

## CHAPTER III

### RESEARCH METHOD

There were five parts that would be discussed in this chapter. They were research design, population and sample, variable of the research, technique of collecting the data, and technique of analysing the data.

#### **3.1 Research Design**

The researcher applied quantitative research in conducting the experimental research. According to Ary (1985:26), experimental study is a scientific investigation in which investigator manipulates and controls one or more variables. Experimental method with quantitative approach has purpose to solve the problem and to prove whether the method is effective or not. In this research the researcher wanted to know whether the use of project based learning method through video vlog was more effective to teach speaking. Experimental research was used to find the answers for this research, whether it was true that the use of Project Based Learning through Video Vlog in tenth grade students of Senior High School can improve the students' speaking skill.

The experimental research involved two groups, they were an experimental group and a control group. This study used Pre-test Post-test Control Group Design. Tuckman in Saleh (2005:132) states that in this design, the subject groups were not only pre-test but also post-test. In this design, the experimental group (X), received a treatment while the second group, the control group (Y), did not. Both groups had been given a pre-test and post-test. The experimental group was the class was taught using project based learning through video vlog, while the control group was the class taught using project based learning method. In this research, the researcher

used true-experimental design as pre-test post-test control group design. True-experimental design is a design that can be controlled all of variable that influence in the experiment. Both of the experimental and control group got post-test and the result had compered.

The research design of true experimental research for post-test only control group design was presented below (Sugiono, 2016:112-113):

**Table 3.1 Design of True Experimental Research**

E	O <sub>1</sub>	X	O <sub>2</sub>
C	O <sub>3</sub>		O <sub>4</sub>

Where:

E : experimental group

C : control group

O<sub>1</sub> : pre-test for experimental group

O<sub>3</sub> : pre-test for control group

X : treatment

O<sub>2</sub> : post-test for experimental group

O<sub>4</sub> : post-test for control group

### **3.2 Population and Sample**

#### **1. Population**

Population is a big group of the dominant of the group becomes the field of the research (Sukmadinata, 2013: 250). Sanjaya (2013: 231) states that population is all the elements that will be targeted research. Arikunto (2006: 130) states that population as a set (or collection) of all elements possessing on or more attributes of interest. Population is all members of any well-defined class of people, events

or objects. The population of the research were included all of the tenth grade IPA (X-IPA) students of SMA N 1 Pecangaan in the academic year of 2020/2021. The total number of population in this research are 216 students from 6 classes.

**Table 3.2 Population of the Research**

Class	Total of the Students (X)
X IPA 1	36
X IPA 2	36
X IPA 3	36
X IPA 4	36
X IPA 5	36
X IPA 6	36
$\Sigma X$	216

## 2. Sample

Sample is a part of all representative of a population will be analyzed. Arikunto (2006: 134) states that if the number of subject is more than one hundred persons, a researcher may take 10% - 15% or 20% - 25 % or more of the population as the sample. The smaller group from which the researcher generalizes is known as a sample. Obviously, the accuracy of the researcher's inference depends on how representative the sample is of the populations. To make the sample more representatives, the researcher randomly selected the sample from the population. In this research, the researcher took two classes as sample and the classes would be experimental and control groups. The sample of the research took two classes into two groups, they were experimental group and control group. X-IPA3 and X-IPA4 in which each class consists of 36 students with the entire total of students is 72. The X-IPA4 became the experimental group and X-IPA3 was the control group.

### 3.3 Sampling Technique

Sampling is the way or technique of taking sample from the population. The sample of this research had been taken by simple random sampling. Hadi (2004: 336) states that simple random sampling technique is the technique of choosing the sample, so that it can be the representative of the whole population and give the accurate statistical result. A simple random sample means that all members of the population have an equal chance to be selected for the sample. In this research, the researcher chose two classes as the sample from six classes using lottery and from that technique, the researcher took X-IPA3 as the sample for the control group and X-IPA4 for the experimental group. It means that X-IPA4 had been taught by using project based learning through Video Vlog and X-IPA3 had been taught by using project based learning.

### 3.4 Variable of the Research

Sugiyono, (2016:61) states that Independent variable is a variable that was obtained and can be diversified into free variable. Different with independent variable, dependent variable is one effect of independent variable. This research considers two types of variables, they are dependent and independent variable.

In this research, the variables were:

1. Independent Variable : The use of Project Based learning through Video Vlog.
2. Dependent Variable : The students' improvement in speaking skill for the tenth grade students of SMA N 1 Pecangaan.

### 3.5 Technique of Collecting the Data

In collecting data, the researcher gave pre-test to the students before giving treatment and post-test to the students after giving treatment. There were as follows:

#### 1. Pre-test

Pre-test had been given to the students before conducting treatments. It gave to both experimental class and controlled class. The function of pre- test was to get the information about the student's skill in speaking before the treatment.

#### 2. Treatment

Treatment had been given to the students in experimental class during teaching learning process. The treatment had been given to the students after giving the pre-test. Treatment meant the researcher applied the technique that used in a learning process. In this research, the researcher divided the class into two groups which was for the experimental group and control group. Experimental group was a group that the researcher gave the treatment by using project based learning through Video Vlog. Control group was a group that the researcher had been given the treatment by project based learning method. The treatment for both groups had been done in three meetings include the post-test. The detail could be seen as follows:

**Table 3.3 The schedule of Implementing the Research**

No.	Date	Activities
1	July 22 <sup>st</sup> 2020	Giving pre-test in experimental group and control group
3	July 29 <sup>st</sup> 2020	<ul style="list-style-type: none"> <li>Giving material about descriptive text for experimental group</li> </ul>

		<ul style="list-style-type: none"> <li>• Giving treatment for experimental group</li> <li>• Giving material for control group</li> </ul>
4	August 5 <sup>st</sup> 2020	Giving post-test for experimental group and control group

**Table 3.4 Treatment Procedure in Experimental Research**

First Treatment	<ul style="list-style-type: none"> <li>- The researcher introduced and explained about the Project Based Learning to the students.</li> <li>- The researcher explained the material about descriptive text to the students.</li> <li>- The researcher asked to the students to make a Descriptive text.</li> <li>- The researcher asked to the students to make the text into a video.</li> </ul>
Second Treatment	<ul style="list-style-type: none"> <li>- The researcher explained about Video Vlog.</li> <li>- The researcher gave one example of Video Vlog about Descriptive Text.</li> </ul>
Third treatment	<ul style="list-style-type: none"> <li>- The researcher asked the students to make a Descriptive by using Video Vlog individually and uploaded in YouTube.</li> </ul>

### 3. Post-test

Post-test had been given by the researcher to the students after having a class. Both of experimental group and control group got the post-test. Post-test aimed to check the students' improvement related to the topic that had been learned in the learning process. It meant to give the evaluation. Post-test aimed to know the use of Project Based Learning through video vlog to improve speaking skill in descriptive text for the tenth grade students of SMA N 1 Pecangaan.

#### 3.6 Instrument of Collecting the Data

In conducting the research, the researcher needed research instrument. Instrument is an instrument device for the data collecting in a research study. Kerlinger (1988:118) states that "an instrument plays an important role in a study. In the sense that the reliability of the instrument will influence the reliability of the data obtained." The researcher used oral test to measure the students' speaking skill toward the project-based learning. The oral test was used to know the students' speaking skill. The test had been conducted at the end of the treatment. The aim of this test was to know the progress of the students' speaking skill after the students had been taught by using Project Based Learning through Video Vlog and Project Based Learning without Video Vlog. It was used to get the students' speaking score. The oral test had been conducted individually through video vlog. The used of oral test can measure the student's ability in speaking skill and the assessment of oral skills included defining language proficiency, avoiding cultural biases, and attaining validity (Sánchez, 2006).

The researcher took the score from the students' performance through video vlog as a final project. The researcher gave instrument to create descriptive text

appropriate with the generic structure of the text. After the students create the text, the students will record their result by using video vlog. The researcher gave the score during the students' performance by using rubric scoring, the researcher will check with the video vlog that have made by the students. As the measurement tool of evaluation process, the test must have criterions to measure students' speaking skill. According to Nunan (2013:325) there are five criteria used to rate the students' performance, namely overall communicative effectiveness. There are pronunciation, vocabulary, structure, fluency, and comprehension.

**Table 3.5 The Criteria of Speaking Performnce**

No.	The Aspect Evaluated	Score	Criteria
1	Pronunciation	1	Incomprehensible or no response.
		2	Many phonemics errors, many difficult to perceive meaning.
		3	Occasional phonemics errors, but generally comprehensible.
		4	Phonetically accurate pronunciation throughout.
		5	No conspicuous mispronunciations, but would not be taken for a native speaker
2	Vocabulary	1	Vocabulary inaccurate throughout or no response.
		2	Vocabulary usually inaccurate except for occasional correct word.
		3	Mirror lexical problem, but generally appropriate.
		4	Consistent use of appropriate word throughout.
		5	

			Professional vocabulary broad and precise
3	Structure	1 2 3 4 5	<p>Virtually no correct structures or no</p> <p>Error of basic structure but some phrases rendered correctly.</p> <p>Generally accurate structure occasional slight error.</p> <p>Few errors, with no patterns of failure</p> <p>No errors of morphology of syntax.</p>
4	Fluency	1 2 3 4 5	<p>Long pauses, utterance left unfinished or no response.</p> <p>Some define stumbling, but manages. To rephrase and continue</p> <p>Speech is generally natural and continues, occasional slight stumbling or pauses at unnatural points in the utterance.</p> <p>Speech is natural and continues any pauses correspond to those which might be made by native speaker.</p> <p>Speech on all professional and general topics</p>
5	Comprehension	1 2 3 4	<p>Not on topic. Little or no communication.</p> <p>Clear but no on topic, very hesitant and brief utterances, sometimes difficult to understand.</p> <p>Understandable, effective communication in short turn.</p> <p>Logical and flowing, easy and effective communication, uses long turns.</p>

		5	Understand everything in normal educated conversation except for very colloquial items
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Accepted from Brown (2004)

**Table 3.6 The Criteria of Scoring**

No	Scale	Classification
A	90 – 100	Excellent
B	80 – 89	Good
C	70 – 79	Adequate
D	60 – 69	Inadequate/Unsatisfactory
E	Below 60	Failing/unacceptable

(Brown,2004)

How to evaluate: Maximum score = 100

Sum of students' score x 4 = 100

### 3.7 Validity of Test

Test can be called valid if there is similarity between the data that will be collected with real data in the object of the research. Sugiyono, (2011: 121) states that valid is the instrument that can collect data. A valid instrument has high level of validity. Validity is the degree of accuracy between the data that occurs in the object of research that can be reported by the writer. It can be conclude that, valid data is the data that does not differ between the data reported by the writer and the data that actually occurs in the object of the research. An instrument is valid when it has high validity while an instrument was invalid when it has low validity (Arikunto, 2013:225). To find out the validity of the speaking test, and to measure students learning outcomes. The researcher used construct validity. Construct validity was known and used in psychological tests to measure abstract behavioral

symptoms, such as solidarity, emotional maturity, attitudes, motivations, interests, and so on (Arifin, 2015:257). Construct validity is concerned with the extent to which an instrument measures the concept or construct it was designed to measure (Brink & Wood, 2008:274). It means that construct validity focuses on the type of test that is concept-based and theoretical.

Construct validity refers to the extent to which an instrument measures the concept of a theory in the preparation of an instrument. For example, an instrument for measuring interest must be able to measure the understandings contained in the concept of interest. The definition or concept measured comes from the theory used. To test construct validity, expert judgement can be used. In this case after the instrument is constructed about aspects that would be measured based on a certain theory, then consult with experts. The experts will give a decision on whether the instrument can be used or not (Widoyoko, 2016:237). In this study the researcher used one English teacher as Expert Judgement to measure that the instrument of the test is valid or not. Letter of validity instrument could be seen on appendix 4.

### **3.8 Technique of Analysing the Data**

The technique had been used in analysing the data was statistical analysis. The researcher got the students' score of the experimental and control group. The score checked for the post- test both groups. The first step was the researcher calculated the mean score of experimental-group. The scores from the experimental and control group had been analysed by using t- test of independent sample. T- Test for independent formula was used to find the effectiveness of the treatment. The researcher used the statistical formulation of t-test formula using SPSS 20.

## 1. Data Description

The descriptive analysis consisted of mean and standard deviation of speaking score. The formula of mean standard deviation as follows:

### a. Mean

The mean is adding a list of score then divided by the number of scores. The formula of mean score as follows:

$$\bar{X} = \frac{\sum X}{N}$$

Where :

X : mean score

$\sum X$  : the sum of all score

N : the total number of the subject

### b. Standard Deviation

Standard deviation is the square root of variance in which the variance is the average of the squared differences from the mean. The formulation in standard deviation as follows:

$$SD = \sqrt{\frac{S}{N-1}}, \text{ where } SS = \sum X^2 - \frac{\sum X^2}{N}$$

Where:

SD : Standard Deviation

SS : The sum of square

N : Total number of the subject

$\sum X^2$  : The sum of all square, each score is squared and all the square are added up.

## 2. Pre- Requisite Test

### a. Normality Test

Normality test had been used to test the sample from the population that was gone to be analysed whether both groups have normal distribution or not. The normality test analysed by Liliefors formula with the criteria if  $L_m (L \text{ maximum}) < L_t (L \text{ table})$  at the level significance 5% (0,05) the data is in normal distribution.

### b. Homogeneity Test

Homogeneity test had been used to know whether two groups (experimental and control class) that took from population have homogeneity or not. In this research, the researcher used the following formula to test the homogeneity of the population variants:

The biggest variant,  $F = \frac{\text{The smallest variant}}{\text{The biggest variant}}$ . If  $F \text{ value} \leq F \text{ table}$ , it can be concluded that the data are homogenous.

## 3. Hypothesis Testing

The researcher examined the data in the following steps to answer the objective of the study. Firstly, the test had been done in both groups, experimental group using project-based learning through video vlog and control group using project based learning. Secondly, the result of the test had been scored using analytic scale. Thirdly, the mean score of two group had been determined. Finally, the mean compared by applying T- test formula. T- test had been used to differentiate between the students' result of speaking skill using project-based learning through video vlog and using project based learning method was significant or not.