

### **III. RESEARCH METHOD**

#### **3.1 Research Design**

This research is quantitative research. It will be carried out in order to see and to find the result of the application of Jigsaw through Discussion text for increasing students' speaking ability. The one group pretest-posttest design can be represented as follows:

T1   X   T2

T1   : Pre Test

X   : Treatments

T2   : Post Test

(Hatch and Farhady, 1982:20)

In conducting the oral tests, the research will use inter rater reliability.

#### **3.2 Population and Sample**

The research was conducted at SMAN 9 Bandar Lampung. SMAN 9 Bandar Lampung has nine classes as the sample which was chosen by Purposive Sampling. The researcher used Purposive Sampling because the researcher selected people based on the particular purpose of the experiment. The class chosen was XII IPA 5, consisting of 32 students. The researcher chooses XII IPA 5 as sample because the class was attractive and most of the students have the

much diversity in speaking ability. This research was conducted in 3 weeks, which lasts 80 minutes for each meeting.

### **3.3 Data Collecting Technique**

In collecting the data, the researcher used:

#### **a. Pretest**

The research conducted a pretest which was taken 80 minutes. The purpose of this test was to know how far the students' ability in mastering speaking skill. In administering the pretest, the writer provided a topic to the students and let them created some arguments based on the topic provided and based on their own knowledge. The test was administered in each group and it was taken 5 minutes for each group to tell their arguments in cassette and the topic is "smoking in public place should be forbidden. The students' record result of the pretest was scored by 2 raters, the research herself and the English teacher of SMAN 9 Bandar Lampung in order to have reliable test result.

#### **b. Treatments**

The treatments were conducted in six times. One treatment was 2x45 minutes of each meeting. The research presented the topics of discussion. The topic was based in second semester of the third year students. The topic was discussion text, there were:

- National Exam in Pros and Cons
- Advantages and disadvantages of homeschooling
- The Pros and Cons of School Uniform
- The Advantage and Disadvantage of Nuclear Power

### c. Posttest

The researcher administered the post test which was taken 80 minutes. The purpose of this test was to know the students' increase in speaking after the research gave the treatment by jigsaw through discussion text. The technique of giving post test was the same materials the pretest because the researcher wanted to know how far the students can develop their arguments used their own knowledge and their improvement after being given the pretest.

## **3.4 Research Procedure**

The procedure of the research as followed:

### 1. Selecting Speaking Materials

In selecting the speaking material the researcher used the syllabus of the third years of Senior High School based on school curriculum or KTSP (an English Operational Curriculum which is arranged and applied by each education unit). The topic chosen told about Health.

### 2. Determining the Instruments of the Research

The instrument in this research is speaking test. The writer conducted the speaking test for the pretest and posttest, these tests aimed at gaining the data that is the students' speaking ability score before the treatment and after the treatment in performing discussion. In achieving the reliability test, inter rater reliability has been used in this study. The first rater was the researcher and the second rater was the English teacher. Both of them discussed and shared ideas of the speaking criteria in order to obtain the reliable result of the test.

Construct validity, in this research the writer focused on speaking ability in jigsaw. The topic chosen were told about “smoking in public place should be forbidden”. Those topics were the representative of speaking materials of School Based Curriculum or KTSP.

### 3. Determining the Populating and Sample

The population of this research was the third grade or grade XII of SMAN 9 Bandar Lampung. There are nine classes and one class was taken as sample. The sample was selected using sample probably sampling through lottery. The class chosen was science class consisting of 32 students.

### 4. Conducting Pretest

Pretest was given before the writer applied the treatment to measure increase of students’ speaking ability before being taught discussion through jigsaw. The test was speaking test in the form of discussion. The material that was attached in appendices was about performance about discussion text. The researcher showed the picture about “smoking in public place should be forbidden” and told the students to present the result of their discussion. Those materials were tested related to School Based Curriculum or KTSP which are suitable for their level. Pretest was given to know how far the competence of the students in speaking skill before the treatment. The test was hold 80 minutes.

In selecting the speaking material the researcher used the syllabus of the third year of Senior High School based on School Based Curriculum or KTSP. The topic was chosen told about “smoking in public place should be forbidden.”

### 5. Conducting Treatment

After giving pretest to students, the researcher gave treatments using jigsaw. Each treatment was hold for 80 minutes. In selecting the material the researcher used the syllabus of the third year of Senior High School students Based on Curriculum or KTSP. In this researcher used five treatments.

The topic chosen told about health (“smoking in public place should be forbidden”)

### 6. Conducting the Posttest

Posttest was conducted to measure the increase of students’ speaking ability after being through discussion texts. The posttest was held for 80 minutes. In selecting the material the researcher used the syllabus of the third year of Senior High School students based on KTSP. The researcher administered posttest after the treatment. It aimed to see the development of students’ speaking ability after they used discussion text in jigsaw technique in speaking class. The form of the test was subjective test. The posttest was similar to the pretest by asking the students to perform discussion in front of the class with their group with the similar topic to the pretest. The researcher asked the students to make some arguments related to the topic, after that the students shared their arguments by using jigsaw through discussion text in front of the class.

### 7. Analyzing the Data

After collecting the data, the data were analyzed by referring to the rating scale namely speaking ability and then interpretation of the data was done.

Firstly, scoring the pretest – posttest, and then tabulating the result of the test and calculating the mean of the pretest and the posttest. Repeated Measure t – test was used to draw the conclusion. The comparison of the two means counted using Repeated Measure t – test tell us the significance increase of students’ speaking ability. The data were computed through SPSS version 16. The hypothesis was analyzed at the significance level of 0.05 in which the hypothesis is approved if  $\text{sig} < \alpha$

### **3.5 Criteria for Evaluating Students’ Speaking**

The form of the test is subjective test since there is no exact answer. In this test the researchers used inter – rater to assess students’ performance. The performance were given score and recorded together by the researcher and the English teacher. The rater gave the score by record the students’ performance. The researcher recorded the students’ utterances because it helped the raters to evaluate more objectively. The test of speaking was measured based on two principles, reliability and validity.

#### **Reliability**

Reliability refers to extend to which test is consistent in its score and gives us an indication of how accurate the score test are. The concept of reliability stems from the ideas that no measurement is perfect even if we go to the same scale there will always be differences.

The statistical formula for counting the reliability is as follow:

$$R = 1 - \left( \frac{6(\sum d^2)}{N(N^2 - 1)} \right)$$

R = Reliability

N = Number of Students

D = the different of rank correlation

1-6 = Constant number

After finding the coefficient between raters, researcher then analyzed the coefficient of reliability with the standard of reliability below:

- a. A very low reliability (range from 0.00 to 0.19)
- b. A low reliability (range from 0.20 to 0.39)
- c. An average reliability (range from 0.40 to 0.59)
- d. A high reliability (range from 0.60 to 0.79)
- e. A very high reliability (range from 0.80 to 0.100)

Slameto (1998:147)

After calculating the data, the result of the reliability can be seen in following tables:

Table 3.1 Raters Reliability

Reliability	Pretest	Posttest	Criteria
	0.86	0.99	Very high reliability

From the criteria of the reliability and the calculating above, it can be concluded that the reliability of the rater is very high. It means that the first rater's way of scoring was similar to the researcher's. They had almost the same scoring system.

### **Validity**

Validity refers to the extent to which the test measures what was intended to measure. This means that it relates directly to the purpose of the test. Content

validity, the test is a good reflection of what has been taught and the knowledge which the teacher wants his students to know. Content validity can best be examined by the table of specification (Shoamy, 1957:74). Construct validity concerns with whether the test is actually in line with the theory of what it means to the language (Shoamy, 1985:74) that is being measured, it would be examined whether the test actually reflect what it means to know a language. It means that the test will measure certain aspect based on the indicator.

### **3.6 Speaking Test**

The researcher conducted speaking test, which lasted 80 minutes. In conducting the tests the researcher provided a topic. Each group has to make some issue, arguments for, arguments against, and conclusion about the main generic structure of discussion text that has related to the picture. The test was done orally and directly, the teacher divided 32 students into eight groups, so there would be four students in every group. The teacher divided the groups based on their score in pretest. In addition, the students are organized into a heterogeneity level of speaking ability based on the score in pretest. The teacher called the group one by one in front of the class to perform their arguments. The researcher asked the students to speak clearly since the students' performance is being recorded during the test. The material for test was taken from the pictures' given and their handbook. The form of the test was subjective test there is no exact answer. The teacher gave the score of the students' speaking ability based on the oral rating sheet provide. The teacher assessed the students concern on five aspect namely pronunciation, vocabulary, fluency, comprehension, and grammar. In the test the researcher used the inter rater, that were the researcher and the English teacher.



In evaluating the students' speaking scores, the researcher and another rater, which is the class teacher, listened to the students' record and used the oral English. The researcher recorded the students' utterance because it helps the raters to evaluate more objectively. Rating sheet modified from Harris (1974:84). Based on the oral rating sheet, there are five aspects to be tested namely, pronunciation, vocabulary, fluency, comprehension and, grammar. Here are the rating scales.

### **Pronunciation**

5. Has few traces of foreign accent
4. Always intelligible though one is conscious of a definite accent.
3. Pronunciation problems necessitate concentrated listening and occasionally lead to misunderstanding
2. Very hard to understand because of pronunciation problems must frequently be asked to repeat.
1. Pronunciation problems too severe as to make speech virtually unintelligible.

### **Grammar**

5. Make few (if any) noticeable errors of grammar or word order.
4. Occasionally makes grammatical and / or word order which do not, however, obscure meaning.
3. Make frequent errors of grammar and word order errors, obscure meaning.
2. Grammar and word orders make comprehension difficult must often rephrase sentences and / or restrict him to basic pattern.
1. Errors in grammar and word order too severe as to make speech virtually unintelligible.

### **Vocabulary**

5. Use of vocabulary and idioms is virtually that of native speaker.

4. Sometimes uses inappropriate terms and / or must rephrase ideas because of lexical inadequacies.
3. Frequently uses the wrong words, conversation somewhat limited because of inadequate vocabulary.
2. Misuses of words and very limited vocabulary make comprehension quite difficult.
1. Vocabulary limitation to extreme as to make comprehension virtually impossible.

### **Fluency**

5. Speed as fluent and effortless as that of native speaker problems
4. Speed of speech seems to be slightly affected by language problems
3. Speed and fluency are rather strongly affected by language problems.
2. Usually hesitant, often forced into silence by language problems.
1. Speech is as halting and fragmentary as to make conversation virtually impossible.

### **Comprehension**

5. Appears to understand everything without difficulty.
4. Understand nearly everything at normal speed although occasionally repetition maybe necessary
3. Understand most of what is said at lowers that normal speed with repetition.
2. Has great difficulty following what is said. The students can comprehend only ‘social conversation’ spoken with frequent repetition.
1. Can not be said to understand even simple conversation of English.

The score of each point was multiplied by four, so the highest score is 100.

Here is identification of the scores.

If the students get 5, so  $5 \times 4 = 20$

4, so  $4 \times 4 = 16$

$$3, \text{ so } 3 \times 4 = 12$$

$$2, \text{ so } 2 \times 4 = 8$$

$$1, \text{ so } 1 \times 4 = 4$$

For example:

A student get 4 in pronunciation, 3 in vocabulary, 3 in fluency, 4 in comprehension, and 3 in grammar. Therefore, the student's total score will be:

$$\text{Pronunciation} \quad 4 \times 4 = 16$$

$$\text{Vocabulary} \quad 3 \times 4 = 12$$

$$\text{Fluency} \quad 3 \times 4 = 12$$

$$\text{Comprehension} \quad 4 \times 4 = 16$$

$$\text{Grammar} \quad 3 \times 4 = 12$$

$$\text{Total} \quad 68$$

It means he gets 68 for speaking

The score of speaking is based on the five components can be compared in the percentage.

### 3.7 Data Analysis

In order to find out the increasing of students' speaking ability after being taught by using jigsaw through discussion text, the researcher examined the students' score using the following step. The first was scoring the pretest and posttest. The second was tabulating the score of the students' speaking result using rating scale.

The data of score of pretest (T1) and posttest (T2) can be seen on the table below:

Students'	Aspect of Speaking	TOTAL
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name	Pronunciation		Vocabulary		Fluency		Comprehension		Grammar			
	R1	R2	R1	R2	R1	R2	R1	R2	R1	R2	R1	R2
A												
B												
∑N=												

The table of score inter – rater reliability of pretest and posttest

No	Students' code	Rater 1		Rater 2	
		Pre – Test	Post – Test	Pre – Test	Post – Test
1	A				
2	B				
3	C				
3	D				

The third was drawing conclusion from the tabulation of result of the pre test and post test administered statistically analyzed the data using the statistical computation i.e. repeated measure T – Test of SPSS version 16.

### 3.8 Hypothesis Testing

After getting the mean of pretest and the posttest, the research analyzed the data by using Repeated Measure T – Test in order to know the significance of the treatment effect.

Hypothesis of this research:

1. Is there any significance increase of students' speaking ability score from pretest to posttest by using jigsaw?

The hypothesis was statistically analyzed using Repeated measure T – Test that was to draw the conclusion at the level of 0.05 ( $p < 0.05$ ).