

CHAPTER III

RESEARCH METHOD

This chapter consisted of research design, population and sample, research instrument and procedure of collecting data.

3.1 Research Design

The researcher uses quantitative research design to conduct this research. The researcher also uses experimental research design to test the theory whether it gives significant effect or not with their ability. More specifically, this research would use quasi experimental research design, because the school does not allow the researcher to do randomization and do true experiment at MTs. Bustanul Ulum Tanggunprigel. It is because the classification of the class at MTs. Bustanul Ulum Tanggunprigel had been determined by the teacher it means that the researcher cannot change the classification of the group. So that, the researcher does not have access to full control the target and the time for this study is also limited.

There are two variables in this study. The first is speaking skill as dependent variable and the second is interactive guessing game technique as independent variable. There will be two groups in this study. They are experimental group and control group. Experimental group will taught by using interactive guessing game technique while control group will taught by using two stay two stray.

Table 3.1 Design of experimental can be described as follows:

Group	Pre-test	Treatments	Post-test
Experiment	X	X	X
Control	X	-	X

Where X : With treatment (using interactive guessing game technique)

- : Without treatment (using two stay two stray)

In the design above, quality of the subjects was first checked by pre-testing them. Then, treatment was given to the experimental group. The two groups were taught same topic with different techniques of teaching. The experimental group was taught by using interactive guessing game technique. Meanwhile, the control group taught by using two stay two stray. Both groups got the same materials of learning. Pre-test and post-test were given to them. The result were computed statistically.

3.2 Population and Sample

3.2.1 Population

The population of this research is eighth grade student of MTs. Bustanul Ulum Tanggungprigel, in second academic year 2017/2018. The eighth grade students consist of two classes, they are VIII A and VIII B. The researcher choose that school because the teacher never use interactive guessing game technique before but she usually uses lecture and discussion method. It was known by interviewed with English teahcer in MTs. Bustanul Ulum Tanggungprigel. So, in

this study the researcher try to implement interactive guessing game technique in the teaching and learning process.

3.2.2 Sample

The researcher uses population sampling technique to determine the sample of this research. Population sampling technique is used if the total of population is used as sample. Two classes of 8th grade students were taken as the sample of this study. Those are VIII A as experimental group who were taught by using interactive guessing game technique and VIII B as control group who where taught by using two stay two stray. The researcher hope this research is going to be finished earlier.

Table 3.2.2 The Number of the eighth grade students of MTs. Bustanul Ulum Tanggungprigel

No.	Grades	Group	Number of Students
1.	VIII A	Experiment	25
2.	VIII B	Control	25
Total Number of Students			50

3.3 Data Collection

In this study, researcher collects the data from speaking test by conducting a test before treatment to experimental group and control group. The first data is pre-test that is given for student of MTs. Bustanul Ulum Tanggungprigel. It is to know the student's ability before the students get treatments. After pre-test the researcher gives treatments for four times. Then, the researcher gives post-test to know the influence of interactive guessing game technique in their speaking

ability. After that, the researcher collects the data from students' pre-test and post-test score. Then, the researcher begins to analyze the data by SPSS 16.0 program.

3.3.1 Research Instrument

The main instrument that used in this research was speaking test. To reach the goal of this study, the writer had to construct suitable test. She had to choose type of test and arrangement of test. In this study, the writer used the test as instrument to collect data. The test will be given after the instruction explains the material. There are two tests that used by the researcher. Those are pre-test and post-test. Pre-test and post-test will be conducted to the Junior High School students. It is to find out whether they make progress in the speaking ability or not. The researcher designed of pre-test different with post-test but the test are still equal in the term of topic and item. The researcher designed speaking test by herself from guide book of the school and the internet. The selection of pre-test and post-test adapted with the syllabus at eight grade with focus on speaking skill. The test can be elaborated as follows:

3.3.1.1 Test

There are two tests which used by researcher namely pre-test and post-test. It is given to experimental and control group to know any progress or not in their speaking ability. Researcher develops the test based on their syllabus which focuses on speaking skill and the material is about short functional text that consist of 3 topics, those are short message, announcement and notice.

a. Pre-test

The data will be collected by pre-test in both of classes to know the differences between two classes which taught by two stay two stray and interactive guessing game technique. Pre-test will be held in both classes to know the student's speaking ability before giving treatment. Pre-test is given to find out the initial different between experimental and control group as they have similar lever in speaking ability. The test is in form of oral test because it is focus on speaking skill. The researcher will give pre-test different with post-test but the test are still equal in the term of topic and item. Here the researcher provide some situations then ask the students to make 2 topic whether it is an announcement and short message or an announcement and a notice, it based on the students' choice.

b. Post-test

Post-test was conducted after giving treatment. For the experimental group, interactive guessing game was used to improve their speaking ability. For control group two stay two stray in their activity. Post-test was used to measure the student ability after giving the treatment. The researcher will give post-test, here the researcher provide some situations that different with pre-test, then ask the students to make 2 topic whether it is an announcement and short message or an announcement and a notice, it based on the students' choice.

3.3.2 Validity

Validity is measurement of the test item. Validity is needed before giving pre-test and post-test to know the item of test is valid. The researcher do validity

testing in order to know whether the test is valid or not. Here the researcher will use content validity to verify the validity of pre test and pot test that will be given to the students. According to Ary (1990:258) content validity is not always in numeric form, but it can be shown by the test's item reflect to the course and objective in curriculum guides, syllabus, course books and worksheet. For testing the content validity the researcher compares the instrument content to the subject basic on curriculum and syllabus of Junior High School. If the test content appropriate with the curriculum guides, syllabus, and course books, it means the test have content validity and the test item can give to the students. The test should determine whether the items of the test represent the objective. Reading and listening included objective item whereas speaking and writing included subjective item. This study included in subjective test, the content validity was measured by relating the content of the instrument with content standard in Indonesian curriculum. The instrument of this study is in the form speaking test which measured the ability in students' speaking skill. Here the researcher helped by English teacher to check the instrument based on curriculum and syllabus. The detail is in appendix.

3.3.3 Reliability

The reliable is when the rubric is consistent and trusty in measurement (Brown, 2001:386). The reliability is used to know whether the rubric is reliable or not. To measure the reliability of a subjective test such as speaking test, the researcher use the rubric for score students' speaking skill that have been adapted

from Harris (1999). The researcher did try out for both 8 A and 8 B. Based on the result of trying out for pre and post test, the researcher found that both pre and post test were reliable. It was shown from the result of test items reability in scoring rubric after try out. The all aspects in scoring rubric had covered some criterias of students' speaking skill.

3.3.4 Procedure of Collecting Data

In collecting data, researcher does some procedures. The first is researcher makes pre-test and post-test item. Next step is researcher makes a subject into two group as control group and experimental group. Then, the researcher gives treatment to experimental group using interactive guessing game technique and control group two stay two stray. The fifth step is researcher gives post-test to experimental group and control group and the last step is analyzing the data from pre-test and post-test by using SPSS 16.0 program.

Table 3.3.4 The Schedule of Implementation

No.	Date	Activities
1.	First meeting	Giving pre-test for experimental and control group
2.	Second meeting	Giving first treatment about short message
3.	Third meeting	Giving second treatment about announcement
4.	Fourth meeting	Giving third treatment about notice
5.	Fifth meeting	Giving fourth treatment about short message, announcement and notice
6.	Sixth meeting	Giving post-test for experimental and control group

In this study, the researcher conducts four meetings to apply interactive guessing game technique implemented by eight grade student in speaking ability at MTs. Bustanul Ulum Tanggunprigel. Indeed, based on the table 3.3.4 the researcher makes four lesson plans of each class (see appendix). Further, in this study the researcher gives pre-test and post-test before and after the treatment.

3.3.5 Scoring Guide

This study use scoring technique based on the standard criteria of speaking performance. The scoring guide used the method of analytical and was chosen because it was ideally suited to the classroom situation. According to Brown (2004) there are some criterias that used to measure student's speaking ability such as; pronunciation, grammar, vocabulary, fluency and comprehension. From those some criterias, they have each score and the name is rating scale. It use to help give score for students. The researcher uses analytical scoring rubric because it is provide more detailed feedback, scoring more consistent across students and provides more guidance for instructional planning. The aspects that the researcher used is adapted from Harris (1999) as cited in Amir, 2010. It can be seen in the following table:

Table 3.3.5 The Scoring Rubric of Speaking

No	Criteria	Rating Scale			
		Poor 1	Fair 2	Good 3	Excellent 4
1.	Fluency	Students hesitant too often when speak which interfere communication	Students speak with some hesitant with often interfere communication	Students speak with some hesitant but it does not really interfere communication	Students speak bravely and clearly with little hesitant that does not interfere communication
2.	Pronunciation	There are an error with more than 15 pronunciation	There are an error with 10-12 pronunciation	There are an error with 6-8 pronunciation	There are an error with 3-5 pronunciation
3.	Content	The content does not match at all with the theme which is chosen by the teacher and forget to arrange the content with the generic structure	The content is little bit match with the theme which is chosen by the teacher and arrange the content with the generic structure but not well organize	The content is match with the theme which is chosen by the teacher and arrange the content with the generic structure but nor well organize	The content is match with the theme which is chosen by the teacher and the generic structure is well organize
4.	Vocabulary	Able to use more than 5 words	Able to use more than 10 words	Able to use more than 15 words	Able to use more than 20 words
5.	Comprehension	Delivering short functional text with limited understanding of content	Delivering short functional text with some understanding of content	Delivering monologue with many understanding of content	Delivering monologue with full understanding of content. There is no repetition and full of rephrasing

Skor total siswa

$$\text{Konversi nilai} = \frac{\text{Skor total siswa}}{\text{Skor maksimum perangkat test}} \times 100$$

3.4 Data Analysis

After conducting pre and post test, the next step is analyzing the data. In conducting a research, it is necessity to analyze the data in order to interpret the data obtained from the field. The data analysis is carried out in order to answer the research problem with the data obtained through pre and post test. The researcher analyzes the data by using independent sample t-test. Since the samples are small and the groups are independent, the t-test for independent samples is carried out to determine whether there is any difference between experiment and control group.

The researcher used SPSS version 16.0 to compute statistics of students speaking skill in short functional text. This study is conducted in order to find the effect of the treatment whether is significant or not using interactive guessing game technique. Assumption for the independent t-test where: (1) Independence: Observations within each sample must be independent (they do not influence each other); (2) Normal Distribution: The two population must be normally distributed. In this study included in parametric research which divided into two kinds of data; ratio and interval. The data of this study is ratio because zero has value or absolute zero. If the data are ratio, the data is definite homogeny and normal distribution. Last, (3) Homogeneity of Variance: The two populations must have equal variance (the degree which the distribution are spread out is approximately equal).

3.4.1 Normality Distribution Test

To analyze the normal distribution, this study uses Kolmogorov Smirnov Sample in SPSS version 16.0. It is aim to find out the distributions of pretest score

in two groups are normally distributed or not. In this case the result of the normality distribution is also used to find out the normality distribution between two groups (experimental group and control group) in pre test score are normal or not. The first step in calculating the normality distribution test state that the hypothesis:

Ho : the score of the experimental and control group are normality distributed.

The second step is calculating the normality distribution test tried to compare the Sig. with the level of significance for testing the hypothesis. If the Sig. is more than the level significance (0.05) the null hypothesis is accepted, the score normally distributed. On the other hand, if the Sig. is less than the level of significance (0.05) the null hypothesis is rejected. The procedure analyze is press menu, click Analyze, click Descriptive Statistic, click Explore and move all variable to Dependent List box, click Plots and tick Normality Plots with test then Continue.

3.4.2 Homogeneity Test of Variance

Homogeneity test of variance uses to know whether two groups are in the same position. For homogeneity test, the researcher uses Levene's test of homogeneity in SPSS 16.0 version because Levene's test of the homogeneity uses to assess the equality of the variance for a variable calculates for two or more groups. In this study has two groups; experimental and control groups. So, in this

study uses Levene's test. The test of Levene's test or P_{value} defined as follow (Brown:1974):

$$W = \frac{(N - k) \sum_{i=1}^k N_i (Z_{i.} - Z_{..})^2}{(k - 1) \sum_{i=1}^k \sum_{j=1}^{n_i} (Z_{ij.} - Z_{i.})^2}$$

Where

W : Result of test

K : Number of different groups to which sample case belong

N : Total number of cases in all groups

N_i : Number of cases in i^{th} groups

Y_{ij} : Value of the measured variable for j^{th} case from i^{th} group

$$Z_{ij} = |Y_{ij} - \gamma_i|, \gamma_i \text{ is mean of } i - \text{th group}$$

$$Z_{ij} = |Y_{ij} - \gamma_i|, \gamma_i \text{ is median of } i - \text{th group}$$

The significance of W is tested against F (α , K-1, N-K) where F is a quintile of F test distribution, with K-1 and N-K its degree of freedom, and α is the chosen level of significance (usually 0.05 or 0.01). Based on Shadish (2002), the procedures in analyzing the homogeneity by using SPSS version 16.0 are as follow: first, makes two columns. The first column is a group and the second column is a score, after the pre-test and post-test data from both experimental and control group are input, then click Analyze, Compare Means, and then Independent Sample T-test, input the score into Test Variable and the grouping

variable, then click define groups to determine group 1 (for experimental) and group 2 (for control) click continue and the last click OK.

3.4.3 Hypothesis Testing

Independent t-test uses to find out the significant difference of using interactive guessing game technique implemented by eight grade students to improve speaking ability between experimental and control group. The steps of t-test calculation are:

1. Test the hypothesis of the research and the setting α (alpha) level at 0.05 (two-tailed test). The hypothesis in this research could be formulated as follow:

Null hypothesis is $\mu_1 - \mu_2 = 0$ ($\mu_1 = \mu_2$)

Alternative hypothesis is $\mu_1 - \mu_2 \neq 0$ ($\mu_1 \neq \mu_2$)

H_0 : There is no significant effect on fluency students' speaking skill taught by using interactive guessing game technique at the eighth grade students of MTs. Bustanul Ulum Tanggunprigel.

H_1 : There is significant effect on fluency students' speaking skill taught by using interactive guessing game technique at the eighth grade students of MTs. Bustanul Ulum Tanggunprigel.

2. Finding t-value using Independent - Sample T-Test and comparing the probability with the level of significance for testing the hypothesis. After the scores compute in SPSS 16.00 version, then see the output of Independent-

Sample T-Test and interpret the output that if sig. (2-tailed) > α (0.05), the researcher should accept the H_0 , but if sig. (2-tailed) < α (0.05), the researcher can be rejected the H_0 , it means H_1 is accepted. T-test calculates to find out the comparison of two means between pre and post test score of experimental and control group. In analyzing the data, the researcher uses independent t-test formula. The formula for calculating t-test is:

$$t = \frac{(\bar{x}_1 - \bar{x}_2) - (\mu_1 - \mu_2)}{S_{\bar{x}_1 - \bar{x}_2}}$$

Where

- t : t value
- \bar{x}_1 : Average group 1
- \bar{x}_2 : Average group 2
- S : Standard error of two groups
- $\mu_1 - \mu_2$: Always defaults to 0

$$S_{\bar{x}_1 - \bar{x}_2} = \frac{\sqrt{S^2_{\text{pooled}} + S^2_{\text{pooled}}}}{n_1 + n_2}$$

Where

- $S_{\bar{x}_1 - \bar{x}_2}$: Standard error of two groups
- S^2_{pooled} : Variants of two groups
- n_1 : Number of sample group 1
- n_2 : Number of sample group 2

Pooled variance : The average of two sample variances, allowing the larger sample to weight more heavily.

Formula:

Estimated standard error of the difference

$$S_{x_1-x_2} = \frac{\sqrt{(SS_1 + SS_2)(1 + 1)}}{(n_1 + n_2)(n_1 + n_2)}$$

In calculating t-test, the researcher uses SPSS 16.0 version. The first steps, input the data of post-test in SPSS program between experimental and control group, then click Analyze then Compare Mean Then Independent Sample T-Test. In Independent Sample T- Test, input the score variable into Test Variable column, and group variable Grouping Variable column, then clicks Define Group, Choose group 1 (for experimental) and group 2 (for control), then click OK.