

CHAPTER III

RESEARCH METHOD

This chapter focuses on methods of the study. They are research design, variable and sample, research instrument, reliability and validity testing, normality and homogeneity testing, data collecting method, and data analysis.

A. Research Design

A method of research is one of the most important requirements and it is essential in conducting a research. By using a method of research the researcher is able to work systematically and to avoid speculative problem solving. Creswell (2008:3) states that research is a process of steps used to collect and analyze information to increase the understanding of a topic or issue. Research design is an important thing in the research. It is used to arrange the setting of the research in order to get valid data.

In this research, the researcher wanted to find whether Senior High School students learning speaking with using bamboo dancing technique better than those students learning speaking without using bamboo dancing technique. So the researcher used the quantitative research to analyze the data.

In the process of research data to achieve a goal must be done scientifically, namely by using scientific traits that include rational, empirical, and systematic (Sugiyono, 2012:3). Based on the explanation, the researcher can understand that the research method is a systematic work step, and done

scientifically start the preparation stage, collecting data, processing the data, and drawing conclusions from the research results.

The method used in this research is quasi-experiment method. The purpose of this quasi-experimental research method is to know at causal relationships by using a treatment to one experimental group and comparing the results with a control group. The design used in this research is the control group of pretest and posttest. As explained by Arikunto (2010: 124) that the design of pretest and posttest groups aims to determine the state of the student's initial ability before treatment through pretest activities and to determine the students' end-ability in certain skills after being given treatment through posttest. Moreover, Ary et al (2010:648) state that quasi-experimental is the research in which the investigator can control the treatment and the measurement of the dependent variable but cannot control assignment of the subjects to treatment of the subjects to treatment.

Based on the above explanation, this research design uses two groups. One group acts as an experimental group and another group acts as a control group. The role of the experimental group in the research conducted is the sample group given the treatment. This treatment by using cooperative learning model of bamboo dancing technique in learning speaking to retell the past event submitted by teacher through learning process. The control group in this study acts as a sample group that is not treated as an experimental group. This material is gives conventionally.

The way to know the subject in the experimental group and control group is by doing pretest. Pretest is conduct as the initial stage to know the students' speaking ability before any treatment. The next activity is giving treatment. Furthermore, to find out whether the technique chosen is effective or not used in teaching speaking, so the researcher conducts posttest. The following the researcher presents the design tables based on experimental and control groups. Ary et al.(2010:648) state that the illustration of the research design in this study is as the table below:

Table 3.1
The Illustration of Research Design

Group	Pretest	Independent Variable	Posttest
E	Y ₁	X	Y ₂
C	Y ₁	-	Y ₂

E : Experimental group

C : Control group

Y₁ : Pretest for both of groups

X : Treatment for experimental group (Bamboo Dancing Technique)

Y₂ : Posttest for both of groups

From the design above, subjects will be grouped into an experimental group and a control group. Formerly, the quality of subjects will be checked by pre-testing them. Then, the experimental treatment (using bamboo dancing technique in teaching speaking) will apply to the

experimental group, while the control group will teach speaking without bamboo dancing technique. The result of posttest will be computed statistically.

B. Population, Sampling and Sample

1. Population

Population is the objects or subjects that have some qualities and characteristics that are chosen to be learned and to be concluded by the researcher (Sugiyono, 2010:117). According to Ary et al (2010:647), population is the larger group to which a researcher wishes to generalize; it includes *all* members of a defined class of people, events, or objects.

In this research, the population was the tenth grade at Senior High School 1 Ngunut. That consists of 10 classes and each class consists of 33-38 students. So the total of population is 349 students.

2. Sampling

The concept of sampling involves taking a portion of population, making observation on this smaller group, and then generalizing the finding to the large population from which the sample was drawn (Ary, 2002:163).

In this research, the researcher used purposive sampling. The researcher used purposive sampling because the class consists of heterogeneous students (high, middle, and low achievement). So the researcher will choose two normal classes that have moderate or average ability.

3. Sample

According to Ary (2002:163) defines that sample is the small group that is observed. It means that a sample is a portion of the population (Arikunto, 2010:174). Moreover, states that sample is a part of population which represents it. In short, sample means a part of population that observed. Because there were a lot of populations, the researcher took the sample for two classes of tenth grade at Senior High School 1 Ngunut. The classes for sample were X MIPA 2 and X MIPA 3. Thus, the samples consist of 71 students. The 35 students of X MIPA 3 as an experimental group and the 36 students of X MIPA 2 as a control group.

C. Research Variable

According to Arikunto (2010:161) variable is an object of the research or that becomes point of the research. While Bungin (2008:59) states variable is varying phenomenon in the form of quality, quantity, standard quality etc. According to Ary (2002:123) states that a variable is a characteristic or attribute of an individual or an organization that researchers can measure or observe and varies among individuals or organizations studied. In this research, there are two kinds of variables namely:

1. Independent variable

According to Creswell (2014:84), independent variables as those that cause, influence, or affect outcomes. It means independent variable independent variable is the variable that refers to how participants are

treated. It is also a factor that affects a dependent variable. Independent variable in this research was the use of Bamboo Dancing Technique.

2. Dependent variable

According to Creswell (2014:84), dependent variables are those that depend on the independent variables; they are the outcomes or results of the influence of the independent variables. Dependent variable is the variable which is observed and measured to determine the effect of the independent variable. Dependent variable in this research was the students' speaking score in recount text.

D. Research Instruments

Research instrument is tool of collecting data that should be valid and reliable. According to Arikunto (2010:192) the device the researcher uses to collect data is called instrument. Developing an instrument is one of steps in conducting this research. Research instrument refers to any equipment used to collect the data (Arikunto 2010:262). The instrument used in this study is test.

A test is a set of stimuli presented to an individual in order to elicit responses on the basis of which a numerical score can be assigned (Ary et al (2010:201). According to Heaton (1988:5) states that test may be constructed primarily as devices to reinforce learning and to motivate the student or primarily as means of assessing the student's performance in language. Test is a series of question, exercise or other means which is to measure the skills, intelligence of knowledge, ability or talent of an individual or group of people

(Arikunto 2006:150). The test is used to know how well the students have already mastered in learning speaking in recount text through bamboo dancing technique. The test used in this study is oral test.

There are two kinds of tests, they are pretest and posttest. The researcher used test as the instrument to collect the data. In this research, researcher uses pre-test and post-test as the instruments. To make the test, the researcher makes the blueprint of test (see in appendix 3). Pretest is given before applying Bamboo Dancing Technique. While posttest given after researcher applied Bamboo Dancing Technique.

Pretest will be given by the researcher before using taught by using bamboo dancing technique in experimental group, and pretest before using taught without using Bamboo Dancing Technique in control group. For the pretest, the researcher asks to the students to retell the past event based on the topic given (see in appendix 4).

Treatment will be given by the researcher after giving score in pretest. The treatment will be applied by using Bamboo Dancing Technique in experimental group, and without treatment in control group. The researcher gives the treatment based on the lesson plan. In lesson plan, the researcher gives the step of teaching speaking by using Bamboo Dancing Technique (see in appendix 1).

Posttest will be given by the researcher after giving pretest and treatment, the researcher gives the posttest to measure the result. For the

pretest, the researcher asks to the students to retell the past event based on the topic given (see in appendix 4).

E. Validity and Reliability Testing

Validity and reliability are an instrument which will be used must be valid and reliable before using it to collect the data. To doing validity and reliability testing as follow:

1. Validity

Validity is measure appropriate what will be measured, and usually established through an in depth review instrument, including an examination of the instrument's item being tested. Validity is the most complex criterion of an effective test and the most important principle of language testing. It is the extent to which inferences made from assessment result are appropriate, meaningful, and useful in terms of the purpose of the assessment (Brown, 2004:22).

There are four kinds of validity, content validity, criterion-related validity, construct validity, face validity. In this research, the researcher checked content validity, construct validity, and face validity.

a. Content validity

Content validity is relevant. It means that the items or tasks in the test match what the test as a whole is supposed to assess. Where the objectives of the program are set out in detail, for example in a syllabus that lists 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 has content validity because the items material used for teaching speaking in retell the past event of the tenth grade at SMAN 1 Ngunut. The content validity the test will be designed based on main competence and basic competence in syllabus Curriculum of 2013 the school implements the curriculum of 2013 in the time the researcher conduct this research.

Table 3.2

Main Competence and Basic Competence in Curriculum of 2013

Main Competence	Basic Competence
1.4. Cultivating, reasoning, and serving in the realm of concrete and abstract realms related to the development of the self-study in the school independently and able to use methods according to scientific rules.	4.7.2. Compose oral text of recount and simple write related historical events by paying attention to social functions, text structure, and linguistic elements correctly and contextually.

b. Construct validity

Construct validity is any theory, hypothesis, or model that attempts to explain observed phenomena in our universe of perception (Brown, 2004:25). It means that is an instrument to measure just the ability which supposed to measure. Language testing used in this research will appropriate with the theory of testing speaking. The testing speaking is used retell past event orally.

In giving scores to the students, the researcher will use analytic scale which categorized by some categories and the researcher follows these scoring criteria for each category. This analytic score has five items and each item scores five. So, the maximum score is 25, but it will be multiplied with 4. So the final maximum score will be 100.

In assessing students' speaking skill the researcher used scoring rubric (Brown, 2001:406-407).

Table 3.3
Scoring Rubric of Speaking Skill

No.	Elements of Speaking	Score	Criteria
1.	Grammar	1	Errors in grammar are frequent, but speaker can be understood by a native speaker used to dealing with foreigners attempting to speak his language.
		2	Can usually handle elementary constructions quite accurately but does not have thorough or confident control of the grammar.
		3	Control of grammar is good. Able to speak the language with sufficient structural accuracy to participate effectively in most formal and informal conversations on practical, social, and professional topic.
		4	Able to use the language accurately on all levels normally pertinent to professional needs. Errors in grammar are quite rare.
		5	Equivalent to that of an educated native speaker.
2.	Vocabulary	1	Speaking vocabulary inadequate to express anything but the most elementary needs.
		2	Has speaking vocabulary sufficient to express himself simply with some

			circumlocutions.
		3	Able to speak the language with sufficient vocabulary to participate effectively in most formal and informal conversations on practical, social, and professional topics. Vocabulary is broad enough that he rarely has to grope for a word.
		4	Can understand and participate in any conversation within the range of his experience with a high degree of precision of vocabulary.
		5	Speech on all levels is fully accepted by educated native speakers in all its features including breadth of vocabulary and idioms, colloquialisms, and pertinent cultural references.
3.	Comprehension	1	Within the scope of his very limited language experience, can understand simple questions and statements if delivered with slowed speech. Repetition or paraphrase.
		2	Can get the gist of most conversations of non-technical subjects.
		3	Comprehension is quite complete at a normal rate of speech.
		4	Can understand any conversation within the range of his experience.
		5	Equivalent to that of an educated native speaker.
4.	Fluency	1	No specific fluency description. Refer to other four language areas for implied level of fluency.
		2	Can handle with confidence but not with facility most social situation, including introductions and casual conversations about current events, as well as work, family, and autobiographical information.

		3	Can discuss particular interests of competence with reasonable ease. Rarely has to grope for words.
		4	Able to use the language fluently on all levels normally pertinent to professional needs. Can participate in any conversation within the range of this experience with a high degree of fluency.
		5	Has complete fluency in the language such that his speech is fully accepted by educated native speaker.
5.	Pronunciation	1	Errors in pronunciation are frequent but can be understood by a native speaker used to dealing with foreigners attempting to speak his language.
		2	Accent is intelligible though often quite faulty.
		3	Errors never interfere with understanding and rarely disturb the native speaker. Accent may be obviously foreign.
		4	Errors in pronunciation are quite rare.
		5	Equivalent to and fully accepted native speakers.

From the table above, the researcher made a rating scale to classify the result of score that each student got. The rating scale was consisted of score, grade, and criteria. It can be seen below:

Table 3.4
Rating Scale

No.	Range of Score	Grade	Criteria
1.	81 – 100	A	Excellent
2.	61 – 80	B	Good
3.	41 – 60	C	Enough/Fair
4.	0 – 40	D	Poor

c. Face validity

A test is said have face validity if it measures what is supposed to be measure. Face validity is hardly scientific concepts, yet it is very important a test which does not have face validity may not be accepted by test-takers, teachers, education authorities or employers (Brown, 2004:26). There are some considerations used in this study to have a good test based on the validity:

- 1) The instructions given to the students must be clear.
- 2) In this test the students asked to retell the past event. The students will choose the topic that the researcher given. This activity is suited with syllabus and their level.
- 3) The allotment is set definitively. The researcher gives 2-3 minutes for each student to retell the past event.

2. Reliability

According to Brown (2004:20) a reliable test is consistent and dependable, if students are given the same test on two different occasions, the test should yield similar result. Reliability is the characteristics of very good test for it to be valid. A test must be reliable as a measuring instrument. Moreover, Ary et al (2010:649) stated that reliability is the extent to which a measure yields consistent result. In other word, the reliability of a measuring instrument is the degree of consistency with which it measures whatever it is measuring.

In this research, the researcher was conduct tryout twice, tryout of pretest and tryout of posttest. The subject is same. But, the tryout is in different time and topic. The tryout of pretest was conduct on February 22nd 2018 and the tryout of posttest on February 24th 2018. The subject is 10 students which not the target of sample but they are the tenth grade of Senior High School 1 Ngunut.

To make sure instrument (test) are reliable, the researcher analyze the tryout's result of pretest and posttest used inter rater reliability involving two raters in checking the student's results of tryout's pretest and posttest. To make sure that the researcher measures the students' speaking skill, scoring rubric was used. While to achieve the reliability of the raters, the researcher was using the scoring rubric. Then, to find out the reliability, the researcher uses *Pearson Product Moment* formula to calculate the reliability level (Isnawati, 2011:20). The researcher analyzes using IBM SPSS 22.0 version. the result can be seen below:

Table 3.5

Correlations of Pretest (Try-out)

		Rater1	Rater2
Rater1	Pearson Correlation	1	.918**
	Sig. (2-tailed)		.000
	N	10	10
Rater2	Pearson Correlation	.918**	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 pretest the Sig value is 0.000, it is smaller than significant level at the 0.01. So, it means that the pretest of try-out is reliable.

Table 3.6

Correlations of Posttest (Try-out)

		Rater1	Rater2
Rater1	Pearson Correlation	1	.923**
	Sig. (2-tailed)		.000
	N	10	10
Rater2	Pearson Correlation	.923**	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 Sig value is 0.000, it is smaller than significant level at the 0.01. So, it means that the posttest of try-out is reliable.

F. Normality and Homogeneity Testing

1. Normality

Normality test is to determine whether the data from population normally or not. Normality test is done by the researcher after getting the result of pretest and posttest. The instrument or test can be called as having normality if Asymp Sig 0.05. So that Ho (Null Hypothesis) is accepted and Ha (Alternative Hypothesis) is rejected. The hypotheses for testing normality are:

- a) Ho: The data is in normal distribution
- b) Ha: The data is not in normal distribution

The result of normality test has computed by using SPSS 22.0 version. It can be seen as follow:

Table 3.7

One-Sample Kolmogorov-Smirnov Test

	Pretest_Cont rol	Posttest_Co ntrol	Pretest_Experi mental	Posttest_Experi mental
N	36	36	35	35
Normal Mean	60.00	60.00	61.37	65.71
Parameters ^a Std. .b Deviation	9.466	6.485	7.448	6.948
Most Absolute	.136	.139	.144	.140
Extreme Positive	.136	.139	.144	.140
Differences Negative	-.108	-.139	-.099	-.120
Test Statistic	.136	.139	.144	.140
Asymp. Sig. (2-tailed)	.091 ^c	.077 ^c	.062 ^c	.079 ^c

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

Based on the output from SPSS 22.0, it revealed that the significance value from pretest of control group was 0.091, posttest of control group was 0.077, pretest of experimental group was 0.062, and posttest of experimental group was 0.079. All value from pretest of control group, posttest of control group, pretest of experimental group, and posttest of experimental group were bigger than 0.05. The significance value on pretest of control group was 0.091 and it was bigger than 0.05

(0.091 > 0.05), posttest of control group was 0.077 and it was bigger than 0.05 (0.077 > 0.05), pretest of experimental group was 0.062 and it was bigger than 0.05 (0.062 > 0.05), and posttest of experimental group was 0.079 and it was bigger than 0.05 (0.079 > 0.05). It means that H_0 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.

2. Homogeneity

Homogeneity test is done to know the variance in population of research homogeneity or not. To know the homogeneity of the test, the researcher uses One Way Anova with SPSS. If the significance value is bigger than level of significant or 0.05, it means that the data pretest and posttest have homogeneity of variances.

Table 3.8

Test of Homogeneity of Variances (Pretest)

score

Levene Statistic	df1	df2	Sig.
2,156	1	69	,147

ANOVA

score

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	33,378	1	33,378	,459	,501
Within Groups	5022,171	69	72,785		
Total	5055,549	70			

Based on the result above the significance was 0.147. It means that the Sig was higher than 0.05 ($0.147 > 0.05$). So that it can be concluded that the samples or groups had the same variances.

Table 3.9

Test of Homogeneity of Variances (Posttest)

value

Levene Statistic	df1	df2	Sig.
,822	1	69	,368

ANOVA

value

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	579,477	1	579,477	12,844	,001
Within Groups	3113,143	69	45,118		
Total	3692,620	70			

Based on the result above the significance was 0.368. It means that the Sig was higher than 0.05 ($0.368 > 0.05$). So that it can be concluded that the samples or groups had the same variances.

G. Data Collecting Method

The data collecting method that used in this research is test. Brown (2001:384) states that test is a method of measuring a person's ability or knowledge in a given domain.

1. Pretest

Pretest is a test which is conducted before given a treatment to the students. It was given to both experimental group and control group. Pretest was needed to know the basic competence for the students and how far they known about the subject that would be taught.

In this research, the researcher gave pretest on Saturday, March 3rd 2018 at 08.30 to 10.00 of experimental group or class for X MIPA 3 and on Tuesday, March 6th 2018 at 07.00 to 08.30 of control group or class for X MIPA 2. The pretest was given to the students at the first meeting. It was administered to know the students' speaking score before being taught by using Bamboo Dancing Technique. The pretest asked the students to retell their past event based on the topic given. The researcher gave four topics and the students were choosing one of them and retell those stories of 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 story. After administering the test, the researcher scored the students' speaking based on the scoring rubric of speaking skill.

2. Treatment

Treatment was given to the students in teaching speaking skill. It purposed to know the students' ability in speaking skill after giving treatment. So, treatment is new technique by the researcher that can be accepted by the students or not.

The researcher conducted treatment on experimental group for three meetings, exactly from Saturday, March 10th 2018 at 08.30 to 10.00 and continued at 14.15 to 15.45. For the last meeting of the experimental group conducted on Saturday, March 24th 2018 at 08.30 to 10.00. In the beginning of study, the researcher introduced about Bamboo Dancing Technique to students and explains of the recount text lesson. Although they have not known about Bamboo Dancing Technique before, when the researcher explained Bamboo Dancing Technique and its steps, they understood quickly. Also, when the researcher asked them to apply this strategy, they were very enthusiastic.

While for the control group, the researcher did not provide the treatment of Bamboo Dancing Technique for three meetings, exactly from Tuesday, March 13th 2018 at 07.00 to 08.30 and continued at 14.15 to 15.45. For the last meetings of control group conducted on Tuesday, March 20th 2018 at 07.00 to 08.30. In the beginning of study, the researcher introduced about group that would be conduct on that class and also the researcher explains about the recount text lesson. She 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 story they discussed. The story was taken from one of the stories of members of their group.

3. Posttest

After giving pretest and treatment, the researcher gave the posttest. Posttest was one kind of test which given after gaining the score in pretest

and conducting treatments. It was purpose to known the result of the new technique given is there effective or not.

In this research, the researcher gave posttest on Saturday, March 31st 2018 at 08.30 to 10.00 of experimental group or class for X MIPA 3 and on Tuesday, March 27th 2018 at 07.00 to 08.30 of control group or class for X MIPA 2. The posttest was given to the students at the last meeting. It was administered to know the students' speaking score after being taught by using Bamboo Dancing Technique. In posttest, the researcher gave a bit different in the topic. The posttest asked the students to retell their past event based on the topic given. The researcher gave four topics and the students were choosing one of them and retell those stories of 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 story. After administering the test, the researcher scored the students' speaking based on the scoring rubric of speaking skill.

H. Data Analysis

The analysis of data was used to analyze and calculate data from the students' speaking score through Bamboo Dancing Technique. 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 Bamboo Dancing Technique and without taught using Bamboo Dancing Technique. 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 22.0 version.

I. Hypothesis Testing

The hypothesis testing is used to test the hypothesis of the research. This research used standard significance 95% ($\alpha = 0.05$) to test the hypothesis. The hypothesis testing of this research is as follows:

1. H_0 (Null Hypothesis) states that students who are taught by using Bamboo Dancing Technique in teaching speaking do not have better score than those students who are taught without using Bamboo Dancing Technique in teaching speaking of the tenth grade at SMAN 1 Ngunut.
2. H_a (Alternative Hypothesis) states that students who are taught by using Bamboo Dancing Technique in teaching speaking have better score than those students who are taught without using Bamboo Dancing Technique in teaching speaking of the tenth grade at SMAN 1 Ngunut.