CHAPTER III

RESEARCH METHOD

This chapter serves the steps taken to conduct the study. It involves: (1) Research Design, (2) research variable, (3) population and sample, (4) Instrument, (5) Data study and source, (6) Data collection technique, (7) Data analysis, and (8) Data interpretation.

3.1 Research Design

This research aimed to find out the significant difference in students' speaking ability that was taught by using comic strips as a media. So this research is trying to identify the effectiveness of comic strips in teaching speaking. It is conduct quantitatively in the form of experimental research. To get the data, this research through pre-test and post test. So that, the researcher decides to choose the experimental research because it is appropriate with this research.

> According to ary et al (2009: 265),
> "The aim of experimental research is to establish whether a causal relationship exists between two or more variables. Because it involves control and careful observation and measurement, this method provide the most convincing facts of the effect that one variable has on another".

In conducting the study, the researcher randomizes the subjects. There are two groups in this experimental research, first is experimental group and second is control group. Both groups are administered a pretest and a post test. Before administering those tests, the researcher administers a tryout to another class to know if the test can be a good test or not by calculating the validity and reliability. Then the pretest is administered for both of groups in order to know if they have

the same capability in speaking. Meanwhile, the treatment is only applied to the experimental group while the control group is taught as usual.

After all finished, the researcher administers the post test to determine whether the treatment can improve their speaking ability or not. The quantitative experimental research presents in the table below to illustrate the experimental design.

Table 3.1

The Design of Experimental and Control Group

Group	Pretest	Treatment	Post-test
(R) E	Y1	X	Y2
(R) C	Y1	-	Y2

C : Control Group

E : Experimental Group

R : Randomized subjects

X : Experimental treatment

Y1: Pre-test before the experimental treatment

Y2 : Post-test after the experimental treatment

3.2 Time and Location of Research

This research is carried for two months started from March up to may 2015. The place is in MTs. Hidayatus Salam, Lowayu, academic year 2014/2015**.**

Table 3.2

The researcher's schedule

No.	Time	Schedule
1.	Thursday (on March,19th 2015)	Send permission letter at MTs. Hidayatus Salam, Lowayu.
2.	On April , 2st- 16th 2015	Prepare lesson plan, teaching material and speaking assessment rubric
3.	Monday (on May, 4th 2015)	Pre-test (VIII A as experimental class) Tell a story
4.	Thursday (on May,7th 2015)	Pretest (VIII B as controlled class) Tell a story
5.	Monday (on May, 11th 2015)	Treatment (VIII A as experimental class) Tell a story using media (comic strips)
6.	Thursday (on May, 14th 2015)	Usual class (VIII B as controlled class)
7.	Monday (on may, 21st 2015)	Posttest (VIII A as experimental class) Tell a story
8.	Thursday (on May, 25th 2015)	Posttest (VIII B as controlled class) Tell a story

From those schedule above, it will make easy for the researcher to do the experiment. Through three phases in this research, the researcher will get the data of the students, especially in English lesson.

3.3 Population and Sample

According to Best and Kahn (2006:13) argues that A population is any group of elements whether individuals, objects or results that conform to specific criteria to which intend to generalize the results of the research. While sample defines as a portion of population which is indicated to a small group that has been selected to be observed.

The population in this research is the second year of MTs. Hidayatus Salam. Based on the population the researcher chooses two classes, each of it is determined as the experimental group and a control group. The researcher chooses the sample systematically, because in the second year of MTs. Hidayatus Salam has two classes in the eight grade students. The two classes are VIII A and VIII B. Then VIII A is chosen randomly by the researcher as the experimental group and VIII B as the control group.

The researcher applies simple random sampling. The used of simple random sampling started from the decision to limit the amount of the students. At the first, the amount of the students are 64 students, 30 students are from VIII A and the other 34 students are from VIII B. To make it balance between those two classes, the researcher randomizes the amount to 30 students each class. The remaining 4 students in VIII B are not counted but they still take the test.

3.4 Research Variables

Variable is a concept that can be presented to different range of scores (Ary, 2009:37). There are two variables in this study. Those are independent and dependent variables. Independent variable is a variable that is selected, it can be manipulated, and measured for the investigation (Brown, 2007). The independent variable of this study is the use of comic strips in teaching speaking. While the dependent variable is variable that is observed and measured to determine the effect of independent variable (Creswell, 2002:115). Hence, the students' speaking become the dependent variable.

3.5 Data Collection Technique and Research Instruments

The use of instrument is mainly important. Ary (2009) says that instrument is an operational devise to define variables. The instrument which is used in this research for measuring the quantitative data is test. According to Bachman (2004:39) a test is a part of measurement type that is designed to get the certain behavior from which one can make inferences about certain characteristics of an individual. In this research, the researcher needs data in a form of score in order to examine students' speaking ability, so the instrument of this research is a subjective speaking test.

3.5.1 Pre- test

According to Creswell pre-test is a test before training (2002:297). The researcher uses the pre- test to know the students' speaking ability before giving the treatment for the students in the experimental group. It is conducted to know the ability of control and experimental group before giving the treatment. In this study, pre-test is used to measure the students' speaking ability before giving treatment. In in this type, students are asked to work individually to tell a short story that have chosen by the teacher.

3.5.2 Test of homogeneity of variance

Before conducting the post test the researcher did the test of homogeneity of variance by using spss 16.0. The test homogeneity of variance is used to check whether the experimental and control group have the same ability or not. Here, H0 is accepted if the p value is higher than α (0.05), it means that the result is homogeinous. In addition H0 is refused if

the p value is lower than α (0.05), it means that the result is not homogeinous. The result of this test is as seen in the table below:

Test of Homogeneity of Variances

VAR00001

Levene Statistic	df1	df2	Sig.
1.047	1	58	.311

Based on the data above, the pretest data is receiving H0 because p value (0.311) > α (0.05) means that the data is considering homogeneity.

3.5.3 Post- test

According to Creswell (2002:297) post-test is a measurement which is done after the training that is represented through the improvement. Same with pre-test, the post-test is done for both control and experimental groups. This post-test is done after the experimental group got a treatment. It is conducted to know whether both of experimental and controlled group have the significant different or not. In the post-test the students are also asked to work individually. It is still same with the pre-test. Therefore the students must come forward in front of class to tell a short story which was chosen by the teacher before. It is purposed to know the students' achievement after the treatment was conducted. Thus, before delivering a pretest, the researcher also administers a try out to measure the validity and reliability of the test otherwise to find out an appropriate time allotment.

3.6 Validity and Reliability

Before pretest and post test are held, the test's validity and reliability should be checked at the first place. It's called try out. Therefore the researcher should conduct try out of the test before the researcher conducting pretest. There are the aims why the try out was conducted. The first purpose is decided whether the test has a good validity and reliability or not. Second, it is done to determine whether the test is appropriate and suitable for the students' level or not. The last purpose is about time allocation. Time allocation makes the researcher knows when the students do the test. To check the reliable and validation, the researcher uses these following terms.

3.6.1 Validity

A test is valid if it is appropriate, meaningful, and useful in term of the purpose of the test (Gronlund, 1998: 226 in Brown, 2004:22). In fact, based on Brown (2000:388) there are three kinds of validity; content validity, Construct validity, and Face validity. In this study, the researcher uses the content validity. To have the content validity, the test or instrument should represent the content universe (Ary, et al. 1985). It means that the test can be said valid if it represent the content universe. In addition, the validators were the English speaking lecturer and English teacher.

Content validity is the most suitable measurement for measuring the validity of the test in this study, because content validity is

important in evaluating achievement test. In this study to get content validity the researcher matches with the curriculum 2006 (KTSP).

Table 3.3

The Result of Analyzing Validity

Test item	Standard Competency	Basic Competency	Sub Basic Competence	Indicators	Validity
Tell a story about " where can an elephant hide?"	Reveal the mean of functional spoken text and short monologue in the form of *recount* and *narrative* to interact with around environment.	Reveal the mean of short monologue by using variety of spoken language accurately, fluency and acceptable to interact with around environment in the form of *recount* and *narrative* text.	Reveal the mean of short monologue by using variety of spoken language accurately, fluency and acceptable to interact with around environment in the form of *narrative* text.	Doing a short monologue in the form of *narrative* and *recount*	Valid

Therefore, the test item is considered valid because it matches with the standard competence and basic competence for eight graders of Junior High School.

3.6.2 Reliability

A test can be a good instrument not only when it is valid but also reliable. So reliability is also important in measuring the instrument. It is defined as consistency and dependable of measurement (Brown, 2004:20). In other words, a reliable test means that the score will be consistent

although it is tested through different characteristic of testing situation. In the reliability, the researcher uses another class to give the same test. Therefore the researcher not using the control group and the experimental group. In order that the students of experimental and control groups not know the form of the test and avoid the leak happen.

In this study the researcher must determine the reliability of the ratings by involving different judges or observers to give similar scores or rating to the same situation, so the inter-rater reliability is used (Brown 2004:21). It is supported by Heaton (1990: 162) a test that is categorized reliable if the scores are relatively stable among one rater to another.

The judges are the researcher as rater 1 and the English teacher as rater 2. They assessed the students' speaking composition based on five judgments i.e fluency, pronunciation, accuracy, vocabulary, comprehensibility, and performance which are adopted by criteria scoring by oral proficiency scoring categories (Brown, 2001, pp. 406-407) and it have been modified by the researcher (see appendix 1). Afterward, the researcher computed correlation between two sets of scores by using Pearson Product-Moment correlation (Bartz, 1976:195) to measure the reliability. The formula is as follows:

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

$\sum xy$ = total of result times score X and Y

$\sum x$ = total score X (total score from researcher as rater 1)

$\sum y$ = total score Y (total score from teacher as rater 2)

$\sum x^2$ = total quadrate score X

$\sum y^2$ = total quadrate score Y

N = number of subjects

From that computation result, the level of reliability is determined based on the criteria which proposed by Bartz (1976:205) as presented in the table below.

Table 3.4

The criteria of reliability of the test with the description.

Criteria	Description
0.80 < r	The reliability is very high
0.60 ≤ r ≤ 0.80	The reliability is strong
0.40 ≤ r ≤ 0.60	The reliability is moderate
0.20 ≤ r ≤ 0.40	The reliability is low
r< 0.20	The reliability is very low

Table 3.5

The result of Analyzing Reliability

	X (Rater 1)	Y (Rater 2)
Mean	53.13	53.4
Standard Deviation (s)	4.36	2
Pearson product moment (r)	.9	
Explanation	The reliability is very high	

Based on the table above, the result of analyzing reliability from two raters was .9 (see appendix 3). Based on criteria which proposed by Bartz, the test was considered reliable because it was " very high reliability".

3.7 Research procedures

This study contains of three steps: (1) preparation, (2) implementation, and (3) data analysis. Then, the activities are done with these following steps:

3.7.1 Preparation

a. Observing the school where the research takes place.

b. Arranging and deciding the material which is used in this research.

c. Arranging the lesson plan which has been consulted to the advisers.

d. Arranging the instrument of research.

e. Testing the instrument of research.

f. Analyzing the instrument.

g. Choosing the experimental and controlled class randomly.

3.7.2 Implementation

A. Giving pre-test to measure the student's speaking ability.

B. Implementing the comic strips as media in the experimental class.

C. Giving post-test to measure the student's speaking ability.

3.7.3 Data analysis

a. Firstly, the researcher would find a new method in teaching learning process which is focused in speaking.
b. Secondly, before observing the researcher selects some of comic strips but the researcher only chooses one comic strip for material and giving the pre-test to students.
c. Thirdly, the researcher uses comic strips as a teaching media in experimental class but in controlled class the researcher does not use the media.
d. The researcher analyzes the data step by step. Starting from pre-test to post-test. After giving the test, the researcher will count the data and compare them in order to measure the comparison between these different classes.

3.8 Data Analysis Technique

In this study, the scores of the test are analyzed statistically by using t-test. If the t > t .05 means there is a significant different. The steps are as follow:

1. Computing the mean of pretest and posttest scores in each group by arithmetic average technic. (Bachman, 2004:56).

$$\bar{x} = \frac{\Sigma x}{N}$$

$\bar{x}$ = mean

Σx = the sum of the x scores

N = the number of the subjects

2. Determining the Standard Deviation that used for the scores pretest and post test for both groups from raw scores. (Bachman, 2004:68).

$$s = \sqrt{\frac{\sum x^2}{N} - \bar{x}^2}$$

S = Standard Deviation

$\sum x^2$ = the sum of the x squared scores

$\bar{X}^2$ = the mean of distribution

N = the number of the students

3. Determining Standard Error of the differences by parametric test of significance. (Butler, 2006:79)

$$S_{D\bar{x}} = \sqrt{\frac{N_1 S_1^{\,2} + N_2 S_2^{\,2}}{N_1 + N_2 - 2}\left(\frac{1}{N_1} + \frac{1}{N_2}\right)}$$

$S_{D\bar{x}}$ = Standard error of difference

S_1 = the standard deviation of the first sample

S_2 = the standard deviation of the second sample

N_1 = the sizes of the first receptive sample

N_2 = the sizes of the second receptive sample

4. Determining Degree of Freedom. (Bachman, 2004:239)

$$df = N_1 + N_2 - 2$$

df = degree of freedom

N_1 = the size of the first receptive sample

N_2 = the size of the second receptive sample

5. Computing t-test by parametric test of significance. (Butler, 2006:85)

The t-test formula, used to analyze the significance between pretest and posttest for each group .

$$t = \frac{\overline{X}_1 - \overline{X}_2 - 0}{S_{D\bar{x}}}$$

t = the t-test

$\bar{X}_1$ = the mean of the distribution 1

$\bar{X}_2$ = the mean of the distribution 2

$S_{D\bar{x}}$ = Standard error of difference

6. Explaining the result whether it is significant or not and explaining which term that influence more the significant score.