

## CHAPTER III

### RESEARCH METHOD

The subchapter included in the discussion of research method are Research design, Population and sample, Research instrument, validity and reliability testing, data collecting method, and data analysis.

#### **A. Research Design**

Approach is a way of considering on doing something. This research belongs to quantitative research that uses and deals with statistical calculation. Based on Best (1981:257), “ statistical analysis is the mathematical process of gathering, organizing, analyzing, and interpreting numerical data, and is one of the basic phases of the research process”.

Considering the research of the problems and the purposes of the research, research design that used in this study is quasi-experimental design. The research is conducted with two-group, pre-test and post-test design. which can be described as the following:

Experimental Group

Control Group In which:

$o_1$  = pre-test for the experimental group

$o_2$  = post-test for the experimental group

$o_3$  = pre-test for the control group

$o_4$  = post-test for the control group

X = treatment using Board game as a media

The experimental group is the group who will be given treatment, and control group is the group who will be without given a treatment.

According to Arikunto (2006) data is whole fact and number that can be used as material for arranging information is used as need. In this research the source of data will be taken from the students' score in speaking test before and after they are taught by using board game. A source text is a text from which information or ideas are derived.

Brown (2004) states “ Variable in the simplest term that is something that may vary or differ”. Brown also elaborates that there are two types of variable, the independent variabe and the dependent variable. In this research, the variables will be

- a. Independent variable : Board game
- b. Dependent variable : Students' ability in speaking

## **B. Population, Sampling and Sample**

### **1. Population**

There are some explanations about the meaning of population. According to Ary et al (2010:148) population is all members of well-defined class of people, events or objects. And Muijs (2014:15) says that population is the group of people we want to generalize to. It means that the population is the whole of subject used by the researcher. In this study the population of this research is second grade of MA Al-Ma'arif Tulungagung, which consist of 6 classes and each class consist of 20 students. So, the total population is 120.

## 2. Sample and Sampling Technique

Sample is a part of the total number and the characteristic belong to population. Because of there are a lot of populations, the researcher will use purposive sampling. The researcher decides to choose IPS-1 class and IPS-2 class as the samples. IPS-1 class as an experimental group and IPS-2 class as a control group by considering a factor that both of them are the recommendation from teacher.

Sampling technique used in this quantitative research purposive sampling as a part of probability sampling. This kind of technique was used because the class is consisted of heterogeneous students (high, middle, and low achievement). So the researcher will choose two normal classes that have moderate or average ability.

### **C. Research Instrument**

Instrument is a tool that used in a research. The main instrument of this research was tes. Test that is used in this research focused in using media Board Game to improve students' speaking ability for senior high school.

Test is used in order to know the difference achievement between experiment class and controlled class after the treatment was given. According to Longman test is a set of questions and exercises used to measure the achievement or capacity of the individual or group. The researcher will conduct oral test item with board game and without board game. Test is used to measure the person's competence and to achieve the

objective. The data will be collected by giving speaking test, speaking will be conducted twice, there are pre-test and post-test.

The teacher will analyze the result of the test and give score. The scoring: grammar, vocabulary, fluency, pronunciation, and comprehension. The indicator of the success of this research will be based on oral proficiency scoring categories proposed by Brown (2001:173). The research is considered as successful if the students make a significant improvement on their grammar, vocabulary, comprehension, fluency, pronunciation and task. The researcher will use a test to collect the data. The test will be in the form of speaking test to see different result of students' speaking ability who taught by using and without using board game. The researcher will give pre-test and post-test to both of experimental and control group. Post test will be held after all treatments conducted. This test will be used to measure students' achievement after they were given treatments. The result of test will be analyzed statistically.

#### **D. Validity and reliability testing**

Researcher is always dependent on measurement. There are two important characteristics that every measuring instrument should go through a process of validity and reliability check.

##### **1. Validity**

Fraenkel and Wallen (2005:113) states that a valid instrument is measures what it is supposed to measure. Validity is the most important idea to consider when preparing or selecting an instrument for use.

These are four types of validity : 1) content validity, 2) face validity, 3) criterion related validity, 4) construct validity. In this research to measure whether the test has a good validity, the researcher analyzed the test from face validity and content validity.

a. Face validity

Face validity refers to the degrees to which a test looks right, and appears to measure knowledge or abilities it claims to measure, based on subjective judgment or the examinees who take it, the administrative personnel who decide on its use, and other psychometrically unshopisticated observers (Brown, 2004). The test in this research was designed to measure students' speaking skill, thus, to achieve face validity, the researcher provided the instructions to ask students to write. In this study, the face validity was done through validated by the expert. You can see in appendix 2 on page 76.

b. Content validity

content validity is a kind of validity which depends on careful analysis of the language being tasted and particular test. The researcher adjusted the test with the learning syllabus that contains of standard competence and basic competence.

Content validity is relevant. It means that items or tasks in the test match what the test as a whole is supposed to assess. Where the objectives of the programmer are set out in detail, for example is a syllabus that list skills or functions, then the content validity can be assessed by comparing

the kind of language generated in the test against the syllabus (Underhill,2006:106)

The instrument of study had content validity because the items were materials used for teaching speaking at the second grades of MA Al-Ma'arif Tulungagung. Also, the content validity since the tests was designed based on main competence in syllabus Curriculum of 2013 since the school implements the Curriculum of 2013 in the time the researcher conducted the research. Table 3.1 shows the main and basic competence in the curriculum 2013.

**Table 3.1**

**Main Competence and Basic Competence in Curriculum of 2013.**

Main competence	Basic Competence
1.4. analyzing, thinking, and performing in both concrete and abstract field related to the development of what has been learn in school individually, and being able to use the method.	4.14 capture the meaning of exposition text oral and write.

c. construct validity

construct validity is one kind of validity that is measure the ability which is supposed to measure. For speaking test it should having such of knowledge of speaking such as pronunciation, fluency. Construct validity is any theory, hypothesis, or model that attempts to explain observed

phenomena in our universe of perception (Brown 2004:25). The pre-test and the post-test used oral test, in which students were asked to tell their experience based on picture. It can be said that these test has construct validity because that product test is in the form of speaking.

## 2. Reliability

Reliability is necessary characteristic of any good test for it to be valid at all. Reliability means the stability of test score, a test cannot measure anything well unless it measure consistently (Harris 1969:14). According to Brown (2004:20) a reliable test is consistent and dependable. It can be said also the reliability is the consistency of the results of the acquisition during the study in the classroom. The result of a language skill assessment has high reliability if the result precisely represents the true level of the skill being assessed.

**Table 3.2**  
**Correlations of Pretest (Try-out)**

		rater1	rater2
rater1	Pearson Correlation	1	,919**
	Sig. (2-tailed)		,000
	N	10	10
rater2	Pearson Correlation	,919**	1
	Sig. (2-tailed)	,000	
	N	10	10

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Based on the computation of the *Pearson Product Momen* in try out of pretest the values is 0,000, it is bigger than 0,05. So, it means that the pretest of try-out is reliable.

**Table 3.3**  
**Correlations of Posttest (Try-out)**

		rater1	rater2
rater1	Pearson Correlation	1	,924**
	Sig. (2-tailed)		,000
	N	10	10
rater2	Pearson Correlation	,924**	1
	Sig. (2-tailed)	,000	
	N	10	10

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Based on the computation of the *Pearson Product Moment* in try-out of posttest the value is 0.000, it is bigger than 0.5. So, it means that the posttest of try-out is reliable.

## **E. Normality and Homogeneity Testing**

### **a. Normality**

Normality test is used to test whether a variable is normal or not. Normal here means if the data have a normal distribution. The main reason of conducting normality testing in a research is that is is necessary for the researcher to know that the population or data involved in the research is in normal distribution. To test the normality of the data can use the *One Sample Kolmogro-Smirnov* test with the provision that if Asymp. Sig > 0,05 the data were normally distributed (Asmarani, 2008:234) in this case the normality using *SPSS* (Statistical Product and Service Solutions) 20.0 for *windows*. The hypothesis for testing normality are:

- a.  $H_0$  : Data is in normal distribution
- b.  $H_a$  : Data is not in normal distribution



in testing the hypothesis, the data is in normal distribution if  $H_0$  is accepted. In this case,  $H_0$  is rejected if significance value is lower than 0,05 ( $\alpha = 5\%$ ) while  $H_a$  is accepted if the significance value is higher than 0,05. The result of normality test has computed by using SPSS 20.0 version. It can be seen as follow:

**Table 3.4**  
**One-Sample Kolmogorov-Smirnov Test**

		pre_cont	post_cont	pre_exp	post_exp
N		19	19	19	19
Normal Parameters <sup>a,b</sup>	Mean	29,89	44,00	42,11	60,84
	Std. Deviation	5,714	10,995	13,687	13,893
Most Extreme Differences	Absolute	,160	,126	,239	,252
	Positive	,156	,126	,130	,252
	Negative	-,160	-,116	-,239	-,213
Kolmogorov-Smirnov Z		,696	,548	1,043	1,099
Asymp. Sig. (2-tailed)		,719	,925	,227	,178

a. Test distribution is Normal.

b. Calculated from data.

Based on the output from SPSS 20.0, it revealed that the significance value from pretest of control group was 0,719, posttest of control group was 0.925, pretest of experimental group was 0.227, and posttest of experimental group was 0.178. all value from pretest of control group, posttest of experimental group were bigger than 0.05. the significance value on pretest of control group was 0.719 and it bigger than 0.05 ( $0.719 > 0.05$ ), posttest of control group was 0.925 and it bigger than 0.05 ( $0.719 > 0.05$ ), pretest of experimental group was 0.227 and it bigger than 0.05 ( $0.227 > 0.05$ ), and posttest of experimental group was 0.178 and it

bigger than 0.05 ( $0.178 > 0.05$ ). it means that  $H_o$  was accepted and  $H_a$  was rejected and the data were in normal distribution.

Because the data is normal, t-test as one parametric testing was chosen for the data analysis.

### b. Homogeneity

Homogeneity test is intended to show that two or more groups of data samples come from populations having the same variance. To know the normality, the researcher used one way anova with SPSS. If the significance value is bigger than level of significant 0.05, it means that the data pretest and posttest have homogeneity of variances.

**Table 3.5**  
**Test of Homogeneity of Variances**

Score			
Levene Statistic	df1	df2	Sig.
,042	1	36	,838

### ANOVA

Score					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2694,737	1	2694,737	17,168	,000
Within Groups	5650,526	36	156,959		
Total	8345,263	37			

Based on the result above the significance was 0.838. it means that the sig was higher than 0.05 ( $0.838 > 0.05$ ). So that it can be concluded that the samples or groups had the same variances.

## **F. Data Collecting Method**

In this reserach, the researcher used test by using group interaction to measure the student speaking skill. The instrument used in speaking test.it was to know the students' ability in speaking before and after taught by using board game. Furthermore, there are two speaking tests administering here, namely pretest and post test.

### **1. pre-test**

The purpose of doing pre-test is to get speaking score before doing the treatment. Pre-test was designed for the purpose of diagnosing pre-existing students' achievement in speaking skill. Furthermore, it was administered before the treatment was given to the students. Pre-test was used to measure the students's speaking ability before new strategy applied. The researcher conducted pre-test in the beginning of study. The teacher gives a theme to the students. Then the students tell their opinion based on the theme that was given with their own words. Before starting practice speaking, the students have to think first about the possible vocabulary to help the students in expressing ideas. In pre-test, the students started expression their ideas without using media board game in the classroom. This test is given in order to know how far the students' speaking achievement.

### **2. Treatment**

Treatment was given to the students in teaching speaking achievement. It was purpose to know the students' speaking achievement

after giving treatment. Treatment is a strategy by the researcher that can be accepted by the students or not. The researcher conducted treatment while two meetings. The researcher introduced about media board game to the students. Although they have not known this media before and the researcher explained practice the media and its steps.

For the control group, the researcher did not provide the treatment. the researcher explain about the expository text. The researcher gave instructions to form a class of 4 to 5 students to set up a group. Then, the researcher asked one of the students to present the topic they discussed.

### 3. Posttest.

Posttest is test that was given to second grade students of MA Al-Ma'arif Tulungagung to measure their ability after treatment process, this test was given to know the basic competence of 19 students and to know their knowledge after they got treatment. it is also to know the final scores and to know the students' competence difference before and after they get treatment. In posttest, the researcher gave a bit different in the topic. In this test, the students were given time allotment 10 minutes to remember their past event and time allotment 2 to 3 minutes to retell their argument.

## **G. Data Analysis**

The analysis of data was used to analyze and calculate data from the students' speaking score through Board game. The data was analyzed quantitatively by using statistic. The data collected were processed by comparing the result of pretest and posttest. The researcher conducted test

to students being taught by using Board Game and without taught using Board game. The test was done to know whether or not there was significance different score after being given treatment. Also, the researcher used the formula t-test to analyze the data to know the result of the students' speaking score by using SPSS 20.0 version.