**CHAPTER III**

**RESEARCH METHODOLOGY**

This chapter presents the description of the research method used in this study. It discusses the research design, population and sample, variable data source, research instruments, data collecting method, data analysis and hypothesis of the research.

1. **Research Desaign**

The present study conducted an experimental reseacrh. In this study, there were two variables. Firstly, the teaching technique as the independent variable (X), secondly students’ comprehension as the dependent variable (Y). The aim of the study was to evaluate the effect of the independent variable (X) on the dependent variable (Y). Moreover, it was conducted in order to investigate the effectiveness of scanning technique in teaching reading. The researcher use quasi pre- experimental design. It is because the researcher use randomize to determine the sampling.

The procedures of the experimental design were as follow:

1. Choosing two groups from A and B class student in SMPN 3 Kedungwaru Tulungagung
2. Classifying experimental class and controlled class
3. Giving the same pre- test to both classes
4. Maintaining the same condition for both two groups. Expert one thing for experimental class is given the treatment that is teaching reading using scanning technique.
5. Giving the same post- test to both classes

During the study, both of two groups in this study were given a different treatment. The experimental group taught using scanning technique and the control group taught without using scanning technique. The research design which is really applicable for the present study is as follow:

|  |  |  |  |
| --- | --- | --- | --- |
| Group | Pre-test  | Treatment  | Post-test |
| Control group  | X1 | - | X2 |
| Experimental group (R) | Y1 | T | Y2 |

Note:

X1 : students’ reading comprehension of control group in pre-test

X2 : students’ reading comprehension of control group in post-test

T : treatment of experimental group by using scanning technique

- : treatment of control group without using scanning technique

Y1 : students’ reading comprehension of experimental group in pre-test

Y2 : students’ reading comprehension of experimental group in post-test

In the experiment, pre- test (Y1) was used to observe the students’ comprehension in reading before the treatment was being given. (T) was the treatment where the teacher using scanning technique to teach reading. Post-test (Y2) was used to observe and measure any changes of the students’ comprehension in reading after being taught using scanning technique. It also used to observe and measure the students’ reading comprehension of control group who learned reading without any treatment given. Then, at the end of the experiment, the study will conclude the effectiveness of using Scanning technique in teaching reading to the students of SMPN 3 Kedungwaru Tulungagung by comparing it with the result of post- test

1. **Population and Sample**

Population this study were all of the students of eighth grade of SMPN 3 Kedungwaru Tulungagung. There were 174 students (see table 3.1 for the detail population).

**Table 3.1 population of SMPN 3 Kedungwaru Tulungagung for 8th Grade**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Class** | **L** | **P** | **Σ** |
|  | VIII A | 16 | 13 | 29 |
|  | VIII B | 15 | 14 | 29 |
|  | VIII C | 15 | 14 | 29 |
|  | VIII D | 16 | 13 | 29 |
|  | VIII E | 17 | 12 | 29 |
|  | VIII F | 16 | 13 | 29 |
| **Total** |  | **95** | **79** | **174** |

In this study, the amount of the sample was determined by the number of population in the SMPN 3 Kedungwaru Tulungagung. Because of time constraints, researchers did not examine all of the population but only examined a few of them by using random sampling technique as was said by Sugiyono (2007: 120). The stratified here mean that the researchers only took some students from the eighth grade randomly to be the representatives of all of the eight grade students.

According to Arikunto (2002: 112), when the subject is less than 100, it is better to take the entire subject. However, if the number of the subject is more than 100, it can be taken for about 10-15% or 20-25% for being used a sample. Then, in this study the researchers took samples 25% from the total of the population, which are 44 students. The researcher divided it into two groups based on research design which used the pre- test and post test control group design. Control group (B class) consisted of 22 students and experimental group (A class) also 22 students.

1. **Variable, Data and Data Source**
2. Variable

There were two variables in this research, namely independent variable and independent variable.

1. Independent variable

Sukardi (2003: 179) stated that the independent variable is usually the variable that is manipulated systematically. In this research, the independent variable was the use of scanning technique. It is symbolically by (X).

1. Dependent variable

“Dependent variable or sometimes-called criterion variable is variable which is measured as the effect of the manipulation or treatment of the independent variable” (Sukardi, 2003:179). It means that the dependent variable is the result or the effect of treatment, which conducted in the experimental group. While in this study, the students’ achievement of reading comprehension became the dependent variable. It is symbolically by (Y)

1. Data and Data Source

Data were the result of the records and they may be facts or numbers. The data were taken from the primary data sources that are original document taken from the students’ score in the reading comprehension test when they were taught using scanning technique and without using scanning technique. The data were taken directly from the eighth grade students of SMPN 3 Kedungwaru Tulungagung.

1. **Research Instruments**

As previously stated, the study is intended to examine the effectiveness of scanning technique. In order to gain the data of the students’ comprehension, the instruments used test. The following are the development of the test.

There are some instruments used in this research, they are as follow:

1. Pre-test. This reading test comprises 15 multiple choices, 10 to essay which were tested to the experimental and control group. This is given to both groups before treatment of scanning technique is given. It is to find out the initial information of two groups.
2. Post-test. This reading test comprises 15 multiple choices, 10 to essay which were tested to the experimental and control group. This is given to both groups to find out the students reading for locating information achievement after the treatment was given

Before applying the instrument to the experimental and control group, the value of validity and reliability was sought. So that 15 items of multiple choices were tested to another class in order to gain 10 essay items which are valid and reliable.

1. **Validity**

Heaton (1975: 159) defines the validity of a test as the extent to whis it measures what it is supposed to measure and nothing else. To measure wether the test has a good validity, the researcher analyzed the test from content validity, construct validity and face validity.

1. Contstruct validity

Construct validity is capable of measuring certain specific characteristics in accordance with a theory of language behavior and learning, Heaton (1975: 161). It is the process of determaining to which test performance can be interpreted in terms of one or more constructs. In this study, the researcher administered a reading test and the technique scoring the students’ reading for locating information.

1. Content validity

This kind of validity depends on a careful analysis of the language being tested and of the particular objective. The test should be so constructed as to contain a representative sample of the course, the relationship between the test items and the course objectives always being apparent. There is a strong tendency, especially in multiple- choice testing, to test only those areas of the language which lend themselves readily to testing. If the test or sub- tests concern reading, then each of the reading sub- skills should be given a weighting in a similar way. The important point is that the test writer has attempted to quantify and balance the test component, assigning a certain value to indicate the importance of each component in relation to the other component in the test. In this way, the test should achieve content validity and reflect the component skills and areas which the test writer wishes to include in the assessment.

1. **Research Procedure**
2. Organizing teaching procedure

In conducting the research, the researcher acted as a teacher and facilitated the students in the classroom reading process in the experimental and control group. There were two steps taken in preparing the teaching process. Firstly, preparing appropriate materials for teaching and learning processes during the treatment. It consisted of analyzing the textbooks. The books namely “Extensive Reading, Top-Down Reading (Otong, 2008 : 225). Secondly, was organizing teaching procedures in the control and experimental group.

The scoring of the test was carried out objectively by adding up the number of the right answers. Then, the correct answer was divided by the total items, and last multiplied the result by 100. The following is the figure of the formula.

The scoring formula is:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Σ | Correct answer |  |
| Score = |  |  | X 100 |
|  | Σ | Correct test item |  |

To find out whether there is significant difference of student’s reading achievements, the writer used percentage and divided the test result into three criteria, those are good, fair, bad. It means the students can be more answering questions so they get good score, when the students can answer some questions, they get fair score. Bad score is got by the students when they only can answer a little of the questions. This criterion is got for the reading test.

**Table 3.2 Criteria of the Student’s Score**

|  |  |  |
| --- | --- | --- |
| **No** | **Interval Class** | **Criteria** |
| 1 | 81 - 100 | Good |
| 2 | 61 - 80 | Enough / Fair |
| 3 | 40 - 60 | Bad / Low |

1. **Data Collecting Method**

Data collecting method is the method to obtain the data. The data collecting method that was used in this research was administering test.

In collecting data for this study, the researcher did several steps, as follow:

First, the researcher made the test items for the pre-test and the post test. The test items consisted of 25 numbers. It was adapting from some resources book such as “Genre” written by Otong Setiawan Djuhari published by Yrama Widya 2008.

The next, researher administered both per-test and post-test based on the planning.

1. Pre-test

At the first meeting, the researcher gave pre-test for both control and experimental group. It was conducted to know the students’ score in reading comprehension. The test consisted of 25 test items in type of multiple choice and essay. The time provided was 45 minutes for each group.

1. Treatment

After conducting the pre-test, the researcher only gave treatment to the experimental group, in this case the eight grade studets in A class. Otherwise, the students of B class who were in control group did not get treatment but they were taught as usual by their teacher using textbook or students’ workbooks. The treatment was teaching reading comprehension using the scanning technique. The materials used were an advertirsement from article, an application letter, magazine, a procedure text to make some food, and a folktale story.

The process of teaching and learning was, first, the teacher divided the class into several groups. Each got different kind of text to discuss. The first group got advertisement, the second group got procedure of making some food, the next group got news article from Jakarta post, and other group got letter and the other got folktale story to discuss. Each reading text had several question to help them comprehending the content of the text. The next, the students were asked to discuss the texts they had gotten with their friends. After they found all of the answer the question, they did a presentation. One or more of the representative of a group explained the content of the text to the other groups. While the other student were allowed to ask some question related to the text explained by the group. Then, all of the groups did the same activity. Because the time was limited, the activity for the first day treatment was not finished yet. Therefore, it was continued to the following day. However, the activity was the same.

1. Post-test

The researcher conducted the post-test to know whether or not the treatment given to the experimental group resulted significant effect and the achievement of students’ in control group which got treatment was significantly different. The post-test item number and type were the same with the pre-test number; it consisted of 15 multiple choice and 10 items in form of essay. The time spent was 45 minutes.

**Table 3.3 The Schedule of the Tests and Treatment**

|  |  |  |
| --- | --- | --- |
| **Treatment and test** | **Control group** | **Experimental group** |
| Pre-test | April, 10th 2012 | April, 10th 2012 |
| Treatment | April, 11st 2012April, 13th 2012April, 14th 2012 | April, 11st 2012April, 13th 2012April, 14th 2012 |
| Post-test | April, 17th 2012 | April, 17th 2012 |

1. **The stage of conducting research method**

There were some steps taken to run the research is briefly described in the following seasons:

1. **Pre experimental stage**

Before being given a treatment, the researcher conducted a pre- test to know how quality of the subjects of research. The results mean score of two groups for taking.

The pre- test comprised 25 items in the form of reading multiple-choice test items and in the form of essay.

1. **Experimental stage**

In the experimental stage, the researcher gave a treatment towards the subject using scanning technique. As it has been said previously, there were two groups used in this study, after going through stages of sampling. Group A is that in the experimental group by using scanning technique, while group B were as control group without using scanning technique.

1. **Post experimental stage**

After the experimentation was complete, the researcher then recorded the achievement scores obtained from the post-test. The researcher used some statistical calculation to analyze the data. The aim of the calculations was to be able to see any significant differences after the treatment given, so that the conclusion could be drawn.

The post-test comprised 25 items in the form of multiple choice tests items and in the form of essay questions.

The next section presented the teaching procedure of teaching reading using scanning and without using scanning technique.

1. **Data Analysis**

To test difference, the researcher used t-test for the data analysis in pre-test post-test control design (Arikunto, 2006: 306). After the experiment is completed, the results of both groups are processed by comparing the mean. To free random sample, testing the mean difference was calculated using formula t-test.

The formula that was used as taken from Arikunto (2006:306) is as follow:

Note:

M : The average value per group result

N : Number of subject

X : The deviation of each value of X2 and X1

Y : The deviation of each value of Y2 and Y1

1. **Hypothesis Testing**

There are two hypotheses which can be formulated:

1. The alternative hypothesis (Ha) states that accepted. If T-test score is bigger than T-table. It means that is different score when using scanning technique and without using scanning technique in teaching reading. The difference is significant.
2. The null hypothesis (H0) is not accepted. If T- table is smaller than T- test. It means that there is no different score when using scanning technique and without scanning technique. The different is not significant.

The criteria for accepting or rejecting the null hypothesis is as follow: Ho is rejected if t- test is greater that the value of in the critical table and Ha is accepted if t-test is smaller than the value of t in critical table (Ary, et al 1985: 85).

Table formula that is used is:

Ho : µα = µβ

Ha : µα > µβ

Where:

Ho : the null hypothesis

Ha : the alternative hypothesis

µα : the mean of the post-test in experimental group

µβ : the mean of the post-test in control group