

III. RESEARCH METHOD

This chapter deals with research design, population and samples, research instrument, the data collection techniques, the procedure of collecting data, and try out of the test (validity, level of difficulty, discriminating power, scoring system, research procedure, data analysis, and hypothesis testing).

3.1. Design

This research is a quantitative research with two group pre-test and post-test design. There were two groups of students in this research; the experimental class 1 in which the teacher used video and experimental class 2 by using audio tape. The researcher used video in experimental class 1 because the researcher assumed that video is better media for students in increasing their listening comprehension than audio tape. The students were given some tests for both classes with the same material but different media in order to find the difference achievement between students who taught through audio recorded and video. The research design can be presented as follows:

G₁ T₁ X T₂

G₂ T₁ X T₂

Notes:

G₁ : Experimental class 1 (Video)

G₂ : Experimental class 2 (Audio)

T₁ : Pre-test

T₂: Post-test

X : Treatment

(Hatch and Farhady, 1982;20)

3.2. Source of Data

1. Population

According to Gay (1987:102), population is the group of interest to research or to which she/he would like the result of the study to be generalize able. The population of this research will be conducted in SMP Negeri 26 Bandar Lampung at the first grade students. The sample is 2 classes as experimental class 1 and experimental class 2 which are selected by random sampling. It is applied based on the consideration that every student in the population had the same chance to be chosen and in order to avoid the subjectivity of the research.

2. Samples

Since the amount of the population is quite large, the writer uses random sampling because the students are formed into several classes. It is applied based on the

consideration that every student in the population had the same chance to be chosen and in order to avoid the subjectivity of the research. All the members of the selected groups have similar characteristics.

3.3. Data Collecting Technique

The data of study are the scores of the students' listening comprehension that can be obtained by giving a pre-test that is conducted before the instruction (method) used. Post-test will be given after the teaching and learning process within three meetings. The test is aimed to measure how is the students' development in teaching listening process and the students' comprehension to the material given. The question given in the pre-test is the same as the material given in the post-test.

1. Pre-test

The writer administered the pre-test which take approximately 90 minutes. The purpose of the test is to know the preliminary ability in listening comprehension. In administering the pre-test, the writer will provide a multiple choice test in which the items derived from the selection of try out test of listening comprehension.

2. Post-test

The writer administered the post test spending 90 minutes. The purpose of this test is to know the students' improvement in listening comprehension after the writer implementing the video. The technique of giving post-test is similar to the pre-test because the writer wants to know the students improvement after three treatments.

3.4. Procedure in Collecting the Data

There are some procedures that were applied for taking the data in this research:

1. Determining the population and sample of the research

The researcher determined the population and sample of the research by choosing two classes at the first year students in SMP Negeri 26 Bandar Lampung. The researcher randomly chose two classes as experimental class 1 and experimental class 2.

2. Administering listening test (try out) to know the quality of the test

Administering try out test was for the researcher to find out the quality of the test in order to take the data. The try out test administered for the try out class to measure the reliability of pre-test and post-test. The tests administered for 30 items multiple choices in 90 minutes. The result of the try out test was used to know the level of difficulty and the determination power, along with the validity and the reliability of the test.

3. Preparing the materials which will be taught

The researcher took the material for listening comprehension based on YouTube video (Fairy Tales Story Collection retrieved on 31 January 2014 from <http://www.appuseries.com/fairytales.php>). The topics of the lesson were about Fairy Tales series entitled; Little Red Riding Hood, Cinderella, Jack and the Bean Stalk, The Beauty and The Beast, Three Little Pigs and The Dog and The Bone. The audio tape is played in the speaker and video is in a form of FLV (flash

video) spoken by native speaker in material of narrative text because this kind of text should be mastered by students in this level.

4. Administering the pre-test

The pre-test was conducted to determine the students' ability in listening comprehension before they are given the treatment. The items in the pre-test were determined by the selection of the items of try out test with 40 item multiple choices which consist of four optional answer, e.g, a, b, c, and d. The time allocation for the pre-test was 90 minutes.

5. Giving the treatment

The treatments were audio tape and video in listening comprehension. The treatments were conducted in pre-activities or post-activities of teaching learning process. The material in the treatment Phase can be seen on the table 3.5 below:

Table 3.5. Material in Treatment Phase

No.	Meeting	Teaching Treatment Video	Teaching Treatment Audio
1.	1	Little Red Riding Hood	The Beauty and The Beast
2.	2	The Frog Prince	The Three Little Pigs
3.	3	Jack and the Bean Stalk	The Dog and The Bone

There are procedures of teaching listening through video and audio tape, the activities are:

1. Dividing the students into several groups which each group consist of at least 5 persons.

2. Giving the direction to the students about what they are going to do.
3. Ordering all students to listen to audio and watch the short video about narrative text.
4. Playing the audio or video and orders students to make prediction of the story.
5. Replaying the audio or video and asking students to make note concerning the specific information based on the story.
6. Giving the worksheet to each group
7. Asking students to discuss their work about information in the audio or video for example the characters, the setting, the plot of the story, etc.
8. Asking and checking group to group activity.

6. Administering the post-test

The items that used for post-test is similar to the test items of pre-test with the same level of difficulties. The time allocation was 90 minutes. Post test was administrated in order to measure the improvement of students' listening comprehension achievement. The result of post-test was the final data for this research.

7. Analyzing the data (pre-test and post-test)

Both pre-test and post-test results were using Independent Samples T-test of SPSS (Statistical Package for Social Science) version 16.0 for windows to find out whether there is any significant difference of students' listening comprehension after being taught by audio recorded and video.

8. Concluding the result

After collecting all the data, the result of this research will be explained in chapter four of result and discussion based on analyzing the results of pre-test and post-test.

3.5. Instrument

Try out of the test was conducted to measure whether the instrument of the research is good to be administrated so that it can obtain a valid data.

1. Validity

Validity is the extent to which the test measures what it is supposed to be measured and nothing else (Heaton, 1991:159). There are four types of validity: construct validity, face validity, construct validity, and empirical validity. In order to measure the test has good quality or not, the researcher used content and construct validity.

1. Content Validity

Content validity is the extent to which the test measures a representative sample of the subject matter content. The focus of the content validity is adequacy of the sample and not simply on the appearance of the test (Hatch and Farhady, 1982:251).

2. Construct Validity

Construct validity is concerned with whether the test is actually in line with the theory of what it means to know the language (Shohamy, 1985:74). The types of validity assume the existence of certain learning

theories or construct underlying the acquisition of ability and skills (Heaton, 1991:161).

There are many types of instruments that can be used to collect the data; questionnaire, test, multiple choices. In this research, the researcher used multiple choices.

Table 3.5. Table of Specification of Listening Comprehension Test

No.	Objectives	Descriptions	Total Items	Percentage
1.	Identifying the main idea	-What is the main idea of the story? -What does the story tell about?	4	10%
2.	Identifying specific information	-Who are involve in the story? -How is the character of fairy godmother?	20	50%
3.	Reference	- <u>Her</u> mother had died when she was a child. The underlined word “her” in the sentence refers to..	3	7.5%
4.	Inference	-What is the moral value of the story? -What is the conclusion of the story?	7	17.5%
5.	Vocabulary	-There were sweet <u>little</u> girl named Ella. The word “little” has the opposite meaning to..	6	15%
	Total		40	100%

2. Reliability

Reliability refers to whether the test is consistent in its score and gives us an indication of how accurate the test score are (Shohamy, 1985:70). In this research, researcher used Split-Half Method or Odd-Even Method. The formula is:

$$r_1 = \frac{\sum XY}{\sqrt{\sum X^2 \sum Y^2}}$$

Note:

r_1 : coefficient or reliability between first and second half group

X : Total numbers of first half group

Y : Total numbers of second half group

X^2 : square of X

Y^2 : square of Y

(Lado (1961) in Hughes, 1991: 3)

The researcher used “Spearman Brown’s Prophecy formula” (Hatch and Farhady, 1982 :262) to know the coefficient correlation of the whole items.

The formula is as follow:

$$rk = \frac{2rl}{1 + rl}$$

Where :

rk : the reliability of the test

rl : the reliability of the half test

The criteria of reliability are:

0.90 – 1.00 : high

0.50 – 0.89 : moderate

0.0 - 0.49 : low

3. Level of difficulty

To see the level of difficulty, the researcher used following formula:

$$LD = \frac{R}{N}$$

Where:

LD : Level of difficulty

R : the number of the students who answer correctly

N : the total number of the students following the test

The criteria tests are:

<0.30 : difficult

0.30 – 0.70 : average

>0.70 : easy

(Shohamy, 1985: 79)

4. Discrimination Power

To see the discrimination power, the researcher used the following formula:

$$DP = \frac{U - L}{\frac{1}{2} N}$$

Where :

DP : discrimination power

U : the proportion of the upper group students

L : the proportion of the lower group students

N : total number of the students

The criteria are:

- 1 If the value is positive discrimination, it means that more high level students than low-level students get the correct. If the value is zero, it means that no discrimination.

- 2 If the value is negative, means that more low level students than the high level students get the item correct.
- 3 In general, the higher the discrimination index, the better. In the classroom situation most items should be higher than 0.20 indexes (Shohamy, 1985:81).

5. Scoring System

In scoring the students' result of the test, the researcher used Arikunto formula. The ideal high score is 100. The score of the pre-test was calculated by using formula as follow:

$$S = \frac{R}{N} 100$$

Where :

- S : The score of the test
 R : The total of the correct answer
 N : The total items

(Arikunto, 1997:212)

3.6. Data Analysis

The researcher analyzed the data statistically using Statiscal Program for Social Science (SPSS). The step of the researcher analyzed the data:

1. Administering the normality of the distribution test

Normality test was used to know whether the data of both classes are normally distributed or not. In testing the data, the researcher used T-test. The criteria of the test are as follows:

H_0 = The distribution of the data is normal

H_1 = The distribution of the data is not normal

In this research, the criteria of hypothesis are:

H_0 is accepted if $\text{sign} > \alpha$. In this case, the researcher uses the level of significance $\alpha = 0.05$.

2. Testing the Homogeneity of Variance

This test was used to determinate whether the data fulfill the criteria of the quality of variance. The test used T-Test to analyze the data. The hypothesis for the homogeneity of variance is as follows:

H_0 = There is significant difference in the level of ability (equal)

H_1 = There is no significant difference in the level of ability (not equal)

3. Random Test

Random test was used to ensure whether the data is random or not. As stated by Setiyadi (2006:168-169), one of the assumption should be fulfilled in using T-Test was the data should be taken from the random sample in population. The criteria are:

H_0 = The data is random

H_1 = The data is not random

In this research, H_0 is accepted if $\text{sign} > \alpha$, and the researcher used the level of significance 0.005.

3.7. Hypothesis Testing

The hypothesis testing was used to prove whether the hypothesis propose in this research is accepted or not. The hypothesis analysis is using Independent T-Test through computing with Statistical Program for Social Science (SPSS). The hypothesis is formulated as follow:

H₀ : There is no significant difference of students' listening comprehension after being taught through video and of those taught through audio tape.

H₁ : There is significant difference of students' listening comprehension after being taught through video and of those taught through audio tape.

Those are the content and discussion of chapter 3 in the research. The further explanation of the research will be discussed in the next chapter.