

## **CHAPTER III**

### **RESEARCH METHODOLOGY**

This chapter discusses about research design, subject of the research and location of the research, the data collection technique and data analysis.

#### **3.1 Research Design**

Research design of this study is experimental design. Experimental research describe what will happen when certain variable are carefully controlled or manipulated. The researcher uses quantitative research in this study.

According to SAS (2005) states that an experiment is a process or study that results in the collection of data. The results of experiments are not known in advance. Usually, statistical experiments are conducted in situations in which researchers can manipulate the conditions of the experiment and can control the factors that are irrelevant to the research objectives. Experimental design is the process of planning a study to meet specified objectives. Planning an experiment properly is very important in order to ensure that the right type of data and a sufficient sample size and power are available to answer the research questions of interest as clearly and efficiently as possible.

The purpose of this research is to test audio books affect on teaching reading. To reach that purpose the researcher used experiment as research design. The researcher also used quasi experimental design because the subjects are choosen randomly. The design chart can be seen in figure below:

<b>Group</b>	<b>Pretest</b>	<b>Treatment</b>	<b>Post test</b>
Experiment	+	+	+
Control	+	-	+

**Table 1. Non Randomized Subject, Pre-test, Post test, Quasi-Experiment Design**

Where:

+ : with treatment

- : without treatment

The procedures of the research design are as follows:

1. giving pre-test to the respondents (subject) to measure Reading before the treatments,
2. giving treatment to the respondents that is teaching Reading by Audio Books Using Communicative Language Teaching (CLT) Method,
3. giving post-test to measure the students Reading achievement after being given the treatment,
4. finding the mean different between the results of the pre-test and post-test,
5. analyzing the data using t-test formula to prove the hypothesis,
6. Ho is received if  $t \text{ statistic} > t \text{ table}$ .
7. Ho is failed if  $t \text{ statistic} < t \text{ table}$ .

Based on Explanation above, the reseacher decided class in two groups are V A as experimental group and V B as control group. In this case, the researcher used the same classroom for both groups. So, by using the same level, they got the same condition. Hopefully, it made this research more reliable. The researcher decided to choose class V A as the experimental class and class V B as the control group. Pre-tests are administered before

the application of the experimental and control treatments and post-tests at the end of the treatment period. Pre-test is given to both the control and experimental group to measure the condition before treatment.

### **3.2 Population and Sample**

A research population is generally a large collection of individuals or objects that is the main focus on a scientific query. It is for the benefit of the population that researches are done. However, due to the large sizes of populations, researcher often cannot test every individual in the population because it is too expensive and time-consuming.

Population as quoted by Arikunto (2002:108) from *Encyclopedia of Educational Evaluation* states that a set (or collection) of all elements possessing one or more attributes of interest. The objects in a population are investigated, analyzed, concluded and then the conclusion is valid to whole population. The Subjects of the study are 30 Students at Fifth grade of SDN Lasem Sidayu Gresik, that consist of a round 14 Students From V A class and 16 Students from V B class. The researcher choose these classes because they have low vocabulary especially in reading.

### **3.3 Data Collection techniques**

There were four steps procedure of data collection in this research: first, validity and reliability test. A good test has some important characteristic, and the two most important ones are validity and reliability. It is stated by Ary in Elistiowaty (2011) that Validity refers to the extent to which an instrument measures what it is intended to measure. Reliability, on the other hand, is the extent to which a measuring device is consistent in measuring whatever it measuring in terms of content validity, and instrument must measure fairly the extent to

which attested has learnt what the curriculum is intended to teach them by Ary in Elistiowaty (2011).

### 3.3.1 The Validity of test

Before conducting posttest and pretest as instrument of the research, the test should be tried out in terms of its validity and reliability in order to check the validity of the test the researcher did it into two steps. Those were checking content validity and construct validity. To determine the content validity, the researcher asked the English teacher is help to check the instrument validity and also based on scores criteria. The score of multiple choices, there are 20 items and every correct answer could 1 point, totally 20 point. For essay text if students correct answer got 2 point, totally 20 point. Then, short essay if students correct answer got 5 point, totally 50 point. These criteria given to the students depend on teachers policies. To define the construct validity, the researcher used SPSS version 16.0 to computed descriptive statistics the instrument validity examined to analyzing item was good or not. The researcher used in testing the validity in:

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

Where:

$r_{xy}$  : the coefficient of correlation X and Y variable or validity of each item.

N : the number of students/subject participating in the test

X : the sum of X scores

Y : the sum of X scores

$\sum Y$  : the sum of total score for each student.

$\sum X$  : the sum of total score in each item.

$\sum XY$  : the sum of multiple score from each student with the total score in each item

$\sum X^2$  : the sum of the square score in each item and,

$\sum Y$  : the sum of the total score from each student.

Each item square is determined by using these following categorizations:

<0,3	is difficult	0,7-1	is easy
03-07	is medium		

Actually the test are 20 items in both test, pre-test or post-test but the researcher divided into two parts first part consider as multiple choice and part two essay test that categorized as subjective test not objective test.

Based on the result of validity (see appendix 7 & 8) of instrument, the researcher determined the validity of item into two steps as follow. First, the researcher saw *correlation item-total correlation* column. The item which had the value under 0,3 consider as bad item, it meant that it had to be rejected. Second, the researcher conducted in *cronbach's alpha* value, the item had to be rejected.

Based on those consideration and interpretation of in pretest item try out, the researcher found that 21 items were valid whereas 4 item were invalid. It meant that 21 items could be used as a research instrument whereas 4 items had to be rejected as research instrument for pre-test (see appendix 7). In the same case in post-test a researcher found that 13 items were valid and 7 items were invalid in (see appendix 8).

Actually the test are 20 items in both test, pre-test or post-test but the researcher divided into two parts first part consider as multiple choice and part two is essay test that categorized as subjective test not objective test because the researcher cannot predict the respondent's answer.

### 3.3.2 The Reliability of test

The basic concept of reliability of a test is consistency of the test score. Reliability measurement supplied an instrument of how much a variance might expect under different condition. To see the consistency of the test score, the researcher tried the instrument out twice. The reliability of the test is characteristically presented by means of reliability coefficient or the standard error of measurement. To define the reliability of the test in order to find out the stability of the test, the researcher used SPSS 16.0 with formula

$$r_{kk} = \frac{K.Sx^2 - \tilde{x}(k - \tilde{x})}{Sx^2(k - 1)}$$

$$\text{Where: } S = \frac{\sqrt{\sum F_x}}{n - 1}$$

$$\chi = X - \tilde{x}$$

K: total item that accepted

n: total students followed the test

$\chi$ : total of correct answer a student

F : total of student who got the particular score in x

Criterion;

$0.0 \leq r_{kk} < 0.20$  is the lowest reliability

$0.20 \leq r_{kk} < 0.40$  is the low reliability

$0.40 \leq r_{kk} < 0.60$  is the quite reliability

$0.60 \leq r_{kk} < 0.80$  is the high reliability

$0.80 \leq r_{kk} < 1.00$  is the highest reliability

Based on the reliability analysis for the items, this research or items belongs to high reliability although this items can be accepted.

### **3.4 Instrument**

The researcher has the key instrument. It means that she has an important role in doing the research. In other words, the success of the research greatly depends on her role. The researcher used tests in order to enable her to observed and got any information what was going on in the class when the “Audio Books using Communicative Language Teaching” taught to the students. The instrument is Reading test with Themes “ My Pets and Public Places” in order to measured the students ability in reading and however it is very important to measured the validity and reliability of the test to make sure that the test is valid.

#### **3.4.1 Test**

Test applied to obtain the primary data about the students achievement of reading after they got the materials given during the experimental treatment. Test is a set of questions or device used to measure the skill, intelligence, ability and talent of an individual or a group. The type of test used here is achievement test. Achievement tests attempt to measure what individual has learned – his or her present level of performance (Best, 1981:193). Arikunto (2010:96) explains that test is a set of question, exercises or other means which are used to measure skill, knowledge, intelligence, ability, or talent of individuals or groups.

The researcher divided test into seven categories. Based on the objective that evaluated, test divided into personality test, aptitude test, intelligence test, attitude test, projective test, interest test and achievement test. Test applied in this research is a teacher made test given in the form of objective type. Objective test can be defined as a kind of test in which the test.

Taken answer the questions based on the choice provide. The objectives test in this research was in the form of multiple choice and completion. It was chosen because it is used to measure the students reading comprehension with consideration that it can be score easily and quickly.

#### **3.4.1.1 Pre test**

Pre test is carried out to find out the initial different between experimental and control groups as they have similar level in teaching reading with Audio Books using communicative language teaching (CLT) method. Before gave the treatment, the reseacher gave a pre test, the test consist of 20 multiple choices. Then their worked is measured by the teacher based on the criteria given.

In this research, pre-test as an instrument to get the primary data administered on July 14<sup>th</sup>, 2014 before the researcher gave treatments to the respondents. The reseacher also given Try – out data admistered on June 16<sup>th</sup> , 2014.

#### **3.4.1.2 Post test**

Post test distributed to both groups to find out whether or not the students made progress in their reading with Audio Books using communicative language teaching (CLT) method. In this research, post-test as an instrument to get the primary data administered on July 19<sup>th</sup>, 2014 after gave treatment conducted several times on July 15<sup>th</sup>, 16<sup>th</sup>, 17<sup>th</sup>, 18<sup>th</sup> 2014. In this study, the criteria of test scoring system used to measured the result of students score. The post test has the same procedure with the pre test.

### **3.5 Data Analysis**

Data analysis method is very important in a research. In conducting a research, it is a requirement to analyze the data in order to interpret the data obtained from the ground. The



data analysis is carrying out in order to answer the research problems with the data obtained through pre-test dan post-test. The researcher analyzed the data used independent sample t-test. Since the samples are small and the groups are independent, the t-test for independent samples are carried out to determine whether there is any differences between experiment group and control group. The reseacher used SPSS version 16 to compute describe statistic, descriptive statistic conducted in order to found out the effect of the treatement whether there is significant or not.

The data analysis method used in this research is t-test. T-test used to analyze the data and to compared the means difference of the pre-test and post-test and this research want to knew the influence of audio books using communicative language teaching method to teach reading for the fifth grade at SDN Lasem Sidayu Gresik 2013-2014.