CHAPTER III

RESEARCH METHODOLOGY

This chapter presents the research method. It discusses the method used in conducting this study. The discussion research design, population, sampling, and sample, research instrument, validity, reliability and data analysis.

A. Research Design

In this research the researcher uses design of experimental research design; pretest-posttest design (Ary et al., 2010:316). On the other hand, Gay (1992) says that "Research is the formal systematic application of scientific method to the study of problems. It means that a research needs a scientific method that is available to use, such as experimental research, historical research, descriptive research, action research, etc.

Research method refers to the general strategy followed in gathering and analyzing the data necessary for answering the question at hand. This research intended to investigate the effectiveness of using Stick Figures on the students' achievement of writing recount text at first year students of senior high school (MA) Darul Huda Wonodadi Blitar.

In this research, the researcher used pre-experimental design with one sample, pre-test and post-test. The researcher used the same subjects pre-test and post-test by giving different treatment phases in the different time and length of experiment period can be extended until the behavior stability.

This research used pre-experimental design by comparing between the result of pre-test and post-test. The writing recount text before teach by Stick Figures was indicated as the pre-test. The writing recount text after being taught using Stick Figures was indicated as the post-test. Both the pre-test and the post-test in this study were taken from the same subject. The design of the research is also shown in the figure below.

Table 3.1

Pre-experimental	Pre-test	Treatment	Post-test
Class X IIS	Y1	X	Y2

X: Stick Figure

Y: Students' achievement on writing ability about recount text before taught by using Stick Figure

Y2: Students' achievement on writing ability about recount text after taught by using Stick Figure.

1. Description of the treatment

   In this research, the researcher used Stick Figure in teaching writing in the form of recount text as the treatment of this research. The researcher used Stick Figure in teaching writing because it is the best way to teach writing by applying Stick Figure to make the students more interest and enthusiast. The step in teaching writing by using Stick Figure in this research as below:

   a. Before the researcher gives the treatment, the researcher gave the pre-test to know students' writing before applying Stick Figure

   b. After knowing the students' ability of writing the researcher asked the students to make Stick Figure about recount text, after the students make a Stick Figure, the teacher asks the students to make recount text

   c. At the end of the meeting, the researcher gave post-test to measure students' achievement in writing after teaching them through Stick Figure to know the result of the treatment.

   The researcher intended to investigate the effectiveness of using Stick Figure on students' writing recount text at first grade of senior high school. By applying the treatment was to know whether the scores are increasing or not. Pre-test and post-test were given to measure if there were significant difference scores before and after the students

being taught by using Stick Figure. So, the researcher knows about the effectiveness when the students' get scores.

B.   Population And Sample Of The Study

Arikunto (2006:130) a population can be defined as the subject of research including all people or items. According to Gay (1992:124) population is the group of interest to the researcher, the group which she or he would like the result of the study to realizable. The population can be said as subject or objects that have character and quality. Based on the title, the population of this research is the first grade students of MA Darul Huda academic year 2018/2019.

From the previous study mentioned used different kinds of sample, and this study was chosen randomly through sampling for analysis. In simple random, each population has the same opportunity to be chosen. The way for choosing the researcher make lottery until 2 numbers then the researcher chose 1 for one group pre and post-test. This research, the researcher took X IIS as a sample of the experimental group. There are 34 students in X IIS, which consist of 8 male and 26 female.

C.   Research instrument

An instrument is a tool which uses many kinds of methods at the time of the research. An instrument is a tool for measuring, observing, or documenting quantitative data (Creswell, 2012: 151). Generally, there are two kinds of instruments namely test and non-test.

According to Arikunto (2013: 192), there are some instruments of collecting data, such as test, questionnaire, interview, observation, and documentation. In this research, the researcher used a test that consists of pre-test and post-test in getting data. The test in the form of essays. The test was intended to know how effective Stick Figure for teaching writing.

There are four steps that carried out by the researcher to collect the data:

1. Preparing the research instrument

   The researcher prepared the research instrument to collect the data and to analyze them. This test is designed to measure students' language and skill progress in relation to the syllabus they follow.

2. Giving pre-test

   This test was conducted at the beginning of the experiment. It is done to know the students' ability before getting treatment. The test contains 4 essays.

3. Conducting the treatment

   In this step, the researcher gives treatment to the students. The treatment is given to the pre experimental group. In the treatment of the pre experimental group, the researcher used Stick Figure in teaching writing.

4. Post-test

Post-test is given after learning has been occurred or is supposed to have occurred in teaching. This test is conducted after giving treatment to the students. It is done to know the writing ability. So the researcher could use quantitative data analysis, and the researcher could analyze the data by using the statistical technique. In this research, the researcher used T-test. It is one of the statistical tests used to know "there is/there is no" different from two variable.

D.   **Validity and Reliability**

1. Validity

Validity refers to the precise measurements of the test. Validity is defined as the extent to which the instrument measures what it supposes to measure. It means that a valid test of the subject would measure the subject itself. For instance, the validation of the dialogue will measure pronunciation, grammar, and vocabulary, but more attention to pronunciation and fluency in English. According to Gay (1992:154), validity is totally indispensable; there is no quality or virtue of a test that can compensate for inadequate validity. Another definition, Gay (1992) explains validity is the degree to which a test measures, what it is supposed to measure. It means using the valid instrument is very supposed to determine the validity of data. According to Isnawati (2012:27) there are four types of validity: 1) Content validity, 2) Criterion-Related Validity and 3) construct validity 4) Face Validity.

In this research, the researcher made a test based on the objectives of syllabus so that it was not out of contents and the content validity is the degree to which a test measures an intended content area and the test must appropriate with the grade. The tryout the test of this research had content validity because the items were taken from sources for first-grade students in MA Darul Huda Wonodadi Blitar.

a) Content Validity

According to Nurcahyani (2018), content validity is the congruity of the instrument between the curriculum objective and the objectives being assessed. In this research, the instrument had had content validity because the instrument was designed based on the basic competence of the curriculum of 2013. The researcher should ensure the essentials of the main topic to be covered. In content validity involves careful analysis of language that being tested and specific test. The content of the test will have content validity if it related with the purpose of the test. Therefore, the instrument of this research was designed based on senior high school Syllabus 2013 revision 2017 arranged in a blueprint below:

Table 3.2

Blueprint of Test

Skill   : Writing

Material : Recount Text

School   : Islamic Senior High School 10th grade

The competence measured:

   1.7 Menyusun teks recount lisan dan tulis, pendek dan sederhana, terkait

        peristiwa/pengalaman, dengan memperhatikan fungsi social, struktur teks, dan

        unsur kebahasaan, secara benar dan sesuai konteks.

Construct	Dimension	Indicator
Social Function	Arrange recount writing purpose	Be able to make retell events in order to inform or entertain others about stories in the past.
Structure of Text	Orientation	Be able to determine who are involved in the story. Be able to write down clearly time and place of the story takes place.
	Events	Be able to describing completely what happened in the story in chronological sequence.
	Re-orientation	Be able to write the feelings/opinion about the story.
Language	Grammar	Be able to arrange the sentence

Features		using past tense. Be able to using personal participant; I, my, etc.
	Vocabulary	Be able to arrange sentence using linking verb (was, were, saw). Be able to arrange sentence using action verb (look, go, change).
	Chronological order	Be able to arrange paragraph with the suitable conjunction.

b) Construct Validity

Construct validity is to measure the instrument. It means the instrument is said to have construct validity if it can measure what to be measured. In this research, the researcher tested the students' writing by giving essay.

2. Reliability

Reliability is the consistency of the measurements or the degree to which an instrument measure the same way its time it is used under the same condition with the same subject. Reliability shows the consistency and stability of the measurement score (Sarwono, 2006: 219). It means

that the reliability of the instrument is needed to make sure that the instrument can be consistent if used in other time. Therefore, the instrument as the test was reliable. The researcher uses test-retest to gain reliable.

According to Brown (2004:22), the validity of the text refers to the extent to which inferences made from assessment result are appropriate, meaningful and useful in term of the purpose of the assessment. It means that validity is an important key to be good research. Validity in the research is showed that the research is successful. Have a good content validity, face validity, and construct validity is the part of the effective research.

Reliability tests consistent and dependable data (Brown, 2004:20). It meant that reliability is consistent from a series of measurement tools. According to Cohen et al (2000: 132) four main factors that might affect reliability: the range of the group that is being tested, the group's level of proficiently, the length of the measure (the longer the test the greater the chance of errors), and the way in which reliability is calculated.

To measure the reliability of the test, the researcheradministered tryout to see if the result of the test was reliable or not. The purpose of tryout is to make sure that the instrument was clear and the test was not either too easy or too difficult. It was done on Friday, 29th March 2019 in the X IIS class. In this research, the researcher used SPSS 16.0 to

know the reliability of test instrument. The researcher analyzed using
reliability testing based on Cronbach's Alpha. The criteria of reliability
instrument can be divided into 5 classes as follows:

a. If the Alpha Cronbach score 0.00-0.02: less reliable

b. If the Alpha Cronbach score 0.211-0.40: rather reliable

c. If the Alpha Cronbach score 0.41-0.60: enough reliable

d. If the Alpha Cronbach score 0.61-0.80: reliable

e. If the Alpha Cronbach score 0.81-1.00: very reliable

The tryout was done in order to make sure that the instrument was
clear and the test was not either too easy or too difficult and the
researcher used formula Pearson-Product Moment.

Table 3.3

Reliability Statistics

Cronbach's Alpha	N of Items
.701	21

The table 3.4 showed that the result 0.701. Based on the Cronbach
scale, the value score between 0.61-0.80 is reliable. So, it is concluded
that the instrument is reliable.

E.   Hypotheses Testing

The statistical test was intended for comparing two means, which is the means of before and after treatment. According to Braves and Caputi (2001: 40), the way to test whether the null hypothesis can be rejected is by comparing T-value of the obtained statistics is less than 0, 05. The hypothesis testing of this study is as follow:

1. If the significance level is less than 0,05 the alternative hypothesis is rejected and the null hypothesis is cannotbe rejected. It means that there is no different score on students' writing ability after and before being taught by using Stick Figure.

2. If the significant level more than 0,05 the alternative hypothesis is not rejected and the null hypothesis is rejected. It means that there is a significantly different score on students' writing ability after and before being taught by using Stick Figure.

F.   Data Analysis

After collecting the data of the students the researcher could review the data. The data of this research could analyze by using statistical computation. After the data of pre-tests and post-tests collected the score of the data could be analyzed by using the statistical instrument (SPSS) by comparing the students score of pre-test and post-test.

The pre-test data was the data of the students score before being thaught Stick Figure. The post-test data of writing was the data of students score after being thaught Stick Figure. To analyzed the data the researcher

comparing the data pre-test and post-test in order to measure the significant differences of the students' writing score before and after being thaught Stick Figure, the researcher used formula of paired sample T-test by using SPSS 16 to analyze the data.