

## **CHAPTER III**

### **RESEARCH METHOD**

This chapter presents the research method. It focuses on the method used in conducting this study. The decision covers research design, setting and subject of the study, population, sampling and sample, variable, research instruments, data collecting method, and data analysis.

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

Research is careful study on investigation, especially in order to discover new facts or information, such as scientific, historical research (Homby, 1995:996). It means that a study is done carefully and accurately on investigation of an event, problem or phenomenon about scientific to find out new information.

One of important things that should be considered in conducting research is research design. Research design is commonly defined as the way of thinking and doing preparation to complete and achieve the goal of research (Burn n, Grove sk, 2005). Research method refers to the general strategy followed ingathering and analysis the data necessary for answering the question. In this study the research design used was pre experimental with quantitative approach. This research was intended to investigate the effectiveness of using snakes and ladder game on

students' speaking achievement of the eleventh grade at MAN 1 Tulungagung.

This study used pre - experimental design. The researcher chose this design is to determine the validity of conclusion can be drawn from the study. There are many kinds of experimental research, such as pre – experimental, randomized experimental or quasi – experimental (Ary, 2002: 302).

This study used pre – experimental design in the form of one group pre-test – post-test design with quantitative approach. Experimental research is a scientific investigation in which an investigator manipulates and controls one or more independent variables and observes the dependent variable or variables for variation concomitant to the manipulation of the independent variables (Ary, 1979). Experimental research can be done in the laboratory, in the class and in the field. In this study the experimental research will be done in the class with taking students as population.

This study is classified as pre-experimental design because it has not a control variable. That is why in this study the researcher just puts one group and used pre-test and post-test to see the result of the treatment.

In one - group pre-test – post-test design usually involves three steps : (1) administering a pre-test measuring the dependent variable, (2) applying the experimental treatment X to subjects, and (3)

administering a post-test, again measuring the dependent variable (Ary, 2002: 302).

**Table 3.1 Diagram of One – Group Pre-test Post-test Design**

Pre-test	Treatment (Independent Variable)	Post-test (Dependent Variable)
Y 1	X	Y2

In this study, the procedures of experimental research that use One – Group Pre-test – Post-test design are:

1. Administering a pre-test measuring speaking achievement of eleventh grade students in Agama class at MAN 1 Tulungagung.
2. Applying the experimental treatment teaching speaking by using snake and ladder to the eleventh grade students in Agama class at MAN 1 Tulungagung.
3. Administering a post-test measuring speaking achievement of eleventh grade students in Agama class at MAN 1 Tulungagung.

The differences attributed to application of the experimental treatment are determined by comparing the pre-test and post-test score. In this study, the effectiveness of using snake and ladder game towards speaking achievement will be known after knowing the significant differences scores of the students on speaking achievement before and after being taught by using snake and ladder game.

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

### **1. Population**

There are some explanations about the meaning of population. Population is defined as a group of element or cases, whether individual, objects, or events that conform to specific criteria and to which we intend to generalize the result of the research (James H, 2001).

The small group that is observed is called a sample, and the larger group about which the generalization is made is called a population. Population is defined as all members of any well-defined class of people, events or objects (Ary et al, 2002:138). Population is used more generally; it refers to any collection of entities, of whatever kind, that is the object that have certain characteristics and it becomes the source data that is used by researcher in the study. The population of this research was the eleventh grade students of MAN 1 Tulungagung academic year of 2015/2016. It consisted of 300 students and divided into eleven classes, from IIS Unggulan, IIS 1, IIS 2, IIS 3, MIA Unggulan 1, MIA Unggulan 2, MIA 1, MIA 2, MIA 3, Bahasa and Agama class.

### **2. Sampling**

The sampling is a technique to take a sample. Sampling is the process of selecting a number of individuals for a study in such a way that the individuals represent the large group from which they

were selected (Gay, 1992:123). The purpose of the sampling is to get information about a population.

In this study purposive sampling was chosen as a technique of choosing sample. Arikunto (2006:139) says that purposive sampling is the process of selecting sample by taking the subject that is not based on the level or area but it is taken based on the specific purpose. Basically purposive sampling involves selecting a sample which is believed to be representative given population in the other word the researcher uses expert judgment to select a representative sample.

The researcher used purposive sampling technique to find the individual or sample. Purposive sampling is technique of taking sample by definite consideration from the researcher. Purposive sampling belongs to nonprobability sampling. Purposive sampling is used because of reasons. First, because of the researcher who selecting the sample is who tries to make the sample representative for the population of the study. Second, because the researcher points to her/ his opinion or purpose to choose the current sample. Thus, the sample is being the representation subjective of the study (Paula Lagares Barreiro and Justo Puerto Albandoz, 2001: 4).

Practically, there are some of reasons why the researcher chooses the class. First, the class has average proficiency on speaking based on the English teacher there. Second, the English

teacher gives an official instruction to the researcher due to choose the class as a sample of this research among another class. Based on the English teacher in MAN Tulungagung 1, especially teacher of XI MIA (1, 2, 3, excellent 1 and 2), XI Excellent language and XI Excellent religion, the researcher already choose one class that is XI Excellent Religion (XI IIK U) as the sample of thus research.

### 3. Sample

Selecting sample is a very important step in conducting a research study. According to Gay (1992:126), sample is one that is representative of the population from which it was selected. It means that a good sample must be representative of entire as possible, so that the generalization of the sample as true as the population. In this research the researcher took XI IIK U class as the sample of this research that consisted of 30 students with 6 boys and 24 girls.

### **D. Variable**

According Ary (2002), a variable is an attribute that is regarded as reflecting or expressing some concept or construct. Variable is divided into two, they are independent variable and dependent variable.

Based on the explanation above, in this study snake and ladder game is as media on the teaching speaking at the eleventh grade students of MAN 1 Tulungagung which became independent variable. The

dependent variable was the students' speaking achievement at eleventh grade students' of MAN 1 Tulungagung. Thus, the present study was intended to find out the effectiveness of using snake and ladder game on the students' speaking achievement through experimental study.

#### **E. Research Instruments**

An instrument was needed to collect the data. In order to collect data for research, the researcher used some methods and instruments. Instrument of the research played an important role in research project. The instrument was used to achieve the accuracy of the data and it can indicate that the researcher was successful in this research.

The instrument that was used in this study is speaking test that was developed based on syllabus that the teacher used in the school. By the test, the researcher supposed to assess students' speaking achievement. Test in simple term, a method of measuring a person's ability, knowledge, or performance in a given domain. The researcher applied pre-test and post-test. Pre-test was taken before doing an experimental study or before teaching by using snake and ladder. Pre-test was aimed to measure the students' preliminary their speaking knowledge and achievement before they entered the experimental circle. After getting the result of pre-test, the researcher gave treatment to teach speaking for all the students by using snake and ladder.

After doing treatment, the researcher gave post-test to all students. Post-test was taken after doing an experimental study or after teaching

by using snake and ladder. Post-test was used to know the students speaking mastery after taught by using snake and ladder. The researcher wanted to know how far the students can speak when treatment was on progress. Apparently, the result of the test showed that the students speaking mastery improved significantly.

#### **F. Data Collecting Method**

Data collecting method is the method that is used by the researcher to collect data. Data collecting is systematic and standardized procedure to obtain the necessary data (Tanzeh, 2009:57). If the data are wrong, the result of research will not be valid. To avoid it, a good data collecting methods should be applied. Methodology is a way used by researcher in order to collecting data in order to easier the research and better result in short the data is more accurate, more completed, and more systematically so that it will be easier to be analyzed.

Data is a note of fact or information that will be processed in the research activity. Arikunto (2006), data is a whole fact and number that can be used as material for arranging information is used as need. The data are very significant in the research. The research cannot get information without the data. The data of this research were the students' score of the eleventh grade at MAN 1 Tulungagung in the form of speaking test which were divided into two sections, pre-test and post-test.



After the researcher got permission from headmaster, the researcher started collecting data. The researcher gave test for experimental group using snake and ladder.

Applying the test, the students were tested to perform their speaking. The test was in the form of telling story to measure achievement of an individual. There are two kinds of test:

1. Pre-test

Pre-test was administered before doing an experimental research study or before teaching by applying snake and ladder game. The pre-test was held on March, 21<sup>th</sup> 2016, in the pre-test students were given task to tell about their assumption which have been prepared by the researcher before. The researcher gave twenty pictures and asked the students to choose one of the pictures. Then, the researcher asked the students to tell story about the picture with their own word for minimum 5 minutes. When the students' show their performance, the researcher recorded them and then made score.

2. Post-test

In this study, post-test was administered after doing the experimental research study. The post-test was held on May, 5<sup>th</sup> 2016 and the task was asking students to tell about their assumption. Post-test is a measure taken after the experimental treatment has been applied. Post-test was used to measure students'

ability after treatment process, to know their knowledge after they got treatment. It was done to know the final score and to know the students difference competence before and after they get treatment. The process of post-test is same with the process in pre-test.

### **G. Validity and Reliability**

According to Donald Ary, research is always dependent upon measurement. There are two important concepts that research must understand when they use measuring instrument. These are validity and reliability (Ary, 2010:242). So, to know whether the test is good or not, and to make the data more valid and reliable, it needs validity and reliability testing for both of them:

#### 1. Validity

Sukardi (2005:122) stated validity is degree that indicates in which a test measures what intended to measure. Validity is very important because one of the main characteristic of test, without having this characteristic data is not accurate. Validity is the extent to which inference made from assessment results is appropriate, meaningful, and useful in terms of the purpose of assessment. Based on this research, the researcher would use content validity, construct validity to know the validity of the test.

##### a. Content Validity

To make the test valid, the researcher used content validity. This kind of validity depends on careful analysis of the language being tested and the particular treatment activity. The test should be constructed to contain representative sample because the relevancy of the objective and the content of the test items showed the content validity of the test. The test is said to have content validity if its contents constitutes a representative sample of language skill, structures etc. being tested (Ida Isnawati. 2013:27). Therefore, the test used in this research to fulfill the content validity of speaking.

The content validity in this research can be shown as bellow:

**Table 3.2 The Blue print of pre-test and post-test**

<b>Material</b>	<b>Task form</b>	<b>Competence</b>	<b>Sub-competence</b>	<b>Indicator</b>
Narrative text	Speaking test	1. Expressing the social function and the structure of short and simple narrative text about legend, tale and fairy tale based on the context.	<p>1. Expressing the social function and the structure of short and simple narrativestory about fable, fairy tale, and legend based on the context.</p> <p>2. Expressing the content and language features of short and simple narrativestory about fable, fairy tale, and legend based on the context.</p>	<p>1. Students are able to express the topic of short and simple narrative story about fable, fairy tale, and legend based on the context.</p> <p>2. Students are able to express the content and language features of short and simple narrativestory about fable, fairy tale, and legend based on the context.</p>

Based on the table above, the test had content validity because of there is appropriateness between the test and the purpose and indicator. In addition, the test had proper to the syllabus in eleventh grade of senior high school in the second semester.

#### b. Construct Validity

A test said to have construct validity if it can be demonstrated that it measures just the ability which is supposed to measure. The word construct refers to any underlying ability which is hypothesized in a theory of language learning. Brown (2004:25) mentioned that a construct is any theory, hypothesis or model that attempts to explain observed phenomena in our universe or perception.

According to Brown (2004: 172-173), the aspects of speaking consist of five items: Grammar, Vocabulary, Comprehension, Fluency, and Pronunciation. Those 5 aspects should be used as the criteria of good speaking. In this research, the speaking test also used the 5 criteria above as the aspects of good speaking. The researcher asked the students to speak for 5 minutes based on the topic.

The criterion of success of the students speaking ability adapted and modified from Hughes (1989). They are as follow:

**Table 3.3 Analytic oral language scoring rubric**

<b>Criteria</b>	<b>Weight</b>	<b>Exemplary 4</b>	<b>Accomplished 3</b>	<b>Developing 2</b>	<b>Beginning 1</b>
<b>Content</b>	35 %	The content is clear, related to the picture and the aspect must be informed such as biographical recount, and speak with high confidence.	The content is fairly clear, related to the picture and the aspect must be informed such as biographical recount, and speak with confidence.	The content is fairly clear, related to the picture and the aspect which must be informed can't be delivered completely and looks uncomfortable.	The content is unclear, can't tell the appropriate aspect, and looks nervous.
<b>Fluency</b>	30%	Speech on all professional and general topics as effortless and smooth as a native speaker's.	Speech is effortless and smooth but perceptibly non-native in speech and evenness.	Speech is frequently hesitant, sentence may be left incomplete.	Speech is very slow and uneven except for short sentences.
<b>Vocabulary</b>	20%	Effective choice of words and use of idioms and word forms.	Adequate choice of words but some misuse of vocabulary, idioms, and word forms.	Limited range, confused use of words, idioms, and word forms.	Very limited range, very poor knowledge of words, idioms, and word forms.
<b>Grammar</b>	15%	No more than three errors during telling the picture of favourite famous person.	Few errors with no patterns of failure.	Frequent errors showing some major patterns uncontrolled and causing occasional misunderstanding.	Grammar almost entirely inaccurate phrases.

### c. Face validity

A test called to have face validity if it looks as if it measures what is supposed to measure (Hughes, 1989: 33). In this research, the test given to the students to measure speaking achievement especially used snake and ladder game strategy. A test that does not have face validity may be rejected by the validator, advisor, and the teacher. Another explanation said that face validity refers to the extent to which examinees believe that the instrument is measure what it is expected to measure (Ary, 2010: 228). The example of face validity, a test which pretended to measure students' speaking achievement but which did not require the test-taker to read might be thought lack of face validity.

In this research, the researcher used face validity by consulting with the expert as a validator. After that the test has some viewpoint that makes it reliable in the face validity such as; the instructions in each section have to be understandable for the students, the question must not be ambiguous to make students able to answer it, the time allocation is appropriate for students who have to finish the test punctually.

## 2. Reliability

Fraenkel (2012) stated that reliability is the consistency of score obtained. A reliable test is consistent and dependable. Thus, if the students are given the same test on two different occasions, the test

should yield similar results and the more similar the scores are, the more reliable the test is. The test of try out through interview between the researcher with ten students. The researcher showed some pictures to students and then the researcher asked students to tell about the story based on each picture. Then, the researcher made score from the result of interview. Besides that, the test was evaluated by the teacher after it was developed. Finally, try out is also done by the researcher.

To measure the reliability of the instrument, the researcher used inter-rater reliability where the two scorers did the scoring and two sets of scores gotten from the two scorers were calculated to get the correlation coefficient. The two scorers were the two researchers itself.

The tryout test was done on February 28<sup>th</sup>2016

**Table 3.4 The Try Out's Result of Pre-test and Post-test**

<b>No</b>	<b>Nama</b>	<b>Nilai</b>
1	SA	85
2	EE	70
3	MG	80
4	RB	75
5	NA	85
6	NC	90
7	SAV	95
8	DN	90
9	EF	95
10	NR	85
		$\sum X = 850$





item	Pearson	,814*										
_5	Correlation		-,146	,430	,354	1	,617	,785*	-,160	,622	,037	,679*
	Sig. (2-tailed)	,004	,687	,215	,315		,057	,007	,660	,055	,920	,031
	N	10	10	10	10	10	10	10	10	10	10	10
item	Pearson	,676*										
_6	Correlation		-,549	,640*	,193	,617	1	,530	-,515	,136	,247	,508
	Sig. (2-tailed)	,032	,100	,046	,593	,057		,115	,128	,707	,491	,134
	N	10	10	10	10	10	10	10	10	10	10	10
item	Pearson	,858*										
_7	Correlation		,189	,663*	,313	,785*	,530	1	,070	,661*	,233	,935**
	Sig. (2-tailed)	,001	,602	,037	,378	,007	,115		,847	,038	,517	,000
	N	10	10	10	10	10	10	10	10	10	10	10
item	Pearson	-,279										
_8	Correlation		,211	-,169	-,210	-,160	-,515	,070	1	,276	,114	,188
	Sig. (2-tailed)	,434	,558	,641	,560	,660	,128	,847		,441	,754	,602
	N	10	10	10	10	10	10	10	10	10	10	10
item	Pearson	,579										
_9	Correlation		,221	,169	,610	,622	,136	,661*	,276	1	,252	,673*
	Sig. (2-tailed)	,080	,539	,641	,061	,055	,707	,038	,441		,483	,033
	N	10	10	10	10	10	10	10	10	10	10	10
item	Pearson	,299										
_10	Correlation		-,011	,473	,534	,037	,247	,233	,114	,252	1	,523
	Sig. (2-tailed)	,401	,975	,167	,112	,920	,491	,517	,754	,483		,121
	N	10	10	10	10	10	10	10	10	10	10	10
total	Pearson	,774*										
_sco	Correlation		,163	,761*	,362	,679*	,508	,935*	,188	,673*	,523	1
re	Sig. (2-tailed)	,009	,652	,011	,303	,031	,134	,000	,602	,033	,121	
	N	10	10	10	10	10	10	10	10	10	10	10

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

\* . Correlation is significant at the 0.05 level (2-tailed).

A perfect correlation, either positive or negative. It means that the results of Pearson Correlation is +1 or -1. In this case, it can be said that when the result of Pearson Correlation showed a score closer 1, so it

can be said stronger correlation. Furthermore, if it is closer +1, so it has strong positive correlation. Conversely, if it is closer -1, so it has strong negative correlation. Based on the table 3.5, it can be seen that the results of Pearson Correlation is 1.0. Thus, it indicates that the instrument had the strong positive correlation and it was reliable.

### **H. Normality Testing**

Normality testing was used to find out whether the data was in normal distribution or not. The normality of data is important because the data can be considered to represent the population when it is in normal distribution. Because of it, the researcher wanted to test the normality of data by using SPSS 16.0 with *One Simple Kolmogorov-Smirnov*. The researcher done for the normality testing of pre-test and post-test scores.

The hypotheses of normality testing were:

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

The hypotheses of normality testing show that the data is normal distribution if  $H_0$  is accepted and the data is not in normal distribution if  $H_a$  is accepted. The  $H_0$  is accepted when the significance value is higher than 0.05 and  $H_0$  is rejected when the significance value is lower than

0.05. The researcher computed the normality of test by using SPSS 16.0 and the result for normality testing can be seen as follows.

**Table 3.7 The result of pretest and posttest in normality testing**

One-Sample Kolmogorov-Smirnov Test		
		VAR00001
N		28
Normal Parameters <sup>a</sup>	Mean	77.6786
	Std. Deviation	8.97343
Most Extreme Differences	Absolute	.189
	Positive	.189
	Negative	-.114
Kolmogorov-Smirnov Z		.999
Asymp. Sig. (2-tailed)		.271
a. Test distribution is Normal.		

On the basis of the table 3.7 above, it was seen that the significance value was 0.9. As explained previously, the hypotheses of normality testing told that the data is normal distribution if  $H_0$  is accepted and the data is not in normal distribution if  $H_a$  is accepted. The  $H_0$  is accepted when the significance value is higher than 0.05 and  $H_0$  is rejected when the significance value is lower than 0.05. According the result above,  $H_0$  was accepted and  $H_a$  was rejected. Moreover, the data was belonging to normal distribution. In conclusion, the instruments were in this research were in normal distribution based on the calculation above.

## **I. Technique of Data Analysis**

Quantitative approach was used in this study. Quantitative data is a technique to analyze and count the data. It means that the technique of quantitative data analysis is the process of data shaped by number. In this study, the researcher used the quantitative data to know the students' achievement in speaking after they are taught by using snakes and ladder game as a media in teaching speaking. The researcher analyzed the result of the test after collecting the data by using an oral test. The result of the test was processed by comparing the data before and after treatment.

After the researcher got the result of the pre-test and post-test, the researcher used t-test to analyze the data. According to Cohen, Louis, et al (2007:543), the t-test assumes that one variable is categorical (e.g., males and females) and one is a continuous variable (e.g., marks on a test).

The researcher in this study used the formula of T-test to analyse the data to know the result of students' test which are conducted before and after doing treatment. The data were analysed using the following of t-test (Ary et al, 2002:162).

The researcher used T-test using statistical program to know the effectiveness and to get stronger conclusion. The t-test was taken from result of students' test which was conducted before and after doing treatment or taught by using snake and ladder.