CHAPTER III

RESEARCH METHOD

This chapter discussed the research design and method, subject of the study, research instrument, variable, validity and reliability testing, normality and homogeneity test, data collection, data analysis and scoring rubric.

A. Research Design

In this research, the researcher conducts quantitative research through pre-experimental design with one group pretest posttest. The writer conducts pre-experimental design because pre-experimental design has little or no control of extraneous variable. According to Ary,et al (2010:303) This design involves only one group as its subject and it involves three steps: pretest, treatments, and posttest. The design of this research can be seen at the table below:

Table 3.1 The design of one-group pretest posttest

Pretest	**treatments**	**posttest**
Y_1	X (independent variable)	Y_2 (dependent variable)

The procedures of pre-experimental research that use one-group pretest posttest design:

1. Administering a pretest before applying strategy media with a purpose of measuring on the students' writng achievement of first grade at AL Azhaar Islamic Junior High School Tulungagung.

2. Applying the experimental treatment teaching writing by using comic strips as a strategy media to the subject of first grade at Al Azhaar Islamic Junior High School Tulungagung.
3. Administering a posttest after applying strategy media with a purpose of measuring on the students' writing achievement.

This research is intended to investigate the effectiveness of using comic strip on the students' writing achievement of first grade at Al Azhaar Islamic Junior High School in academic year 2016/2017. The use of treatment is aimed at proving whether the better scores possibly got by the researcher. Thus, the effectiveness of that treatment will be known the significant score when the students taught using comic strip.

B. Subject of the Study

1. Population

A population is a group of elements or case, whether individuals, objects, or events, which according to certain criteria and where research result are common, in this case, the population of this research is first grade of Al Azhaar Islamic Junior High School Tulungagung that have total 134 students.

2. Sample and Sampling

A sample is a group in research study on which information is obtain. Because the population of the study is big and in other that students undisturbed, the researcher chooses the cluster random sampling in determining the sample of the study. This technique is similar to simple random sampling, but simple random sampling used individual selected, cluster random sampling used class

selected. In it, the subjects were regarded that each of them has the equal chance to be chosen as the sample. This is the effective way of determining the sample of the study. The researcher will use one class to conduct this research, that is class VII E that has total 25 students.

C. Research Instrument

Research instrument is tool of collecting data that should be valid and reliable. According to Arikunto (2006:149) the device of the researcher use to collect data is called instrument. Instrument has important function in this research. The main instrument used in this study is test. The instruments used to get data are test and try out. The explanation about them discussed below:

1. Test

Arikunto (2006:150) states that "test is a series question, exercise or other means which are used to measure the skill, knowledge, intelligent, ability or talent that have by individual or group". In this research, the researcher used pretest and posttest. The material of the test is taken from English book which related to their subject and based on junior high school curriculum. This test used to measure on the students' writing achievement before and after they taught by using *comic strip* in Al Azhaar Islamic Junior High School Tulungagung.

Speaking tests were done to obtain the information about the students' writing skills before and after the implementation of comic strip in the teaching and learning process of writing. The tests were done twice, in the forms of pre-test and post-test. The researcher used writing rubrics to assess the scores of the

students' writing test. The results of the test were used to see whether there were improvements after the actions or not.

a. Pre Test

Pretest was administering before the students were taught using comic. Pretest is needed to know how far the students' writing comprehension ability before taught using comic strip. The score were analyzing to determine the students' score between pretest and posttest.

b. Post Test

The researcher administered posttest to measure their ability after treatment process, this test given to know the basic competence for student and to know theory earlier knowledge after they get treatment. It is done to know the final score and to know the student difference achievement before and after they treatment.

2. Try Out

In this research, the researcher conducted the try-out before the test. According to Arikunto (2006), The result of try out can be used to measure the validity and the reliability of the test, and it can be carried out in either a small number or a large number. Before the test give to the students, the researcher conduct the reliability test to know the test reliable or not. The researcher examines the test once. The respondents are 10 students VII Grader of Al Azhaar Islamic Junior High School.

D. Variable

All experiments have one fundamental idea behind them; to test the effect of one or more independent variables on a dependent variable. This research, that used comic strip as method in teaching writing, had two variables. Those variables were:

1. The Independent Variable

The independent variable is the major variable which the researcher hopes to investigate. It is the variable which is selected, manipulated, and measured by the researcher. The independent variable of this research was the using comic strips.

2. The Dependent Variable

The dependent variable, on the other hand, is the variable which the researcher observe and measure to determine the effect of the independent variable. The dependent variable of this research was improvement students' writing achievement.

E. Validity and Reliability Testing

According to Donald Ary (1985:213) research is always dependent upon measurement. There are two important characteristic that every measuring instrument should passes: validity and reliability. Before using these test, a try out to 10 students to find out the validity and reliability of the test.

1. Validity

The most complex criterion of an effective test and the most important principle of language testing is validity. It is the extent to which inference made

from assessment result is appropriate, meaningful, and useful in term of the purpose of the assessment. It states by Groundlund in Brown (2004:22). According to Heaton (1988:159) validity of the test is the extent to which it measures what it is supposed to measures and nothing else.

In this test, the researcher asked the students to describe a picture to measure the students' writing achievement. The researcher made this test based on the course objectives in the syllabus of first grade of Al Azhaar Islamic Junior High School. Therefore this test is valid in term of content validity. The content validity in this research can be showed as follow:

Table 3.2 Content Validity

No.	**Competence Indicators**
1.	Students are able to control the structure of the sentences.
2.	Students are able to use and choose the best words and the use of idioms and also the word form.
3.	Students are able to spell words and use right punctuation.
4.	Students are able to state the main idea clearly and accurately.
5.	Students are able to organize the paragraph well and coherent.

2. Reliability

Based on Horizon (1983:10) the reliability of the test is its consistency. Thus, reliability is a measure of accuracy, consistency, dependability, or fairness of scores resulting from administration of particular examination. According to Heaton (1988:162) reliability is a necessary characteristic of any good test: for it to be valid at all, a test must first be reliable as a measuring instrument. Ary

(2002:250) states that reliability is concerned with the effect of such random errors of measurement on the consistency of scores.

In this test, the researcher used try out test where the researcher examines the test once. After that, the researcher analyze the scores by using Pearson correlation which is called product moment Pearson. For analyzing the correlation the researcher uses SPSS 20.0 for windows. From the analyzing, the researcher got the correlation of the score. The value of correlation is 0.825 it means that the score is strong. it was found that this test is reliable. The raw score can be seen at the appendix.

F. Normality and Homogeneity Test

Normality test are used to determine whether a data set is well-modeled by a normal distribution or not, or to compute how likely an underlying random variable is to be normally distributed. Normality test is intended to show that the sample data come from a normally distributed population.

To know the normality, the researcher used *One-Sample Kolmogorov-Smirnov test* with SPSS 20.00. The hypotheses for testing normality are:

a. Ho : Data is in normal distribution

b. Ha: Data is not in normal distribution.

Critic area is in which H_0 is rejected when the significance value is lower than 0.05 ($\alpha = 5\%$). The analysis is as follows:

One-Sample Kolmogorov-Smirnov Test

		pre_test	post_test
N		25	25
Normal Parameters[a,b]	Mean	19.92	23.24
	Std. Deviation	2.235	1.763
Most Extreme Differences	Absolute	.140	.166
	Positive	.100	.159
	Negative	-.140	-.166
Kolmogorov-Smirnov Z		.701	.829
Asymp. Sig. (2-tailed)		.709	.497

a. Test distribution is Normal.

b. Calculated from data.

Based on the output from SPSS 20 is known that the significance value from pretest 0.709 and from the posttest is 0.497. both of the value are bigger than 0.05. The significant value on pretest is 0.709 and it is bigger than 0.05 (0.709>0.05). It means that Ho is accepted and Ha is rejected and the data is in normal distribution. Then, for posttest score the value of significant is 0.497 and that is bigger than 0.05 (0.497>0.05). It also means that Ho is accepted and Ha is rejected and the data is in normal distribution. So, it can be interpreted that both of data (pretest and posttest score) are normal distribution.

G. Data Collection

To know the effectiveness of comic strip technique in this quantitative research, the researcher used test as the instrument to get the data through writing test. There were three kinds of data collection that used by the researcher.

1. Pre-test

It was delivered at the first time before the researcher applied the treatment in the class. In the writing pre-test participants were asked to write some sentences

without using comic strip technique and process to know students skill in writing and determine baseline data before the intervention.

2. Treatment

It was delivered after doing the pretest. The treatment would be conduct in the class. The treatment was conduct in 13th April 2017. In the writing treatment, the researcher gives some material about the topic they learn by using the form of comic strip. Here is the steps of the treatment:

Table 3.3 Steps use Comic Strip in Teaching Writing

No.	Steps	Teacher Activities	Students Activities
1.	Opening	greeting	• Answer greeting • Brain storming
2.	Main Teaching	Introducing comic strips as the writing material and explaining about narrative text	• Pay attention
		Giving explanation about comic strips as the writing material ➢ Give comic strips to the students ➢ Read the comic strips and explain difficult words ➢ Giving explanation about grammar and how to organize short story	• Listening the explanation from the teacher
		To command the students write a simple paragraph according to the comic strip.	• Write a paragraph according to the comic strip.
		Giving question related to the comic strips.	• Answer the question from the teacher
3.	Closing	Asking the students about the story of the comic strip.	• Answer the question from the teacher

3. Post-test

Post-test was held as the final test after the researcher applied the treatment. It is used to see whether the comic strip effective in students writing ability or not. The writing post-test was administered to evaluate overall growth, skill area development, measure the scopes of the intervention and compare gains within the population in order to establish how successful participant had been in relation to the expected effects.

G. Data Analysis

In managing and analyzing the data collected, the researcher will use quantitative data analysis, the gathered data are used to find out the differences of students' achievement in pre test and post test. In this study, the researcher uses statistic calculation through *t-test* formula in SPSS (Statistic Product and Statistic Solution). It is used to examine the significance difference of students' speaking ability between pre test and post test. The formula of t-test as follow (Sudijono, A. 2006:314).

$$t_0 = \frac{M_1 - M_2}{SE_{m1-m2}}$$

Notes:

M1 = Mean of Variable X (pre test)

M2 = Mean of variable Y (post test)

SE = Standard Error

1. Determining Mean of variable X, with formula

$M_1 = \frac{\Sigma X}{N1}$

2. Determining Mean of variable Y, with formula

$M_2 = \frac{\Sigma X}{N2}$

3. Determining Standard of Deviation Score of Variable X, with formula:

$SD_1 = \sqrt{\frac{\Sigma X1}{N1}}$

4. Determining Standard of Deviation Score of Variable Y, with formula:

$SD_2 = \sqrt{\frac{\Sigma X2}{N2}}$

5. Determining Standard Error Mean of Variable X, with formula:

$SE_{M1} = \frac{SD1}{\sqrt{N1}-1}$

6. Determining Standard Error Mean of Variable Y, with formula:

$SE_{M2} = \frac{SD2}{\sqrt{N2}-1}$

7. Determining Standard Error of different Mean of Variable X and Mean of Variable Y, with formula

$SE_{M1-M2} = \sqrt{SE_{M1}^2 + SE_{M2}^2}$

8. Determining to with formula:

$t_o = \frac{M1-M2}{SE\ M1-M2}$

9. Determining Degrees of Freedom (df), with formula

$df = (N1 = N2)-2$

The writer's assumption of those hypotheses are as follow:

1. If t_{count} > significance level, the Null Hypothesis (Ho) is rejected and alternative hypothesis (H_1) is accepted. It means there is a significant difference of students' writing ability between students before taught through comic strip and after taught through comic strip.
2. If t_{count} < significance level, the Null hypothesis (Ho) is accepted and alternative hypothesis (H_0) is rejected. It means there is no a significant difference of students' writing ability between students before taught through comic strip and after taught through comic strip.

H. Scoring Rubric

In obtaining reliable scoring of writing, the process of scoring can be done either holistically or analytically. Holistic scoring involves the assignment of a single score to a piece of writing on the basis of an overall impression on it. This kind of scoring has the advantages of being very rapid. Method of scoring which require a separate score for each of a number of aspects of a writing task is said to be analytic.

The researcher decide to use analytic scoring to assess students writing achievement. Scoring for writing will be valid and reliable only if clearly recognizable and appropriate descriptions of criteria levels are written and scorers are trained to use them. Description of writing proficiency usually deals with

grammar, vocabulary, mechanics, content, and organization as in the table which taken from Cohen (1994:328).

No.	Criteria	Level	Note	Score
1.	Grammar	Excellent	No errors, full control of complex structure	5
		Good	Almost no errors, good control of structure	4
		Average	Some errors, fair control of structure	3
		Poor	Many errors, poor control of structure	2
		Very Poor	Dominated by errors, no control of structure	1
2.	Vocabulary	Excellent	Very effective choice of words and use of idioms and word form	5
		Good	Effective choice of words and use of idioms and word form	4
		Average	Adequate choice of words but some misuse of vocabulary, idioms and word forms	3
		Poor	Limited range, confused use of words, idioms, and word forms	2
		Very Poor	Very limited range, very poor knowledge of words, idioms, and word forms	1
3.	Mechanics	Excellent	Mastery of spelling and punctuation	5
		Good	Few errors in spelling and punctuation	4
		Average	Fair number of spelling and punctuation errors	3
		Poor	Frequent errors in spelling and punctuation	2
		Very Poor	No control over spelling and punctuation	1
4.	Content	Excellent	Main ideas stated clearly and accurately, change of opinion very clear	5
		Good	Main ideas stated fairly clearly and accurately, change of opinion relatively clear	4
		Average	Main ideas somewhat unclear and inaccurate, change of opinion somewhat weak	3
		Poor	Main ideas not clear or accurate, change of opinion weak	2
		Very Poor	Main ideas not at all clear or accurate, change of opinion very weak	1
5.	Organization	Excellent	Well organized and perfectly coherent	5
		Good	Fairly well organized and generally coherent	4
		Average	Loosely organized but main ideas clear, logical but incomplete sequencing	3
		Poor	Ideas disconnected, lacks logical sequencing	2
		Very Poor	No organization, incoherent	1
TOTAL SCORE				25