**CHAPTER III**

**RESEARCH METHOD**

This chapter presents the research method. It focusees the method used in conducting this study. The decision covers research design, population, sampling and sample, variable data, data source, data collecting method and istruments and technique of data analysis.

1. **Research Design**

Research is careful study on investigation, especially in order to discover new facts or information, such as scientific, historical research (Hornby, 1995:996). It means that a study is done carefully and accurately on investigation of an event, problem or phenomenon about scientific to find out a new information.

On the other hand Gay (1992:2) says that “Research is the formal systematic application of the 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 analysis the data necessary for answering the question at hand. In this study the research design used was pre experimental with quantitative approach. This research was intended to investigate the effectiveness of using snakes and ladder game on students’ grammar achievement of the second grade at MTs AL-Huda Bandung.

Experimental reserch is a scientific investigation in which an investigator manipulates and controls one or more independent variables and observes the dependent variable or variables for variation concomant to the manipulation of the independent variables (Ary, 2006:284). Experimental research can be done in the laboratory, in the class and in the field. In this study the experimental research will be done in the class with taking students as population.

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

According to the explanation above, experimental design refers to the
conceptual framework within which the experiment is conducted. An experiment design serves two functions:

1. It establishes the condition for the comparisons required by the
hypotheses of the experiment.
2. It enables the experimenter through statistical analysis of the data to
make a meaningful interpretation of the result of the study.

In this research the researcher used experimental design with a single subject. Single subject experiment design was the experimenter used the same subject as control group and experimental group by giving different treatment phases to the different time and the length of the experiment period can be extended unlit the behavior stability.

In the experimental process there are two typical groups. They are an experimental group and a control group (although sometimes there may be only one group or there may be three or more groups). The experimental group typically receives a treatment, a treatment under investigation, while the control group usually either receives a different treatment or is treated as usually

This study used experimental design by comparing between the experimental group (x) and the control group (y). The class before taught using snakes and ladders game was indicated as a control group. This group was not given a treatment by using a snakes and ladders game in teaching grammar process. The class after being taught using snakes and ladders game was indicated as an experimental group. This group was given a treatment by of using snakes and ladder game in teaching grammar process. Both an experimental group and a control group in this study were taken from the same students.

A diagram of One- Group Pretest-Posttest design:

|  |  |  |
| --- | --- | --- |
| Y1 | X | Y2 |
| Pretest | Treatment(independent Variable) | Posttest(Dependent Variable) |

The procedures of experimental in this study consisted of pre-test, treatment, and post-test. The pre-test and the post-test are given to take the score of the students achievement before and after being taught by using snakes and ladders game. Then both scores were computed by using T-test to find out if there is significant influence of teaching grammar by using snakes and ladders game.

In this study an experimental study design used to know whether there is significance different of scores between using a snakes and ladders game and without using snakes and ladders game in teaching of grammar on the students’ grammar ability of second grade students, of A class at MTs AL-Huda Bandung.

**B. Setting and Subjects of the study**

To make the research easier, it is important for the researcher to know the research area where the research was conducted

The research was conducted at MTs AL-Huda Bandung. This school is located in Suruhan Kidul village, Bandung sub district, and Tulungagung regency. This research was intended for the second grade students of MTs AL-Huda Bandung in the academic year 2011/2012 the subjects of the study were the second great students in A class. The writer has a reason in chosing the second grade students of A class to be the subject of study. The writer saw that in the A class their students have low spirit or motivation, so this condition is easier to conduct an experimental study. The research was conducted from 8th April – 8th Mei

**C. Population, Sampling and Sample**

There are some explanations about the meaning of population. According to Gay (1992:124) 'The population is the group of interest to the researcher, the group to which she or he would like the result of the study to be generalizable”

On the other hand Arikunto says that "Population is all of the research subject". The populations of this research were the second grade students of MTs AL-Huda Bandung academic year of 2011/2012. It consisted of 250 students and divided into six classes, from A class until F class.

"Sampling is the process of selecting a number of individuals for a study in such a way that the individuals represent the large group from which they were selected (Gay,1992:123)”. The purpose of the sampling is to get information about a population. The sampling is a technique to take a sample. In this study purposive sampling was chosen as a technique of choosing sample.

Arikunto (2006:139) says that "Purposive sampling is the process of selecting sample by taking the subject that is not based on the level or area but it is taken based on the specific purpose". Purposive sampling basically involves selecting a sample which is believed to be representative given population in the other word the researcher uses expert judgment to select a representative sample

Selected of a sample is a very important step in conducting a research study. According to Gay (1992:126) "Sample is one that is representative of the population from which it was selected". It means that a good sample must be representative of entire as possible, so that the generalization of the sample as true as the population.

According to explanation above in this study the writer used the second grade students' at MTs AL-Huda Bandung as population and takes A class students who consisted of 15 students as the sample because from the students they have lack of motivation in learning grammar.

**D. Variable**

According to Ary (2006:39) "A variable is a construct or a characteristic that can take on different values or score. Moreover Arikunto (2006:96) says that "Variable means all which will be research object. It is often declared that research variable is factors which have rule in event or symptom will be researched"

In its simplest form, an experiment study has three characteristics

1. An independent variable is manipulated.
2. All other variables except the independent variable are held constant.
3. The effect of the manipulation of the independent variable on the dependent variable is observed.

Thus in an experiment the two variables of major interest are the independent variable and the dependent variable. The independent variable is manipulated or changed by the experimenter. The variable on which the effects of the changes are observed is called by the dependent variable, which is observed but not manipulated by the experimenter. The dependent variable is so named because its value is hypothesized to depend on, and vary with the value of the independent variable (Ary, 2010:266).

Based on the explanation above in this study a snakes and ladders game as media on the teaching grammar at the second grade students of MTs AL-Huda Bandung as independent variable. The dependent variable was the students' grammar ability at second grade students' of MTs AL-Huda Bandung. Thus, the present study was intended to find out the effectiveness of using a snakes and ladders game on the students' grammar ability through experimental study.

**E. Data and Data Source**

The data and data sources are very significant in the research. The research will not be able to get information without the data.

Arikunto (2006:118) mentions that "Data is the result of research record It may consist of fact or numbers" .It means that data is collected from research subject directly by using scaling tool or number and searched information or fact There are two kinds of data, those are qualitative and quantitative. In this study writer used both the two kinds of analysis were used. Quantitative data is data that are in numerical form (Ricard, 1999:302). It means that the quantitative data as technique to analysis and count the data the technique of process of data is shaped by number.

In this study the researcher used quantitative data as major data of research. This analysis was used to know the students achievement in grammar ability before and after being taught by using snakes and ladders game as media. The researcher conducted two tests to the students, they were pre-test and post-test. Pre-test was administered before the students being taught by using snakes and ladders game. Post-test was taken after they were taught by using snakes and ladders game as media in teaching learning grammar process at the second grade students of A class at MTs AL-Huda Bandung. Then test result of both scores were compared by using T-test to find out if there is significant of teaching grammar by using snakes and ladders game as a media.

Qualitative data is a data that is not numerical form, such as a written account of what happened during a lesson or an interview (Ricard, 1999:302). The writer used this qualitative data to support the needed data. It was taken from the method of teaching learning grammar process used by their teacher, and the teaching grammar by using snakes and ladders game of the second grade students of a class at MTs AL-Huda Bandung.

Data source is the subject where data was collected (Ricard, 1999:118). The data source is classified into two kinds, they are: Primary data and secondary data. Primary data is collected from the person who conducted of the study. In this study the primary data source was from the result of the test of the students. Score that were gotten from the second grade students of A class at MTs AL-Huda Bandung

This study consisted of two kinds of tests, they were pre-test, and post-test. The pre-test was a test that taken before the students being taught by using snakes and ladders game. The post-test was a test administered after the students being taught using snakes and ladders game. Both of the tests were given to take the scores of the students’ achievement before and after being taught by using snakes and ladders game.

The secondary data is data is directly collected from another person not collected from the original researcher. According to Sukardi (2007:205) says that "Secondary data is the data collected fro m another source as like literature book, article, historical book, etc". In this study the researcher got the secondary data source from the scores of students and data from teacher.

**F. Data Collecting Method and the Instruments**

The data collecting method and the instruments were needed to obtain the data in the research The aim of the data collecting in conducting a scientific research was to get the materials needed. The materials must relate to each other and to solve the problem. There were some method of data collections used in this study. They were administering test, doing observation, conducting interview, and documentation.

1. Administering Test

“Test is examination or trial of the qualities of a person or thing”. Tests were valuable measuring instrument for educational research. According to Donald Ary “A test is a set of stimuli presented to an individual in order to elicit responses on the basis of which numerical score can be assigned”. This score bases on a representative sample of the individual behavior.

On the other case Gay L.R. explain that "Test is a means of measuring the knowledge, skill, feeling, intelligence, or aptitude of an Individual or group. Test procedure numerical scores that can be used to identify, classify, or evaluate test takers".

To obtain the required scores of the students' achievement in grammar ability' in this study the researcher used two kinds of tests. They were pre-test and post-test. The pre-test was done before treatment process (teaching grammar by using Snakes and Ladders Game). This is subjective test that is given to know the basic competence for all students and to know their earlier knowledge before they get treatment. The numbers of the test given were 15 questions for 15 students.

The second was post- test. The numbers of the test given were 15 questions for 15 students. The post - test was done after treatment process (teaching grammar by using Snakes and Ladders Game). It is done to know the final score and to know the students' difference competence before and after they get treatment.

Test is examination or trial of qualities of a persons or thing " In another word, lest is the question or training and other tools which are used to measure the ability, knowledge, or, talent possessed by individual or groups

To obtain the required scores of the students' achievement in grammar ability' in this study the researcher used two kinds of tests. In this study the test that is used is achievement test is the test which is used to measure the achievement of someone, after they have learned a lesson.

In this research, it used to measure the students' achievement in mastering grammar after they have been taught by using snakes and ladders game.

According to Donald ary “Research is always dependent upon measurement”. There are two important two every important concepts that researcher must understand when they use measuring instrument. These are validity and reliability. (Ary, 2006: 242). So, the tests were constructed by the research herself using some source.

* + 1. The validity

The validity is concerned with the extent to which an instrument measures what one thinks it is measuring. It is absolutely essential that the researcher ask this question. The question of instrument validity is always specific to the particular situation and to the particular purpose for which it is being used A test that validity in one situation may not be valid in a different situation. The types of validity are content validity.

 - Content Validity

Content validity is a kind of validity which depends on careful analysis of the language being tested and of the particular test subjective. According to Gay in his book, Educational Research Competencies for analysis and Application Fourth Edition, “Content validity is of prime importance for achievement test. A test score cannot accurately reflect a student's achievement if it does not measure what the student was supposed to learn” (Gay. 1992: 156). A test is said to have content validity if its contents constitutes a representative sample of the language skill, structure, etc. Being tested, the test was valid in terms of content validity because this test accord with Syllabus.

* + 1. Reliability

Reliability is necessary characteristic of any good test for it to be valid at all: a test must first be reliable as a measuring instrument. According to Djiwondono "The reliability of the whole test can be estimated by using Spearman - Brown Formula of Split - Half Reliability method reliability, it requires test administration only one Once correct answer is given point 1while in correct answer is given 0.

 The Formula of S – B

$$n\left(∑xy\right)-\left(∑x\right).\left(∑y\right)$$

$$rb= \sqrt{\{ \left(n∑X^{2}- \left(∑X\right)^{2}\right\} \{n ∑Y^{2}- (∑Y^{2})\}}$$

rhitunng  = Coefficient correlation

∑ X1 = The total of score item

∑Y1 = The total of all score (All item)

N = The total of respondent

 The Formula of Spearman-Brown

r11 =$ \frac{2.rb}{z rb}$

r11  = reliabilities

The result of the reliable test was reliable, it’s means that the result show that half of test. Thus, to show all of the reliable of test we must use the formula Sperman Brown.

In this research the reliability of pre and post test was find 0,59 and 0,80.

Based on coefficient of correlation the class of reliability test can show in the criteria of coefficient of correlation.

Table 3.1

|  |  |
| --- | --- |
| 0,00 – 0,20 | Poor Reliability  |
| 0,20 – 0,40 | Fair Reliability |
| 0,40 – 0,70  | Good Reliability |
| 0,70 – 0,90 | Very Good Reliability |
| 0,90 – 1,00  | Excellent Reliability |

1. Observation

"Observation identifies the behavior of Interest and devises and devises
procedure for identifying, categorizing, and recording the behaviour in either a
natural or a contrived situation".

According to Gay L.R. "There are three majors types of observational research are non-participant observation, participant observation, and ethnography".

Observation includes the activity, in which the focus on a certain object by using five humans sense, such as, seeing, listening, touching and engaging. It means observation can be done with, questioner, picture, recording, voice recording

In this study, systematic observation is used to get the data. I n which the researcher use a guidance as an instrument in this observation, observation guidance contains of activities, list, which will be observed.

1. Interview

Interview is called oral questioner, it is a dialog which is done by the interviewer to get information from the interviews. Interview is used by a researcher to get information for example the students’ background the members of the facilities, etc

In this study the interview that is guided-unguided interview. In the implementation the interviewer bring guidance, but the guidance just main of questions, because the researcher wants to reduce the formal situation between the interviewer and the interviewees.

1. Documentation

Documentation is a data that is get from paper in operational documentation method; the observer observes the written sign, for the example, book magazine, document etc. Documentation method can be done by using.

* Documentation guide, which is contain the category of data that will be found its answer.
* Check list, it is variable list that will be collected its data.

Documentation is main method if the researchers use content analysis approach. For the other approach documentation has an important use too. The method and instrument of collecting data that is used in this study are test interview and documentation.

 **H.**Technique of **Data**Analysis

Generally data analysis technique include three steps, they are

* Preparation
* Tabulation
* Application the data base on the approach
1. Preparation

This activity include

* Checking the name of and identity of respondent in this study is checking the name of the test papers to identity those paper.
* Checking the data completeness, it check the contain of instrument of collecting data, in this study is checking the test papers, whether it is complete
* Checking the kinds of data essay (answer) if there is an answer that is not appropriate with the researcher wants, so those items need to be dropped, in this study is checking the test paper, is there any test papers that are not answered by students.
* Preparation activities intend to tidy up the data in order to be clean, and orderly to be analyzed.
1. Tabulation

Tabulation activities includes

* Scoring the items that need to give a score, in this study is giving score to the items in the test paper.
* Coding the items that is not given score, in this study is giving code to the items which don’t have score
* Changing the kinds of data, it is appropriated with the analysis technique that is used, in this study is changing the data into the quantitative data.
* Coding if the researcher use computer to analyze the data, it is not using in this study.
1. Applying the data according to the approach.

In experimental data analysis

In experimental design, the data analysis technique that is control group pre-test post-test design. The researcher in this research uses T-Test stated by Arikunto (2006:86) as formulated below:



Note : means of different pre-test and post test

M d : deviation in every subject (d – M)

⅀X2d  : total of quadrate deviation

N : subject of sample

d.b: decide by N-1