CHAPTER III

RESEARCH METHODOLOGY

A. Research Design

This research is an experimental research. This research concerned the implement of jigsaw techniques dependent variable and students' speaking skill as an independent variable. Researcher divided sample into two groups. They concerned for experimental research. According to Sugiono (2013:109), experiment research is methods that is used to search for a specific treatment effect against the other under controlled condition.

This research used post-test only design. Because of this research used the post-test only design, it gave just post to the student, it was given after giving treatment.

In teaching speaking process, the two groups are taught by different technique but same teacher and same topic. The experimental group is taught by using Jigsaw technique and the control group is taught by conventional technique. The treatment was given to experimental group. Every meeting the researcher gave different topics. At the end of the treatment, the researcher gave the students post-test.

At the end of the research, the researcher had to make the post-test to see the result of the technique that used in the class, Jigsaw technique and the conventional technique influenced students speaking ability. The test was speaking test.

Table 3.1
The Table Research Design

	Treatment	Posttest
Experiment	**X**	**T**
Control	**-**	**T**

X= treatment of experimental group

T= post-test for experimental group and control group

B. Population and Sample

1. Population

Gay et al (2000:122) state that population is the testing sample of the research can allow the researcher to make inferences about the performance of the larger group. Arikunto (2010:173) says that population is all of the subject in research. Besides that, Encyclopedia of Educational Evaluation in

Sugiono (2013:119) says that population is the generalization region that consists of object or subject that have certain qualities and characteristics, defined by the research to learn and then draw conclusion. The population was students in eighth grade at SMPN 2 Lembah Melintang in the academic year of 2017/2018. There were four classes and the totals of students' class VIII were 105 students. As shown in the table bellows:

Table 3.2

Total of Students at SMPN 2 Lembah Melintang Class VIII

Academic Year 2017/2018

NO	CLASS	TOTAL
1	VIII. 1	25
2	VIII. 2	26
3	VIII. 3	27
4	VIII.4	27
	Total	105

Source: Curriculum staff of SMPN 2 Lembah Melintang

They were chosen as the population based on the assumption that they had a basic knowledge on speaking. They also are taught with the same material and syllabus.

After deciding the population, the researcher used SPSS to show normality and homogeneity from the four classes above. Then to show the sample representative or not the researcher does the next step:

2. Sample

According to Gay (2000:121) sample is the process of selecting a number of individuals for a study in such way that the individual represent the large group which it is selected. Sample is a part of the population to research. Gay (2000) also states that a good sample is the one that representative of the population from which is selected. The sample of this research consisted of two groups; an experimental group and a control group. Researcher used random sampling to get sample.

According to Gay (2000: 123) random sampling is the process of selecting a sample in such a way that all individuals in the defined population have an equal and independent chance of being selected for the sample. Based on the four classes above, the researcher chose two classes as the sample. The researcher took class VIII.1 and VIII.2 as the sample because both of this class had same qualification. The samples were 51 students. In determining experimental group and control group the researcher used flapping coin. The researcher got the result that class VIII.1 as experimental group with 25 students and class VIII.2 as control group with 26 students.

To get the representative sample of this research, the researcher Collected the MID test scores of second semester data from the English teacher and test of normality, normality test had an objective to know the population normal or not. The researcher used Kolmogorov Smirnov and Shapiro-Wilk to do normality test, it is SPSS (*Statistical product and service solution)* test. The data would be normality tests, if every class was significant or more than 0.05.

Table 3.3

Tests of Normality							
		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Kelas	Statistic	Df	Sig.	Statistic	Df	Sig.
Nilai	VIII.1	.153	25	.135	.944	25	.179
	VIII.2	.143	26	.183	.932	26	.086
	VIII.3	.094	27	.200*	.944	27	.149
	VIII.4	.134	27	.200*	.941	27	.132
*. This is a lower bound of the true significance.							

Test of Homogeneous Variances, after doing the normality test and got the normal data. Then the researcher did the homogeneous variation test. This test had an objective as to know the sample homogeny or not. The researcher did the test of homogeneity by using *Test of homogeneity of variance.* If the data were significant or the data were more than 0.05 it means the data was homogeneous

Table 3.4

Test of Homogeneity of Variances			
Nilai			
Levene Statistic	df1	df2	Sig.
2,394	3	101	.073

In determining control and experimental class, After analyzing the normality and homogeneity test researcher choose two classes as the sample of the research as randomly. Because all of the classes were normal in distribution and also homogeny, the researcher found two samples, they are VIII.1 and VIII.2. By flipping the coin, the researcher found that VIII.2 as control class, and VIII.1 as experimental class.

Table 3.5

Sample of the Research

No	Class	Description
1	VIII.2	Control
2	VIII.1	Experiment

C. Place and Time of Research

This research was done at Junior High School 2 Lembah Melintang. This place was chosen because the researcher got ever teaching practice there. The researcher took two classes as a sample it was the class experiment and class control. The treatment conducted as the first semester. The treatment carried out based on the teaching schedule of Junior High School 2 Lembah Melintang. The time allocation of English subject was twice for each class or 4 x 40 minutes and each meeting spent 80 minutes or 2 x 40 minutes by applying Jigsaw to improve students' ability in speaking skill.

D. Instrument of the Research

The writer used speaking test an instrument. According to Sugiyono(2013:102) instrument is the tools that used to assess social phenomena that observed. Then according to Arikunto (2010: 265), the instrument is the tools selected and used by researchers to collect data become systematic and facilitated. The data of this research was collected from student's performance. The students present the dialogue about expression inviting, accepting and declining invitation in front of the class with their own words based on their discussion.

After of treatment, the researcher gave post-test to both of class. The post-test was interview test. The researcher gave some questions for each student of the both of class experimental class and control class, Hughes stated (2003:119) that interview is traditional form and had at least

one potentially serious drawback. The result evaluated by concerning five aspects: Pronunciation, grammar, vocabulary, fluency, and comprehension.

E. Procedure of the Experimental Research

The researcher used two classes to collect the data, the researcher taught the students by using Jigsaw Technique for experimental class, and the English teacher taught conventional technique for the control class. However, the material in learning was same. In short, the researcher explained the procedures as below:

1. Determining the research time.
2. Prepared the lessons to plan arranged by the curriculum.
3. Doing treatment for both experimental and control groups.

Table 3.6

Treatment Procedure for Experimental and Control Groups

Experimental Group	**Control Group**
Pre-activity **Appreciation** 1) Teacher greats the students 2) Teacher and students pray 3) Check attendant list 4) Ask the students whether they are ready to study or not 5) Teacher asks students about the last material **Motivation** 1) Teacher motivated the students 2) Teacher encourages students to speak English by asking questions	**Pre-activity** **Appreciation** 1) Teacher greats the students 2) Teacher and students pray 3) Check attendant list 4) Ask the students whether they are ready to study or not 5) Teacher asks students about the last material **Motivation** 1) Teacher motivated the students 2) Teacher encourages students to speak English by asking

	questions
Whilst-activity **Exploration** 1) Teacher introduces learning objective to students 2) Teacher give an example of a dialogue 3) Teacher asks the student to read an example of a dialogue **Elaboration** 1. The teacher asks the student to sit in home group consist of 3 members and give a number to students in each group 2. The teacher selects and give appropriate text 3. Teacher assign each student a number topic which the student become expert based on their number 4. Teacher asks the student to sit in the expert group based on their subject 5. The teacher asks to the students to understand the topic and asks the students to discuss about their segment that given by the teacher 6. After that, asks the students to come back to their homegroup 7. The expert then teaches what they have learned to the rest group 8. Teacher asks the students to present their topic in front of the class	**Whilst-activity** **Exploration** 1) Teacher explains the materials to the student about the expression of inviting, accepting and declining invitation 2) The teacher gives some questions based on the topic to build students' background knowledge 3) Students answer the questions about the text **Elaboration** 1) The teacher asks to the student to sit in group consist of 3 member 2) The teacher asks the student to make dialogue about inviting, accepting and declining invitation about the birthday party **Confirmation** The teacher helped students to present their work in front of the class, and teacher evaluates it.

Confirmation 1. The other may give any response such us comment, questions, and critics. 2. After there are no responses from other groups, the teacher give any critics or suggestion to make better	
Post-activity 1) Teacher asks the students about the conclusion or expressions or asking for repetition the material 2) Teacher revises students' false 3) Teacher asks students to practice outside if schools 4) Teacher gives reflection to the students 5) Teacher assesses the student pronunciation, grammar, vocabulary, fluency, and comprehension in speaking activity.	**Post-activity** 1) The teacher asks the students about the conclusion or expressions or asking for repetition the material 2) The teacher assesses their pronunciation, grammar, vocabulary, fluency, and comprehension in speaking activity.

4. After the treatment, each group would have a post-test.
5. The result calculated by using the percentage of improvement.
6. Findings.

E. Technique of Data Collection

The data was collected through a post- test score. The test was speaking test-performed interview. Interviewer interviewed the students one by one. The post- test was given to both control group and an experimental group that related to material and lesson plan.

The scoring of this research based on students' abilities in speaking such as; pronunciation, vocabulary, grammar, fluency, and

comprehension. There are many scoring in speaking abilities according to Hughes(2003:131-132).

F. The Technique of Data Analysis

The technique of data analysis used the statistical procedure. In this research, the researcher used two statistical procedures to analyze the data. In analyzing the different mean by using t-test formula as follows:

1. This formula applied to decide to mean of students' test score in experimental and control groups:

$$\bar{x}_1 = \frac{\sum f_1 x_1}{\sum f_1} \text{ (Experimental Group)}$$

$$\bar{x}_2 = \frac{\sum f_2 x_2}{\sum f_2} \text{ (Control Group)}$$

2. This formula was used to decide standard deviation of experimental group:

$$s_1^2 = \frac{n\sum f_i x_i^2 (\sum f_i x_i)^2}{n(n-1)}$$

3. This formula was used to decide standard deviation of control group:

$$s_2^2 = \frac{n\sum f_2 x_2^2 (\sum f_2 x_2)^2}{n(n-1)}$$

T-test: t = $n = \frac{\overline{\overline{x_1} - \overline{x_2}}}{\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$

With

$$S^2 = \frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}$$

Where:

$\overline{x_1}$ = Men an score of experimental group

$\overline{x_2}$ = Mean score of control group

s_1^s =Standard deviation of experimental group

s_2^2 = Standard deviation of control group

n_1 = Number of subject in experimental group

n_2 = Number of the subject in control group

The T table was employed to see whether there was a significant difference between the mean score of both experimental and control group. The value of obtained was consulted with the value of t table at the degree of freedom (n1-1) + (n2-n2) and the level of confidence of 95%= 0, 05. If the value of obtained was less than the value of t table, the null hypotheses were accepted. On the contrary, if the value of t- obtained is equal or bigger than the value of t table, the alternative one was not accepted.