# III. RESEARCH METHOD

This chapter explains the design of the research, population and sample, variables, data collecting technique, procedure of the research, research instrument, criteria of a good test, data analysis, hypothesis testing.

3.1. Research Design

The researcher conducted this research by using *One Group Pretest-Posttest Design.* The researcher intends to find out the significant increase of students' listening comprehension achievement before and after using video as teaching media. In this research, the researcher chooses one class as an experimental class. Probability sampling is applied to select the experimental class. Based on the design, the students are given a pretest to measure students' listening ability before the researcher gives treatments and post-test. Thus, the formula of the research design is showed as below:

| T1 X T2 |
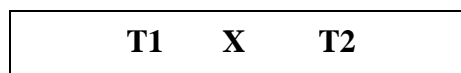
T1 = Pre-test

X = Treatment (using video as teaching media)

T2 = Post-test

(Setiyadi, 2006: 133)

3.2. Population and Sample

The population of this research is the second grade students of SMAN 1 Pringsewu. There are six classes in the second grade of SMAN 1 Pringsewu. The researcher takes one class in this research, that class is 4 D IPA. The sample class is selected by using random sampling technique through lottery. That class is consisting of around 35 students are taken as the sample of research. It is done to avoid subjectivity and to guarantee every second grade class get the same opportunity. The experimental (4 D IPA) class are given pre-test, treatment (teaching listening through video), and post-test to measure students' listening comprehension.

3.3. Variables

In quantitative research, there are two kinds of variables. They are dependent variable and independent variable. Dependent variable that is measured in experiment and what is affected during the experiment. Independent variable is the variable that control, what you can choose and manipulate. Independent variable affects dependent variable. The students' listening comprehension is the dependent variable, because it

is what the researcher measure. The independent variable is the use of video as teaching media because it affects dependent variable and it can be selected and be manipulated by the researcher.

3.4. Data Collecting Technique

Data collecting technique means the way to get the data of the research, which the researcher needs in research. The data of this research are the students' listening comprehension achievement before treatment (pre-test) and after treatment (post-test), and students' data from interview. The data are used to find the increase of student's listening comprehension. Meanwhile interview is given to the students' to find out the students' problem in listening comprehension through video. For more details, the ways of data collecting are explained below:

- **Try Out**

  Try Out is applied to measure the quality of test as the instrument of research before it is given to students. It conducts in 4 C IPA, the another class that is selected in first meeting, out of experimental class. The numbers of the items are 30 items of multiple choices. They did it in 90 minutes. The try out test uses audio tape not video as media. In order, the test is given to have a good quality and good reliability. In this step, after testing the instrument, the items are reviewed again to create the better quality of the test.

- **Pre-test**

  Pre test is the test conducted before the researcher gives treatment to the students. The purpose is to measure students' basic listening comprehension achievement. This test is conducted to the experimental class (4 D IPA). It contains 30 items of multiple choices (A, B, C, D, and E) that were revised.In this test, the researcher does not use video as the media. The researcher uses audio source in the test.

- **Post-test**

  Post-test is the test that is conducted after the treatments are given to the students. It measures students' listening comprehension achievement after being taught by using video. The post-test and pre-test are used the same test that consists of 30 items of multiple choices that were revised. But the order of the question and the distracters are changed from those in the pre-test. The post-test has same difficulty as the pre-test. The researcher uses video source.

- **Interview**

  In order to find out students' problems in listening comprehension through video, the reseacher conducts interview. Interview is given after post test to the students who get low score in listening comprehension. The reseacher asks some questions related to students' difficulties in listening comprehension.

3.5. Procedures of the Research

In constructing the research, the procedure uses these following steps:

1. **Determining the population and sample of the research**

The population of the research is the second grade students of SMAN 1 Pringsewu. The experimental class (4 D IPA) is selected randomly. The researcher uses two classes, as try-out class (4 C IPA) and experimental class (4 D IPA).

2. **Administering Try Out test to know the quality of the test**

Try Out test is multiple choices test (30 items). It is held to measure index of difficulty (FV) and discrimination index (D) to find out the reliability and validity of the test. The purpose of try out test is to revise the test and create the better quality of the test.

3. **Preparing the material**

The researcher uses video as teaching media. The materials are taken by the researcher from http://www.reuters.com/video (News report items). The format videos are flash video/FLV in form of news report. It is played by using media player that are used in the class to present the materials. There are various topics were presented.

4. **Administering the pre-test and finding the result**

Pre-test is conducted before the treatment to see the students' listening comprehension. It is conducted without using video as teaching media. The numbers of the items are 30 items of multiple choices (A, B, C, D, and E).

5. **Giving Treatment**

After pre-test, the students are given a treatment three times by the researcher. The reseacher uses video as media in teaching students' listening comprehension.

6. **Administering the post-test**

   Post-test is given after the treatment to find out the increase of students' listening comprehension after using video as media. The result of the post-test are compared with the result of pre-test. The test consists of 30 items of multiple choices. The researcher uses video source in the test.

7. **Conducting Interview**

   Interview is conducted by the reseacher is to find out students' problems. It is given to 10 students who get low score after post test.

8. **Analyzing the result**

   After pre-test, treatment, and post-test, and giving interview, the researcher analyzes the data of pre-test and post-test by using T-test. It is used to know whether the use of video increase students' listening comprehension. The data is calculated through SPSS (*Statistical Package for Social Science*).

9. **Concluding the results**

   After analyzing the result of pre-test, post-test, and interview, the conclusion is explained based on the result data.

10. **Reporting the results**

    In reporting, the data are arranged systematically based on pretest, post-test andinterview to see whether is an increase on students' listening comprehension achievement significantly or not and to find out the problem are face by students in listening comprehension through video.

3.6. Research Instrument

The instruments of the research are a listening comprehension test used for try out, pretest, post-test, and interview. The numbers of the items is 30 items of multiple choices. In first pre test, the students are given a listening comprehension test which use audio source as media. The researcher converts the video in FLV format to mp3 audio format using video converter. And in post-test the researcher uses audio visual source (video) in the test. This researcher uses interview is given to the students' to find out the students' problem in listening comprehension through video. Theinteview is focus on the students' problem in listening comprehension through video.

3.7. Criteria of a Good Test

There are some criteria should be considered to know whether the test is good or not. They are: validity (content and construct validity), reliability, level of difficulty and discrimination power.

3.7.1   Validity

The test can be said as the valid one if the test measures the object to be measured it is suitable with the criteria (Hatch, 1982; 250). There are two basic types of validity. They are construct and content validity. The researcher uses construct and contain validity to measure whether the test has a good quality or not.

Construct validity is concerned with whether the test is actually in line with the theory of what it means to know the language that is being measured. It is capable of measuring certain specific characteristics in accordance with theory of language behavior and learning. It is the existence of certain learning theories or constructs underlying the acquisition of abilities and skills.

Content Validity is concerned with whether the test is sufficiently representative and comprehensive for the test. It depends on careful analysis of the language being tested. It should contain a representative sample of the course; the relationship between the test items and the course objective always being apparent. The test relates to the materials that have been taught to the students. The items of the test are decided by the expert jugdement (English teacher or lecturer). It is done to measure the degree of agreement.

In comprehending the massage, listening and reading have the same purpose. Listening comprehends the oral messages and reading understands the written or printed messages. The aspects of listening comprehension in the instrument are determining the main idea, finding specific information, identifying reference, inference, and vocabulary. Here, the specification table of listening comprehension tests.

Table 3.1 Table specification of Listening Comprehension Try out Test

No.	Objectives	Number of Items	Items Numbers	Percentages
1	Identifying main idea	5	1,7,13,19,25	16,7%
2	Identifying specific	10	2,5,8,9,11,16,20,21,26,27	33,3%

	information			
3	Reference	5	10,15,23,24,28	16,7%
4	Inference	2	6,18	6,7%
4	Vocabulary	8	3,4,12,14,17,22,29,30	26,7%
	Total	30		100%

3.7.2 Reliability of the Test

Reliability refers to the consistency of result of the test if it is given to the same candidates on different occasion (with no language practice). To measure coefficient of reliability between even and odd group, researcher uses Pearson Product Moment formula. The formula is as follows:

$$rl = \frac{\sum xy}{\sqrt{\sum x^2 \sum y^2}}$$

rl   : Coefficient of reliability between odd and even number items

x   : Odd number

y   : Even number

x^2 : Total score of odd number items

y^2 : Total score of even number items

xy   : Total score of odd and even numbers

The criteria of reliability are:

0.80 – 1.00   = very high

0.50 – 0.79   = moderate

0.00 - 0.49   = low

(Lado: 1961 in Hughes, 1991: 32)

To know the coefficient correlation of whole items, Spearmen Brown's prophecy formula is used. The formula is as follows:

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

rk   : the reliability of the test

rl   : the reliability of the half test

<div align="right">(Hatch and Farhady: 1982: 246)</div>

The criteria of reliability are:

0.80 – 1.00   : very high

0.50 – 0.79   : moderate

0.00 – 0.49   : low

<div align="right">(Hatch and Farhady: 1982: 247)</div>

3.7.3 Index of Difficulty

Index of difficulty is related to how easy of difficult the item is from point of view of the students who takes the test. Index of difficulty is generally expressed as the fraction (percentage) of the students who answered correctly. The formula is:

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

FV　　: Index of difficulty

R　　: the number of students who answer correctly

N　　: the total number of students following the test

The criteria are:

<0.30　　　　= difficult

0.30 - 0.70　= average

>0.70　　　　= easy

3.7.4 Discrimination Power

Discrimination Power refers to the extent to which the item differentiates between high and low level students on the test. Discrimination power (D) indicates the extent to which the item discriminates between the testees, separating the more able testees from the less able. It tells us whether the students perform well overall test tended to do well or badly on each item of the test.

The formula:

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

DP　　: Discrimination Power

U　　: the proportion of upper group students

L　　: the proportion of lower group students

N　　: total number of the students

The criteria are:

0.00-0.20 = poor

0.21-0.40 = satisfactory

0.41-0.70 = good

0.71-1.00 = excellent

(Negative) = bad items (should be omitted)

3.8. Data Analysis

3.8.1. Test

The researcher analyzes the data statistically using repeated measure t-test. Because this research compares 5 aspects of listening and only takes one class for experimental class. It is used statistical test for comparison of more than two means in order to analyze how significant the improvement of the students' aspects of listening comprehension. The researcher uses these following procedures:

1. Scoring the pre-test and post-test

2. Tabulating the result of the test and calculating the mean of pre-test and post-test

3. Drawing a conclusion from the tabulated results of pre-test and post-test, then analyzing by using SPSS to test how significant the difference between the score of pre-test and post-test in each aspects of listening.

3.9. Hypothesis Testing

The researcher used hypothesis testing of this research is to prove whether the hypothesis proposed in this research was accepted or rejected. The hypothesis is "There is a significant increase of the aspects of listening after being taught through video at the second year of SMA Negeri 1 Pringsewu." The hypothesis is statistically tested using repeated measure t-test through computing with SPSS. It is used to draw the conclusion in significant level of 0.05 ($p<0.05$). It means that the probability of error in the hypothesis is only about 5%.

3.10.   Schedule of the Research

No	Day/Date	Activities
1	Monday, May 5th, 2014	Observation
2	Wednesday, May 7th, 2014	Administering try out test in 4C IPA
3	Monday, May 12th, 2014	Administering pre test in 4D IPA
4	Tuesday, May 13th, 2014	First treatment in 4D IPA
5	Thursday, May 15th, 2014	Second treatment in 4D IPA
6	Monday, May 19th, 2014	Third treatment in 4D IPA
7	Tuesday, , May 20th, 2014	Administering post test in 4D IPA
8	Thursday, May 22nd, 2014	Conducting Interview