2. Post-test

Post-test was given after doing Four Corners strategy as a treatment to students. The post-test was conducted on March 22$^{nd}$, 2018 in class experimental followed

by 22 students. Then post-test in control group was conducted on March 24th 2018 followed by 22 students. The questions of post-test are similar from pre-test and consists an instruction, in the form of essay. The test consists of instruction to make 200 words in form of essay.

## G. Treatment

After giving a pre-test, the researcher gave treatments to the students. The first treatment was given on March 8th, 2018 and the second treatment on March 15th, 2018. The treatment conducted in two times, because material about analytical exposition has done explained by the English teacher in first semester. So, the researcher didn't need more meeting to cover the material.

## H. Normality and Homogeneity Testing

### 1. Normality Testing

Normality testing is used to examine whether a data set is well-modeled by a normal distribution or not. According to Perry (2005:248) Normal distribution is a symmetrical, bell-shaped distribution of data that has specific properties and used as reference point for comparing the shapes of data distribution.

A test is called normal if the result indicate that few numbers of participants are the right and left tails and most of participants are the middle. It shows the symmetrical and one cluster of the data in the middle. To investigate the normally testing, the researcher use *Kolmogorov-Smirnov* test by using SPSS 16.0 program.

a. Testing data of pre-test treatment group

**Tests of Normality**

| | Shapiro-Wilk | | |
|---|---|---|---|
| | Statistic | df | Sig. |
| SCORE | .919 | 22 | .073 |

a. Lilliefors Significance Correction

b. Testing data of pre-test control group

**Tests of Normality**

| | Shapiro-Wilk | | |
|---|---|---|---|
| | Statistic | df | Sig. |
| Score | .923 | 22 | .086 |

a. Lilliefors Significance Correction

Based on the SPSS result above there is known the significant values of pre-test are 0.73 for experiment group and 0.86 for control group. Both of those significant value are bigger than 0.05. in testing the hypotheses, the data is in normal distribution if $H_0$ is not rejected. $H_0$ is not rejected if the significance value is higher than 0.05. on the contrary, if the significance value less than 0.05 the $H_0$ is rejected. The hypotheses are below:

$H_0$ : Data is normal distribution

$H_1$ : Data is not in normal distribution

From the analysis above, the significance are known higher than 0.05, $H_0$ is not rejected and $H_1$ is rejected and the data is in normal distribution. It can interpret that the data are in normal distribution.

**2. Homogeneity Testing**

Homogeneity testing is used to know homogeneous or not the variance of the two samples from the same population. According to Nurgiyantoro (2004:2016) states that in examining the homogeneity of variance should do testing of variance of the distribution score of group involved. Homogeneity testing was done after doing normality testing. The variance can be said homogeneous if the significance of the result more than 0.050.The significant value of data shown about 0.168. It means the analysis can be shown below:

**Table 3.6 Homogeneity testing**

**Test of Homogeneity of Variances**

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| Levene Statistic | df1 | df2 | Sig. |
|---|---|---|---|
| 1.964 | 1 | 42 | .168 |

## I. Data Analysis

In this research, the researcher used a quantitative data analysis technique to know the students writing achievement before and after being taught by four corners strategy. The quantitative data was analyzed by using statistical method. Here, the

researcher conducted test to the students before and after taught by applying four corners strategy. The result of the test was compared to know whether there is significant of the students' writing score. Therefore, the researcher used paired sample T test at SPSS 1.6 for windows to analyze the data. The researcher used Independent Sample T-Test, because the researcher will be compare means of two independent samples. This technique is used to find the significant difference of students' achievement both of classes. The first data is students' score scores thought by using four corners strategy and the second data is students' score taught by conventional strategy.

Making conclusion, if Null hypothesis (Ho) is rejected it means there is significance difference of students' achievement before and after taught by using Four Corners Strategy and in contrary.