

### III. RESEARCH METHODOLOGY

This research is intended to find out whether paragraph puzzle can be used to increase students' narrative text in writing ability or not. This chapter includes the research design, the population and sample, data collecting technique, validity and reliability, scoring criteria, and research procedure.

#### 3.1. The Research Design

In doing this research, the researcher conducts quantitative research based on experimental method. The researcher uses control group pre test-post test design. The researcher uses two classes as the sample of the research, they are: the experimental class (G1) and control class (G2). The research design can be represented as follows:

**G1    T1 X T2**

**G2    T1 O T2**

Note:

G1    means the experimental class

G2    means the control class

T1 means pre test  
X means treatment  
O means treatment  
T2 means post test

(Hatch and Farhady, 1988; 22)

The research was conducted in 5 (five) meetings in each class. The first meeting was used for a pre test. The pre test had done to find out the students' basic ability in writing a narrative text. Next, treatments had done to guide student to make a paragraph by using puzzle.

In the control class, the researcher did not give any special treatment because the students were hoped to use technique used by their English teacher there. The last, post test had done to find out their development in writing a narrative text. And also to make sure that paragraph puzzle can be used to develop their writings. Each meeting took 2 (two) lesson hours (2X45 minutes).

The criteria whether there is a progress on the students' writing achievement was determined by the differences between the results of pre test and post test in each class. If there is a progress from the pre test to the post test, it means that paragraph puzzle can increase narrative paragraph writing. On the other hand, if there is no progress from pre-test to post-test, it means that paragraph puzzle can not be used to increase their narrative paragraph writing and the teacher needs to evaluate the implementation of paragraph puzzle on the students paragraph writing.

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

The research conducted at first year students of SMP Tunas Harapan Bandar Lampung. There are 2 classes and each class consists of 35-40 students. In this research, all of the classes were the sample of the research. It means the researcher used two classes for this research.

### **3.3. Data Collecting Technique**

The data were collected using pre test and post test, clarified as follows;

#### **1. Pre test**

The pre test was administered in order to find out the students' basic ability. It required 90 minutes for the test. In this test, the teacher provided some topics to be chosen by the students to write. The topics in this test were describing an event in chronological order. The students were asked to write a narrative paragraph based on the topics provided.

#### **2. Post test**

The post test was administered after treatments. In this test, the teacher also provided some topics to be chosen by students. The students had to choose the same topic as the topic as the topic that they had chosen in the pre test but with different case and write a narrative paragraph by making paragraph puzzle first and then apply the sentences into their paragraph writing. It took 90 minutes for this test.

### **3.4 Research Procedures**

The procedure of this research could be seen as follows:

#### **1. Determining the population and samples**

In this stage, the researcher chose SMP Tunas Harapan Bandar Lampung as the population and sample of this research. There are 2 (two) classes in the second year level. They are: VIII A and VIII B. the researcher took all of classes as the samples of the research. The classes were determined from the students' scores on their previous class. Each class consists of about 35-40 students but only 30 students followed the tests and the treatments completely.

2. Finding and selecting materials that were going to be taught and tested

In this stage, the researcher found some topics for the pre test. The topics were taken from the students' handbook and based on the teaching and learning syllabus.

3. Administering pre test to the students and getting the result

In this stage, the researcher gave some topics that had been prepared in the previous stage and asked the students to choose one of the topics to be written by them in their paragraph writing. The time was 90 minutes for this test. The researcher analyzed the results and recorded the results. This test was done in both of the classes with the same test item.

4. Giving treatments by teaching paragraph puzzle

Here, the researcher introduced paragraph puzzle to the students in the experimental class. The researcher explained clearly about paragraph puzzle and asked the students to practice paragraph puzzle on the topic given. Then, the students were asked to arrange paragraph which had been puzzled. In the control class, the researcher used the technique used by the English teacher there.

5. Administering the post test

After giving treatments to the students, the researcher gave same topics again to the students. Then, they were asked to choose the same topic as the chose in pre test but with different case and next, they were asked to arrange a narrative paragraph. Then the researcher asked

them to rewrite the paragraph. It required 90 minutes for this test. The researcher analyzed the result and recorded them. It was also done in the two classes to find out the increasing of their writing.

#### 6. Analyzing the data

The researcher analyzed the result of pre test and post test of the experimental and control classes by combining the scores from the two raters, the scores from her first rater and scores from the researcher herself to get reliable scores or data. To see whether there is a progress on the students' narrative paragraph writing after being taught by using paragraph puzzle, the researcher analyzed the improvement by comparing the scores of pre test and post test from the two classes. If the score of post test is better than pre test, it means that there is a progress on the students' achievement. Then the researcher tried to compare which class has greater development in writing a narrative paragraph.

#### 7. Making a report

After analyzing the result of the tests, the researcher reported the increasing of the students' narrative paragraph writing achievement after being taught by using paragraph puzzle. If the result of post test is higher than pre test, it means that paragraph puzzle is a good way to increase students' narrative paragraph writing.

### **3.5 Instrument of the research**

In getting the data, the research applied only one instrument. The instruments can specifically describe like the following:

Writing test

The test was given to students is writing test. According to Harris (1969: 69), writing test is one of testing devices that requires the students to compose their own and extended responses to problem set by the teacher. Writing test measures certain writing ability more effective than objective test.

Therefore, the researcher used writing test to get data. The students had to arrange and rewrite a narrative text which consists of 10-15 simple sentences. The topic was provided by the teacher. The time was given for students to do the test is about 2 x 45 minutes.

### **3.6 Scoring Criteria**

After collecting the data, the researcher analyzed them. The research analyzed it from five aspects, according Harris (1979: 68-69), they are: content, organization, vocabulary, grammar and mechanic. Paragraph puzzle which is used in this research already has correct grammar and appropriate vocabularies in each sentence. But it is still incorrect order. That is why the researcher only focuses on three aspects, namely; content, organization and mechanic. The computation as follows:

- 1. Content : 40%
- 2. Organization : 30%
- 3. Mechanics : 30%

The criteria of scoring:

The criteria of scoring in this research will be divided into five categories in every component:

Excellent, Good, Fair, Poor and Very Poor. For content, it can be said Excellent is students get 33-40 scores if there are all the developing sentences support the main idea. The criteria of Good (19-24) will be given if there are three of the developing sentences support the main idea.

Students will get Fair (13-18) of their writing if there are two the developing sentences support main ideas. If there is only one the developing sentence support main idea in their writing, the students will get Poor ((7-12). Students will get Very Poor if there is no developing sentence support main idea.

Next component is Organization. Students will get Excellent (33-40) if there are at least two right uses of transitional words and all the supporting sentences are written in spatial order. The criteria of Good (25-31) will be given if there is at least one right uses of transitional word and all sentences are written in spatial order. Students will get Fair (17-24) of their writing if there are two supporting sentences are written in spatial order. Poor (9-16) will be given if there is one of supporting sentence are written in spatial order. Student will get Very Poor (0-8) of their writing if there is no supporting sentence in spatial order.

The last component is Mechanics. Students will get Excellent (25-30) if all the sentences are using correct convention. The criteria of Good (19-24) will be given if three sentences are using correct convention. Students will get Fair (13-18) if half of sentences are using correct

convention. Students will get very poor (1-6) of their writing if there is no sentence using correct convention.

In short, the criteria of scoring system are drawn as follows:

a. Organization:	
33 – 40	Excellent, there are at least two right uses of transitional words and all the supporting sentences are written in spatial order.
25 – 31	Good, there is at least one right use of transitional word and all supporting sentences are written in spatial order.
17 - 24	Fair, two of all supporting sentences are written in spatial order.
9 - 16	Poor, one of all supporting sentences is written in spatial order.
0 - 8	Very poor, there is no supporting sentence is written in spatial
b. Content:	
25 – 30	Excellent, all the developing sentences support the main idea.
19 – 24	Good, three of the developing sentences support the main idea.
13 – 18	Fair, two of the developing sentences support main idea.
7 - 12	Poor, one of the developing sentences support the main idea.
1 - 6	Very poor, there is no developing sentences support the main idea.
c. Mechanic:	
25 – 30	Excellent, all the sentences are using correct convention (punctuation, spelling and capitalization).
9 – 24	Good, three fourth of the sentences are using correct convention.
13 – 18	Fair, half of the sentences are using correct convention.
7 – 12	Poor, a quarter of the sentences are using correct convention.
1 – 6	Very poor, there is no sentence using correct convention.



### **3.7 Validity and Reliability of the Tests**

#### **1. Validity of the Test**

To measure whether the test has a good validity, in this research, the tests are based on the construct and content validity. Content validity is concerned with whether the test was sufficiently representative and comprehensive for the test. In the test, students arrange a narrative text of fable, consists of 10 – 15 sentences. The test is composed based on indicators and the objective in the syllabus of KTSP 2006. It means the test is valid because the test was made by considering indicators and the objective in the syllabus of KTSP 2006. The materials were adopted from students' handbook for the second year students of SMP.

Construct validity is the process of determining the extent to which test performance can be interpreted in terms of one or more constructs. In this research, the writer administered a writing test and the technique and gave scores of the students' writing based on the three aspects of writing; organization, content, mechanic.

#### **2. Reliability of the Test**

In ensuring the pre test and post test scores, the writer uses inter rater reliability taking two other scores besides the scores from the writer her self and intra rater reliability-completing the same assessment with the same rater on two or more occasions. Therefore, there are same three scores from each student, but the researcher takes only two closest scores.

Scores 1 O + C + M =

Scores 2 O + C + M =

The researcher also uses standard of reliability (arikunto, 1988: 260), the criteria of the reliability are as follows:

0.8 – 1.0 = very high

0.6-0.8 = high

0.4-0.6 = medium

0.2-0.4 = low

0-0.2 = very low

After calculating the result of the students' narrative text writing, the researcher calculates the data by using correlation coefficient Spearman ( see appendices 12 and 13 ). The result of the reliability can be seen in following tables:

**Table 3.1 The Reliability of Inter-rater in Experimental Class**

	<b>Pre test</b>	<b>Post test</b>	<b>Criteria</b>
<b>Reliability</b>	0.88	0.89	Very high reliability

**Table 3.2 The Reliability of Inter-rater in Control Class**

	<b>Pre test</b>	<b>Post test</b>	<b>criteria</b>
<b>Reliability</b>	0.92	0.98	Very high reliability

**Table 3.3 The Reliability of Intra-rater**

Reliability	Pre Test Post Test	Criteria
	0.73	High reliability

From the criteria above, it can be concluded that the reliability of the raters in experimental class and control class are high. It means that the second rater's way of scoring was similar to the researcher (the first rater). They have same scoring system so that there is no subjectively in scoring the students writing.

### 3.8 The Data Analysis

The researcher computes the students' score in order to find out the students' achievement in writing narrative text by using guided writing:

1. Scoring the pretest and posttest and tabulate the result.
2. Finding the mean of pretest and posttest, as follows:

$$M = \frac{\sum d}{N}$$

- M : mean  
 $\sum d$  : total score of students  
N : number of students

3. Drawing conclusion from tabulated results of the tests given by comparing the means of pretest and posttest.

### 3.9 Treatment of the Data

In treating the data, the writer used the following procedures:

#### 1. Random Test

The statistical formula of random test was used to determine whether the data of students' writing in the experimental class and the control class was taken from the population at random.

#### 2. Normality Test

The normality test was used to measure whether the data in the experimental class and the control class is normally distributed or not. In this case the writer used the Liliefors Formula to test the normality of the data. The data are normally distributed if  $L\text{-ratio} < L\text{-table}$ .

#### 3. Homogeneity Test

The homogeneity test was used to know whether the data in the experimental class and the control class are homogenous or not. In this research, the writer used F-test to know the homogeneity of the test. Both of the classes are homogeneous if  $F\text{-ratio} < F\text{-table}$ .

### **3.10 Hypothesis Test**

To know the gain, the researcher compared pre test and post test. The data were analyzed by using independent *t-test* in order to know the significance of treatment effect. The formula of *t-test* analysis is:

The criteria are:

With  $t$ -table (0.05) 1.684

$H_0$  is accepted if the  $t$ -ratio is lower than  $t$ -table, or ( $t$ -table  $<$   $t$ -table)

$H_1$  is accepted if the  $t$ -ratio is higher than  $t$ -table, or ( $t$ -table  $>$   $t$ -table)