CHAPTER III

RESEARCH METHOD

This chapter presents the research method. It focuses the method used in conducting this research which covers research design, population and sample, research instrument, data collecting method and data analysis.

A. Research Design

Research is process that is the step combination that is done systematically and logically to get the solution of the problems or to get the answer from the certain question (Suryabarata : 2003).

Ary et al (2006 : 325) states "Experimental research design is to enable researcher to estimate the effect of an experimental treatment". Experimental research can be done in the laboratory, in the class and in the field. In this study, the experimental research is done in the class with taking students as population. A researcher chooses the design to determine the validity of conclusions can be drawn from the study.

According to Prasetyo (2008 : 160) there are many kinds of experimental research design that is Classical experimental design, Pre experimental design and Quasi experimental and special design. 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 is one or more dependent variables. An experimental usually involves two groups of subject, an experimental group and a comparison group, although it is possible to conduct an experiment with one group. This study uses pre-experimental design in the form of one- group Pretest- Posttest design using quantitative approach. In Pre-test and Post-test group the observation do two times, before giving treatment called Pre-test and after giving treatment called Post-test.

This study is classified as experimental design because it is little or no control of extraneous variable. In the one-group Pretest-Posttest design, a single group is measured or observed not only after being exposed to a treatment, but also before,

A diagram of One-Group Pretest-Post test design:

Y_1 X Y_2

Pre-test   Treatment   Post-test

(Independent variable)   (Dependent variable)
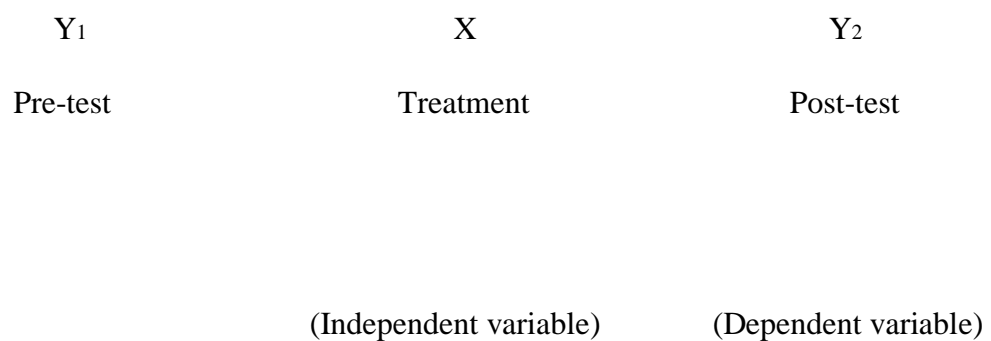
The procedures of experimental research that use one group Pretest-Posttest design:

1. Administering a Pre-test with a purpose of measuring reading achievement of eight grade students at MTs Aswaja Tunggangri Kalidawir.

2. Applying the treatment in teaching reading comprehension by using student team achievement division (STAD) as a technique.

3. Administering a Post-test with a purpose of measuring reading comprehension of eight grade students at MTs Aswaja Tunggangri Kalidawir.

In this study, the researcher uses experimental research with quantitative approach. The researcher wants to know the effectiveness of using student team achievement division (STAD) technique in teaching reading to the students' reading comprehension by experimental research. The impact is assessed by providing a specific treatment. The effectiveness will be know the significant differences between the students who are taught without using student team achievement division (STAD) technique and those are taught using student team achievement division (STAD) technique.

B. Population and Sample

Fraenkel and Wallen (1993 : 79) stated that a population is the group to which the results of the study are intended to apply. Kountour in Azib (2008 : 6) stated that population is the large group about which the generalization is made. It is defined as all members of any well-define class of people, events, or objects.

The population in this research was the eight grade of the students at MTs Aswaja Tunggangri Kalidawir, in which the total of class VIII are two classes and in this research just conducted in one class. In this research, the researchers use one class of A class as sample of this research which consist of 21 students.

Ary et al (2006:167) stated that sampling is technique taking sample which give opportunity for every element or population member to be chosen as sample. In this study, the researcher used purposive sampling technique. Because the students of the A class has homogeneity than other classes. In A class, there are 21 students consist of 10 boys and 11 girls.

C. Variable

Variable is any entity that can take on different values. Variables can be classified in several ways. The most important classification is on the bass of their use within the research under consideration, when they are classified as dependent variables or dependent variables (Ary, 1985; 30).

1. Independent variables (Y) is variable that consequence of or upon atecendent variables. One independent variable must be the treatment variable. One or more group receive the experimental manipulation or treatment. In this study the teaching reading comprehension by using student team achievement division (STAD) technique is independet variable.

2. Dependent variable (X) is the response or the criterion variable that is presumed to be caused by or influenced by the independent treatment conditions and any other independent variables. In this study the dependent variable is student's reading comprehension.

D. Data and Data Source

Data is result of research record in number and fact (Arikunto, 1997 : 91), it means that data is number of fact is found by researcher. Data in this study only uses primary data. Ari (1985) stated that primary data is data which are collected directly from the sample. For this study, the data was got from score by administering Pre-test and Post-test.

Arikunto (1998 : 114) stated that, Sources of data are subjects where data comes from. Those can be:

1. Person

    Person is man who gives the data or information orally, it can be done by interviewing or by giving questionnaire for the subject.

2. Place

    Place is the resources of data that deals with place or moving, some place can be the room. The location of the resources of material the place of this research was in MTs Aswaja Tunggangri Kalidawir.

3. Paper

Paper is resources of data that deals with symbol; picture the document, book number, the paper of this research document about structure of MTs Aswaja Tunggangri Kalidawir.

Primary data source of this research is the eight grade students of MTs Aswaja Tunggangri Kalidawir.

E. Instrument and Technique of Collecting Data

1. Instrument

According to Arikunto (1997 : 225 − 235), Instrument is the tool when the researcher uses a method so that instrument is needed to get the data in a researcher. There are five ways of collecting data in this research. Those are observation, test, questionnaire, interview and document.

In this study, researcher uses test as instrument, therefore, the researcher applied a set of tests: Pre-test and Post-test test. Test is draft of question or drill used for to know the skill, intelligence and ability of individual of group (Arikunto, 1997 : 18). Here, Pre-test was given before doing an experimental research study or before teaching by using student team achievement division (STAD) technique and Post-test was given after doing the treatment or after teaching by student team achievement division (STAD) technique.

Before instrument was used to collect the data, the writer, firstly, have to Try-out test to the eight grade students of MTs Aswaja Tunggangri Kalidawir.

There were 21 students as the respondents of the Try-out test. They had to complete the test, consisting of 25 items of multiple choices, in 45 minutes. **The item of Try-out test can be seen in appendix 1.**

According to Mouly's as quoted by Sidik, a Try-out test is necessary since the result will be used to make sure that the measuring instrument has such characteristics as validity and reliability (Sidik, 1994 : 33).

Harris (1969 : 13) states that all good tests possessed two qualities: validity and reliability. That was to say, any test that we use has to be appropriate in terms of our objectives, dependable in the evidence it provides, and applicable to our particular situation. Those characteristics of a good test would be explained further below.

a. 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 subject would measure the subject itself. For instance, the valid of reading test would measure reading.

There are three kinds of validity: content validity, empirical validity, and face validity (Harris, 1969 : 18). Harris (1969 : 18 – 2) explained: Content validity meant the test reflected an analysis according to the views of recognized authorities in the skill area. Empirical validity depended in large part on the reliability of the test and criterion measure. Face validity was the way the test look whether it was irrelevant, silly, inappropriate, etc.

In this study, content validity is used. Content validity is the content about what we say the test is about. This kind of validity depends on careful analysis of the language being tested. The test should be so constructed as to contain representative sample. The relevancy of the objective of the test and the content of the test items are show the content validity of the test. **The questions used to measure the comprehension of reading can be seen in appendix 1.**

b. Reliability

Reliability is the consistency of the measurement, or the degree to which an instrument measures the same way each time it is used under the same condition with the same subjects. In short, it is the repeatability of your measurement. Frankle (1990) states that reliability refers to the consistency of scores obtained. How the consistency of each individual student from one administration to the other and the administration of set of items to the other set.

To measure that reliability of test item, the researcher firstly gaining the Try-out. It is to know whether the instrument suitable or not. **The computation of reliability showed in appendix 3.** To check the reliability of the test, the researcher used the formula proposed by Heaton as follow:

r11 = <u>N</u> (1- <u>m (N - m)</u>)

      N - 1   N$_{x2}$

Where   N = the number of the test items

              m = the mean score of items in the test

              X = the standard deviation of all test

              r$_{11}$ = reliability

From the result in append 3, it shows that the value of reliability is 0.40. It means that the reliability of the test was good since the reliability of the test was between the range of 0 and + 1. Since the reliability of the test was good, it could be assume that the validity of the test was also good. So, it can conclude that these instruments are reliable and can be used for research.

c. Technique of Collecting Data

Data of this study was collected by administering test. Test is draft of question or drill used for to know the skill, intelligence and ability of individual or group (Arikunto, 1997 : 18). It means

that test is series of question, exercise, or other means, which are used to measure the skill and the knowledge, intelligence of a person or group.

To find out the data, the researcher applying Pre-test that held Wednesday, May 01, 2013 at 10.40 until 11.50. It's consisted of three items consisting of ten questions in the form true or false, ten questions for multiple choices and ten questions in form of easy. **The instrument of Pre-test shown in appendix 2.**

To know the student's reading comprehension in the score that is good or no, the researcher gives criteria as follow:

Table 4.1 the score's criteria

Subject	Interval Class	Criteria
A +	90 - 100	Excelent
A	80 - 89	Very Good
B	70 - 79	Good
C	60 - 69	Enough/Fair
D	50 - 59	Less
E	0 - 49	Bad/Low

d. Appraiser guidance

- The number of question are 30

- Every question given 3 score

- The number of maximum score 90

- Maximum value 100

- 3 x 30 = 90

- 90 + 10 = 100

After gaining the Pre-test, the researcher gave the treatment by taught using student team achievement division (STAD) technique.

The process of using student team achievement division (STAD) technique in the classroom deals with the preparation and schedule of activities as the implementation of the student team achievement division (STAD) technique.

1. Preparation

Before using student team achievement division (STAD) technique we need some preparation in order to make the learning process run successfully. The preparation is as follows:

a) Material

In this study, the researcher used some texts which are available in the source book as the material.

b) Assigning students to teams

As we know, student team achievement division (STAD) represents across-section of the class. A good team in the class is a three to four persons that e half male and half female. The writer may take likes, dislike and deadly combination of students into account in assigning students to team, but in deciding teams do not let the students choose their own because they will tend to choose others like themselves.

Instead follow these steps:

(1) Make copies of team summary sheet

The researcher makes one copy of a team summary sheet for every three to four students in her class.

(2) Rank students

On a sheet of paper, the researcher ranked the students in her class from the highest to lowest in past performance.

(3) Decide on the number of teams

Each team should have four members if possible. To decide how many teams the writer would have, she divided the number of students in the class by seventh groups.

(4) Assign the students to teams

In assigning students to teams, balance the team so that 1) each team is composed of students whose performance levels range from low to average to high and 2) the average performance levels of all the teams in the class is about equal.

(3) Fill out team summary sheet

Fill in the name of the students on each team summary sheet, leaving the team name of space blank. In this

study, the researcher assigned the students into team. In this phase, the researcher used the students' result of the last test they have done. Because the total of the students was 21 students, so they were divided into seventh groups.

(4) Determining initial base score

Base score represent students' average score on the past quizzes.

(5) Team building

Before starting any cooperative learning program, the researcher started off with one or more team building exercises just to give members a chance to do something funny and to get to know one another.

2. Schedule of Activities

Student team achievement division (STAD) technique consists of a regular cycle of instructional activities, as follows:

a) Teaching

It means that the researcher presents the lesson. The presentation should cover: opening, development, and guide-practice and assessment respectively. (Adapted from Good, Grouws, and Ebmeir,1983). The steps of teaching are:

(1) Opening

- Tell the students what they are about to learn and why it is important

- The teacher may have students work in their team to "discover" concept or what their appetites for the lesson

- Briefly review any pre requisite skills or information.

(2) Development

- Stick close to the objectives that the teacher wants the students to learn

- Focus on meaning, not memorization

- Actively demonstrate concept skills, using visual aids, manipulative, and many examples

- Frequently assess students' comprehension by asking many questions

- Explain why and answer is correct or incorrect, unless this is obvious

- Move to the next concept as soon as students have gasped the main idea

- Maintain momentum by eliminating interruptions, asking many questions, and moving rapidly through the lesson.

3) Guided Practice

- Have the students work problems or example or prepare answer to the questions.

- Call on the students at random. This make the students prepare themselves to answer.

- Do not give long class assignment at this point. Have students work one or two problems or examples or prepare one or two answers, then give them feedback.

b) Team Study

(1) Team

Half a class period

(2) Main idea

Student study in their teams

(3) Material needs

The work sheet and answer sheet for every team. During team study, team members' tasks are expected to master the material teacher presents in the lass on and to help their team mates master the material. Students have work sheet and answer sheet in their teams to practice the skill being taught and to assess themselves and their team mates. On the first day of team work in student team

achievement division (STAD) technique, the researcher should explain to students what it means to work in teams.

c) Test

1) Time

Half a class period

2) Main idea

Students take quiz

3) Material needed

One copy of the quiz for each student. During the quiz, do not allow the students to work together on quiz, at this point students must show what they have learned as individuals.

d) Team Recognition

The main idea of team recognitions are figuring individual Improvement scores and team scores and awarding team rewards. Team may earn certificate or the rewards if their average a certain criterion. Students' team scores may also be used determine up to twenty percent of their grades (Slavin, 1995 : 71 – 73).

In the last meeting the researcher gaining the Post-test. It was done on Friday 10, May 2013 at 10.40 until 11.50 am. It was given after the researcher giving the treatment or after teaching using student team achievement division (STAD) technique. **The question of Post-test shown in appendix 2.**

F. Technique and Data Analysis

In this research, the writer uses a quantitative data analysis technique. The quantitative data of this research is analyzed by using statistical method. The technique is used to find the significant difference on the students' comprehension taught using student team achievement division (STAD) technique and taught without using student team achievement division (STAD) technique.

The researcher in this research uses T-test as formulated below:

$$t = \frac{M_d}{\sqrt{\dfrac{\sum X_{2d}}{N(N-1)}}}$$

Notes :

t   = t-test

M_d = means of different pre-test and post-test

X_d = deviation in every subject (d – Md)

$\sum x_{2d}$ = total of quadrate deviation

N   = subject of sample

d.b   = decide by N – I

G. Hypothesis Testing

The hypothesis of this study as follow:

1. If T-test score is bigger than T-table, the alternative hypothesis (Ha) is accepted. It means that there is significant different in the score to the eight grade of student MTs Aswaja Tunggangri Kalidawir taught without using student team achievement division (STAD) technique and taught using student team achievement division (STAD). The difference is significant.

2. If T-test score is smaller than T-table, the Null Hypothesis (Ho) is rejected. It means that there is no different score to the eighth grade of students taught without using student team achievement division (STAD) technique and taught using student team achievement division (STAD) technique.