

CHAPTER III

RESEARCH METHOD

This chapter presents the researcher method. It is focused on research design, population and sample, research instrument, validity and reliability, normality and homogeneity, data collecting and data analysis.

A. Research Design

The researcher used quantitative approach to conduct the research, the design that the researcher was going to use is experimental research design. It meant that the researcher manipulates one or more independent variables, control any other relevant variables, and observed the effect of the manipulations on the dependent variables.

They were independent variable (X) that refers to the use of strip-story technique and (Y) refers to students' speaking ability as dependent variable. The goal of experimental research is to determine whether a casual relationship between two or more variables. In conducting this research, the researcher used two classes. The first class was used as experimental class (X) which was treated by strip-story technique and another class as a control class (Y) was treated without strip-story technique. Both of two classes were given pre-test and post-test, but only the experimental class was treated by using strip-story technique. According to Ary et al. (2010:316) non randomized control group pre-test, post-test design was one of the most widely used quasi-experimental design in educational research.

Table 3.1 Two group pre-test and post-test design

Group	Pre-test	Independent variable	Post-test
E	y1	x	y2
C	y1	-	y2

Experimental Group y1 — x — y2

Control Group y1 ————— y2

Y1 = Pre-test

Y2 = Post - test

X = Treatment by using strip-story technique.

B. Population and Sample

a. Population

A population is a group of individuals who have the same characteristic. In this quantitative research, sample takes from list and students attendance. A target population (or the sampling frame) is a group of individuals (or a group of organizations) with some common defining characteristic that the researcher can identify and study. Population is all members of any well-defined class of people, events or objects (Creswell, 2008). The population used to conduct this research was the tenth graders of SMAN 1 Rejotangan Tulungagung in the academic year of 2017/2018. There were nine classes in the tenth grade: XA, XB, XC, XD, XE, XF, XG, XH, XI and each class consisted of 25 until 27 students.

b. Sample

In this research used the sample of two classes, the researcher selects XA and XB classes. And then, XA as a control class and XB as an experimental class. That were chosen as the sample by using the purposive sampling technique in choosing the class. Purposive sampling was a research sample done by taking some subject based on a certain purpose by considering limited time, energy and cost so that was out of the range (Sugiyono, 2009:133-136).

C. Research Instrument

In this study the researcher used test as instrument, the type of a test is oral test. Oral test was used to collect the data about students' speaking ability. The researcher applied pre-test and post-test. The test was given before and after teaching by using strip-story technique.

a. Pre-test

Pre-test was used to collect the data about students' speaking ability before getting treatment for experimental class and without treatment for control class. The test was administered to the students at the tenth grade of SMAN 1 Rejotangan. The researcher gave the pretest to the students to tell the story about The Mousedeer and Crocodile without using strip-story technique.

b. Post-test

Post-test was used to collect the data about students' speaking ability after getting treatment for experimental class and without treatment for control class. The test was administered to the students at the tenth grade of SMAN 1 Rejotangan. The data of this research were collected by used pretest and posttest. Posttest was given after all treatment were conducted.

D. Validity and Reliability Testing

1. Validity

According to Ary, et al (2002: 242) validity is the most important consideration in developing and evaluating measuring instruments. The researcher used validity to know whether the research instrument was valid or not. The measure whether the test has a good validity, the researcher analyzed the test from content validity, construct validity and face validity.

a. Content validity

Content validity refers to degree to which an instrument sample the subject matter in the area to be measure or the degree to which it considers with instructional objective that are to be measured. High content validity that there is a good match between test question and instructional objective covers in the class and also specific to the particular situation and purpose that is being used. So, the researcher can conclude that the test are valid in content validity because the materials are tested have been taught to the students. The researcher

took the material and the items test which was given to the students from students work book.

The researcher made this test based on the course objective in the syllabus of second semester of SMAN 1 Rejotangan. Therefore, this is valid in term of content validity.

Table 3.2. Content validity of narrative text

Main 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.
Basic Competence	4.8 Comprehend contextually meaning related to social function, text structure, and linguistic elements of narrative text, oral and simple writing related to legend story.
Indicator	- Students are able to communicate purpose, text structure and language features of narrative texts. - Students are able to describe the contents of narrative texts. - Students are able to do a short monologue in the form of narrative.
Technique	Oral test
Instrument of test	Pretest Posttest

b. Construct validity

Brown (2004:25) mentioned that a construct validity was any theory, hypothesis, or model that attempts to explain observed phenomena in our universe of perception. It means that it was a instrument to measure just the ability which supposed to measure. In this study, to know the students' speaking ability, the researcher tested

students' speaking ability used retelling narrative story orally. Meanwhile, the technique of scoring the speaking ability based on the five component of speaking; they are vocabulary, grammar, comprehension, fluency, and pronunciation.

In this study, scoring rubric adapted from Brown (2001) as cited in Brown (2004 : 172-173). They were as follows :

Table 3.3. Scoring Rubric of Speaking

No.	Element 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.

c. Face validity

Face validity becomes one of the validity types that can be established. Validity was measurement that showed the level of the instrument (Arikunto; 1998:160). Face validity is very important. A test which does not have face validity may not be acceptable by test-takers, teachers, education authorities, and employers. The researcher used face validity by consulting with the advisor and teacher to validate the test.

2. Reliability

Reliability refers to consistency of score obtained by the same persons when they are re-examined with the same test on the different occasion or with different sets of equivalent items. Validation in this research as the result was taken from SPSS 23.00 as follow:

Reliability Statistics	
Cronbach's Alpha	N of Items
.802	2

The results of calculations using SPSS 23.00 on the reliability test was 0.802. According to Triton (cited in Ningsih: 2015) the value of cronbach's alpha can be interpreted as follow:

Cronbach's Alpha	Interpretation
0,00-0,20	Less Reliable
0,21-0,40	Rather Reliable
0,41- 0,60	Quite Reliable
0,61 -0,80	Reliable
0,81 – 1.00	Very Reliable

When the reliability score compared with the category of value, reliability calculation result is in the range of values from 0.61 to 0.80 in accordance with the categories of reliability of the results of those values are reliable.

E. Normality and Homogeneity Testing

1. Normality Testing

The formula, that was used, was Chi-square. The computation result of Chi-square (X^2_{score}) then was compared with table of Chi-square (X^2_{table}) by using 5% alpha of significance. If $X^2_{table} \leq X^2_{score}$ meant that the data spread of research result distributed normally.

$$X^2 = \frac{\sum (\sigma - e)^2}{E}$$

Where:

$$df = (b-1) (k-1)$$

2. Homogeneity Testing

Test of homogeneity was done to know whether sample in the research come from population that had same variance or not. In this research, the homogeneity of the test was measured by comparing the obtained score (F_{score}) with F_{table} . Thus, if they obtained score (F_{score}) was lower than the F_{table} or equal, it could be said that the H_0 was accepted. It meant that the variance was homogeneous. The computation of the test of homogeneity as follows:

$$F = \frac{\text{variance smallest}}{\text{variance biggest}}$$

F. Data Collecting Method

In this research, the researcher used test as the data collection. The test would be in the form of speaking test to see different result of students' speaking ability who being taught by using strip-story technique and without using strip-story technique. The researcher would give pre-test and post-test to both of experimental and control group.

a. Pre-test

In the pre-test the researcher administered test in which time allocation of the test was 60 minutes. The pre-test hold on March 13th of experimental class or X-B and control class or X-A. In pretest, the researcher gave the story about about The Mousedeer and Crocodile. Then the researcher asked to the students to tell the story in 2-3 minutes in each students.

b. Post-test

In the pre-test the researcher administered test in which time allocation of the test was 60 minutes. The pre-test hold on April 17th of experimental class or X B and control class or X A. It was purposed to know the result of the new technique given is effective or not. The posttest was given to the students at the last meetings. It was administered to know the students' speaking ability score after being taught by using strip-story technique.

G. Data analysis

To analyze the students' score post-test, the researcher used Pearson Product Moment Formula to calculate the data. It is done by compilation each score with the total scores (Riduwan, 1997: 123). The researcher uses a quantitative data analysis technique. The quantitative data of this research is analyzed by using statistical method. The data collected were processed by comparing the data from pre-test and post test. This technique was used to find the significant difference on the students' achievement after being taught by using strip-story as technique. To know the significant differences, researcher used SPSS 23.00 for windows.