**CHAPTER III**

**RESEARCH METHOD**

In this chapter the writer describes the research method, which consists of research design, place of the research, the population and sample, variable, data, data source, method of collecting data and instrument, technique data analysis, hypothesis testing.

1. **Research Design**

Research is a way of observation or inquiry and has the objective to find answers to problems or the discovery process, (Sukardi, 2010:3). In this study the writer use experimental. Experimental research is scientific investigation in which an investigator manipulates and controls one or more independent variables and observes the dependent variable or variables for variation concomitant to the manipulation of the independent variables (Ary, 1985:20). Experimental research can be done in the laboratory, in the class with talking students as population.

Experimental research is unique in two very important respect : it is the only type of research that directly attempts to influence a particular variable, and when properly applied, it one or more dependent variable. An experimental usually involves two group or subjects, an experimental group and a control group, although it is possible to conduct an experiment with one group by providing all treatments to the same groups, (Ary,1985).

This study uses pre-experimental with one-group pretest-posttest design. According to Arikunto (2006:85) there are kind of pre-experimental design, those are: one shot case study, pre-test and pos-test group. In pre-test and post-test group observation do two times, those are: before experimental call pre-test and after experimental call post-test.

This study is classified as pre-experimental design because it is little or no control of extraneous variables. In the one-group pre-test and post-test design, a single group is measured or observed not only after being exposed to a treatment of same sort, but also before, (Arikunto, 2006)

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The test illustration or one group pre-test and post-test design. (sukardi,2007:184)

|  |  |  |
| --- | --- | --- |
| Pre-test | Independent variable | Post-test |
| YI | X | Y2 |

 Different distributed to application of the experimental treatment are determined by comparing the pre-test and post-test score.

The procedures of experimental research that use one group pretest - posttest design:

1. Administering a pretest with a purpose of measuring the vocabulary achievement in the fifth grade students at SDN II Plosokandang, Tulungagung.
2. Applying the experimental treatment teaching vocabulary by using make a match method to the subjects in fifth grade students at SDN II Plosokandang, Tulungagung.
3. Administering a post test with a purpose of measuring the dependent variable (vocabulary achievement) in the fifth grade students at SDN II Plosokandang, Tulungagung.

So, in this study the writer use pre-experimental research with quantitative approach. In line with the objective of experimental research, this study will provide the effectiveness of using Make a Match method in teaching vocabulary to the students' achievement. The effectiveness will be known after knowing the significant differences between the students who are before taught using Make a Match method and students who are taught after using Make a Match method.

1. **Place and Time of the Research**

Place of the research is a place of the study process which is used to get the problem solving of the research is happened (sukardi, 2003:53). In this research, the researcher chooses SDN II Plosokandang, Tulungagung because on the researcher’s opinion, the students of SDN II Plosokandang have enthusiasm in English but sometimes they have difficulties to improve their vocabulary and difficult to understand the meaning of the words. The research was done in 4April – 19 may 2012.

1. **Population and Sample**
2. Population

Population is the object or subject that has some qualities and characteristic that are chosen to be learn and to be studied by the researcher (Sugiyono,2010:117). Population is all member of well defined class of people, events, or objects (Ary,1985:183). The population of this study was fifth grade of Elementary school of SDN II Plosokandang Tulungagung in the academic year or 2011/2012. There were 25 students.

1. Sample

Sample is part or representative or population that is observer (Arikunto,2006:130). It means that sample is part of object research which is observed.

Based on statement, the researcher did not use sample anymore, because the population is not too large, so the research just conduct in on class that is fifth graders of elementary of SDN II Plosokandang, Tulungagung, in class there are 25 students consist of 12 boys and 13 girl.

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

Variables is any measured characteristic on attribute that differs for different subject. There are two variables on this research, there are:

* 1. Independent variables (x)

Independent variable which is manipulated systematically. This means that the researcher doesn’t give special treatment for this group. In this study the independent variable is the teaching vocabulary by using make a match method.

* 1. Dependent variable (y)

Dependent variable is variable measured as an effect of manipulation to the independent variable. This means that the researcher gives special treatment for this group that is make a match method. In this study the dependent variable is the students’ achievement on the vocabulary test.

1. Data

Data is result of investigation, data is all of fact and number as material for constructing information (arikunto, 2007:96). The research will not to get information without the data. In this study the researcher used quantitative data. This data was to know the students’ vocabulary achievement taught before and after by using make a match method. The data of this study is the student’s score obtained from the test.

1. Data Source

The data resources are very significant in the research, the research will not able to get information without sources of data. According to Arikunto 2006:129, there are three sources of data, namely person, place and paper.

1. Person

Person is a man who gives data or information orally. It can be done by giving questions for the subject. The resources of data (person) in this research are, the students, and the teacher.

1. Place

Place is resources of data that deals with place or moving something. Place can be a room. The location of research or the material, moving something can be a teaching learning process, activity of person and soon. The writer observes this place in collecting the data about geographical location of research (SDN II Plosokandang, Tulungagung), the conditions of the school.

1. Paper

Paper is resources of data that deals with the symbol, book, or number. The paper of the research is history book of SDN II Plosokandang, Tulungagung. The document about structure and infrastructure the map of SDN II Plosokandang, Tulungagung. The total number of students and teachers year 2011/2012.

The data source is classified into two kinds, there are: primary data and secondary data.

* 1. Primary data

Primary data is information collected by the researcher of person himself. In this study the primary data source was from the result of the test in the from of the students’ scores that were gotten from the fifth grade the students of SDN II Plosokandang, Tulungagung.

* 1. Secondary data

Secondary data is collected by others but utilized or used by the research. The secondary data source was from observation of teaching English fifth grade the students of SDN II Plosokandang, Tulungagung.

1. Procedure of Collecting Data

After the researcher had god permission from headmaster, the researcher was conducted on 4 April up 19 may at SDN II Plosokandang, Tulungagung.

The procedure were:

Firstly, the researcher came to the classroom to observe the teacher and the students activity in teaching vocabulary.

 Secondly, the researcher asked time to teach both of them. Then, the researcher observed the condition of the students, vocabulary achievement by using pre-test, the researcher conducted some of treatment. This treatment the researcher taught by using make a match method. After conducting the treatment, the researcher give the students post-test. The researcher wanted to know how far the students understand and remember about some words that given when treatment process is done.

Thirdly, that at the last after the sample group have been exposed to the same of treatment for same period of time, the test were administered selection, classification and analysis were made to determine whether are any difference between the students achievement on vocabulary before using make a match method and after using make a match method.

1. **Method of Collecting Data and Instrument**

Data collecting method is the method that is used by the researcher to collect data, (Arikunto,2006:160). To collect the data, the researcher used instrument. Instruments is the tool that used to get the data, (Arikunto,2006:160). The use of valid instrument is very essential to determine the validity of data. In this study, the methods that use is test.

According to Ary and friends as quoted in Sukardi, a test is a set of stimuli presented to individual in order to elicit response on the basis of which a numerical score can be assigned, (Sukardi, 2008:139). In this research, test is used as a main method. The test was given to all fifth graders at SDN II Plosokandang, Tulungagung. In this research the researcher uses pre-experimental research with one-group pretest-posttest design.

The questions of the test are 20 items. The test items of pretest are different with the posttest, but similar in their level. The forms of the test are made in the following form:

1. Multiple choice tests that consist of 10 items. The students must choose the correct answer. The score for each item is 1, so all scores are 10.
2. Mentioning that consist of 10 items. The students must mention kinds of profession. The score for each item are 2 , so all scores are 20.

So all score of the tests are 30. The test will be done twice, pretest and posttest.

1. Pretest

Pretest is a test that given to all fifth year students at SDN II Plosokandang, Tulungagung to measure their achievement before treatment process ( teaching by using make a match method).

This test is given to know the basic competence for all students and to know their earlier knowledge before they get treatment.

1. Posttest

Posttest is a test that is given to all fifth year students at SDN II Plosokandang, Tulungagung after they get treatment (teaching by using make a match method). It is done to know the final score and to know the students difference before and after they get treatment.

There are two important characteristics every measuring instrument should process validity and reliability. Validity is concerned with what a test measures and for whom it is appropriate. The validity of the test extent to which it measures what it is to measure and nothing else (Heaton, 1975:159). While reliability reserve too consistently with which a test measure whatever it measures. Validity is very important because one of main characteristic of test, without has this characteristic a test there is not important.

1. Validity

In this test, the validity of the test was ensured in term of construct validity and content validity.

1. Construct validity

Construct validity is concept or theory which basis of use a skills of language. Brown mentioned (in Isnawati, 2011: 29) that a construct is any theory, hypothesis or model that attempts to explain observed phenomena in our universe or perception.

According to Isnawati (2011:50), there are techniques that are suggested only for possible use in achievements test:

1. Definition

The teacher give definition about vocabulary and the students guess it. Not all items can be identified using a definition. Nor can all words be defined entirely in words more common or simple than themselves.

1. Gap Filling

This technique can take the form of one or more sentence with a single word missing.

Based on the explanation above, in the test the researcher asked the students to answer the question in the form of multiple choice and mentioning to measure the students’ vocabulary achievements and this fulfill the construct of vocabulary test and therefore valid in term of construct validity.

The construct validity of test is test which is capable of measuring certain specific characteristics in accordance with a theory of language behavior and learning (Heaton, 1975: 159).

1. Content validity

The content validity is a kind of validity which depends on a careful analysis of the language being tested and of the particular course objectives (Heaton, 1975:159). A test is said to have content validity if its content constitutes a representative sample of the language skills and structure, being tested (Isnawati, 2011:27). The try out test of this study had content validity because the items were taken from sources for the fifth grade students SDN II Plosokandang, Tulungagung. The contents validity in this research can be showed as below:

**Table 3.1. Content Validity**

|  |  |  |  |
| --- | --- | --- | --- |
| No  | Competence Indicators | Test Item | Percentages |
| 1 | Students are able to know kinds of profession | 167 | 5%5%5% |
| 2 | Students are able to know jobs of profession | 5 | 5% |
| 3 | Students are able to know place jobs of profession | 234910 | 5%5%5%5%5% |
| 4 | Students are able mention kinds of profession | 11121314151617181920 | 5%5%5%5%5%5%5%5%5%5% |
|  | Total | 20 | 100% |

1. Reliability

 Reliability is a necessary characteristic of any good test for it to be valid at all and a test must be reliable as measuring instruments. A reliable test is consistent and dependable. (Isnawati,2011:18). The researcher give test for 25 students to know the reliability of test.

In this research the researcher uses Kuder-Richardson formula 20 to test validity of the question. To get Kuder-Richardson reliability, it requires test administration only once. One correct answer is given point 1, while incorrect answer is given 0.

KR-20

r11= $\frac{k}{k-1}$ ($ \frac{s^{2}-∑pq}{s^{2}} $)

note :

r11 = Reliability using equality KR-20

P = Proportion of correct answer for an item

q = Proportion of in correct answer for an item (p=1 –p)

∑pq = Total multiplication between p and q

K = Total of question

1. Step 1

*P* = $\frac{∑xi}{N}$

*P1 =*$ \frac{ 19}{25}$*=*0,76*, P2 =*$ \frac{ 15}{25}$ *=*0,6

1. Step II

q =1-p

q1 = 1-0,76= 0,24, q2 = 1-0,6= 0,4

1. Step III

∑pq = 4,472

1. Step IV

 $s^{2}$ = $\frac{∑X- \frac{(∑x)^{2}}{N}}{N}$

= $\frac{3342-\frac{285^{2}}{20}}{20}$

= $\frac{3342-4061,25}{20}$

=$\frac{-719.25}{20}$

= -35,97

s2 = 35,97

1. Step V

r11= $\frac{k}{k-1}$ ($ \frac{s^{2}-∑pq}{s^{2}} $)

= $\frac{20}{20-1}$ ($\frac{35,97-4,742}{35.97}$)

= $\frac{20}{19}$ ($\frac{31,228}{35,97}$)

= 1,053 x 0,869

r11 = 0,92

 Based on the analysis above, score of students test is reliable, because the result of r11 is 0,92.

1. **Data Analysis**

In this research, the researcher used the quantitative data analysis technique. The quantitative data analysis technique. The quantitative data of this research is analyzed by using statistical method that was T-test. This technique is used to find the significant difference on the students’ achievements after taught by using make a match method to vocabulary achievement. It means that the test was to find whether these was any significant derivation between pre-test or post-test.

 The researcher in this study used T-test with the formula, as taken from Zen Airudin, (2002) page 24.

t=$ \frac{D}{S X D}$

 note

 D = means of differential pre-test and post-test

 SD = standard deviation

 S X D = standard error of the mean for the differences to find out the

 Percentage of data, the researcher uses percentage formula as follow:

 P = $\frac{f}{n}$ x 100%

 Notes

 P = percentage

 F = frequency of the counted value

 n = number of class

**G. Hypothesis**

The hypothesis of this study was as follow:

1. If T-test score is bigger than T-table, the alternative hypothesis (Ha) is accepted. It means that there is different score to the fifth grade before using make a match method and after using make a match method. The difference is significant.
2. If T-test smaller than T-table, the Null Hypothesis (Ho) is rejected. It means that there is no difference score to the fifth grade before using make a match method and after using make a match method. The difference not significance.