CHAPTER III

RESEARCH METHOD

This chapter contains the description of the method employed in the research. The description covers research design, population and sample, research instrument, validity, and reliability testing, data collecting method, and data analysis.

A. Research Design

This research used quantitative research. Quantitative research is explaining phenomena by collecting numerical data that are analyzed using mathematically based methods in particular statistics (Aliaga and Gunderson in Mujis, 2004 : 1)In this research, the researcher used the experimental research. According to Ary at all (2010:26) experimental research involves a study of the effect of the systematic manipulation of the variable on another variable. The manipulated variable is called the experimental treatment or the independent variable. The observed and measured variable is called the dependent variable.

There are many kinds of the experimental. According to Sukmadinata (2013:203) there are many kinds of the experimental, such as true experimental, quasi experimental and pre experimental.In this study, the researcher uses Quasi-experimental research. Ary (2010:648) states 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.

This research is classified into Quasi-experimental research that uses nonrandomized control group, pretest-posttest design. In this design, the researcher evaluate the experimental group before and after given a treatment. Meanwhile, the other class stand as control group and isolated from the treatment. The purpose of the teacher using quasi experimental research as a design because the researcher to know different effect of the treatment between the experimental classes that was taught teaching by using picture books and control classes which was taught without using picture books. The illustration of the research design in this study is as the table below :

Table 3.1 Nonrandomized Control Group Pretest-Posttest

Group	Pretest	Independent Variable	Posttest
E	Y1	X	Y2
F	Y1		Y2

(Taken From Ary, 2010:316)

Where;

E : Experimental group

F : Control group

Y_1 : Pretest for both of groups

X : Treatment for experimental group (using picture books)

Y_2 : Posttest for both of groups

B. Population, Sample, and Sampling

1. Population

A population, according to Ary (2002:162-163) is all members of any well defined class of people, events, or object. It means that the population is a group of subjects, it can be person or things, to whom or which the findings of the research are to be applied. In according to the topic of the research, the population of this research is second grade students of Junior High School 3 KedungwaruTulungagung in academic year 2017/2018, which consists of ten classes (A-J). Each class consist around 31 students. Therefore, the total numbers of the second grade students of Junior High School 3 Kedungwaru are 310 students.

2. Sample

Selecting sample is very important step in conducting a research. According to Ary, at.al (2010:149) the small group that is observed is called a sample and the larger group about which the generalization is made is called a population. A sample is a portion of a population. It means that a good sample must represent the entire populations as good as possible, so that the generalization of the sample as true as population. The researcher took the sample from E and F classes of the second grade students of Junior High School 3 Kedungwaru. E class is as an experimental group and F class as a control group. The experimental group consists of 32 students. Then, the control group consists of 31 students.

3. **Sampling**

The researcheruses purposive sampling technique to choose the sample. According to Ary et al (2010:648), purposive sampling is a nonprobability sampling technique in which subjects judged to be representative of the population are included in the sample. Purposive sampling technique is the way to choose the sample with a certain criteria or reason. The researcher used purposive sampling by consideration of students' achievement in English subject. In this study, the researcher chooses two classes that the students have moderate or average ability in English. It was based on the English teacher suggestion. Moreover, the researcher also felt that it was appropriate with needed.

4. **Research Variable**

Anything that has quantity or quality that varies is usually called as a variable. Santrock (2004:47) explained that a variable is the characteristic or attribute of individual, group, or educational system that researcher is interested in. There are two types of variables that are independent and dependent variable.

1. Independent variable is a factor that affects a dependent variable. In this study, the independent variable is picture books.

2. Dependent variable is a variable which is observed and measured to determine the effect of the independent variable. The dependent variable is this study was students' reading ability in narrative text.

C. Research Instrument

According to Arikunto (2010:262), research instrument refers to any equipment used to collect the data. The instrument used in this study is test. It is because this study is an experimental research. 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).

There are two kinds of tests for this study, they are pretest and posttest. Pretest is used to measure students' reading ability before the treatment was given, while posttest is to measure students' reading ability after the treatment was given. The total items of the test are 25 in the form of multiple choice test. Moreover, there is only one correct answer for each items of the test.

The instrument used to get to data is test and try out. The explanation about them discussed in 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 byinvidual 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 with the subject the narrative text. This test used to measure on the student's reading achievement before and after they taught by using picture bookin SMPN 3 Kedungwaru.

For testing reading skill can be done by using some techniques. They are multiple choice, true/false, completion, short answer, guided short

answer, summary cloze, information transfer, identifying referents, guessing the meaning of unfamiliar words from context (Ida Isnawati, 2012: 40). Based on the variety of the techniques, the researcher choose multiple choice and true false because the scoring can be perfectly reliable, also be rapid economical, and it is easy to administer for test-takers.

2. Pre-test

The researcher gave pre-test on March, 20st 2018. Pretest was administrating before the students were taught using picture book. Pretest is needed to know how far students' reading comprehension ability before taught using picture books. The score were analyzed to determine the students' score between pretest and posttest. The test of pretest is 25 items multiple choice about narrative text. Time allocation of the test is 45 minutes.

3. Post-test

The researcher, the researcher administered posttest on March, 27st 2018. 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 treatment. The test of posttest is 25 items multiple choice about narrative text with picture books. Time allocation of the test is 45 minutes.

4. Try Out Test

In this research, the researcher conducted the try-out on February before the test. "The result of try out can be used to measure the validity and reliability of the test, and it can be carried out in either a small number or a large number" (Arikunto,2006). Before the test give to the students, the researcher conduct the reliability of test to know the test reliable or not. The researcher examine the test twice with the same despondence in the different time. The respondent is 32 students of SMPN 3 Kedungwaruof VIII E.

D. Validity and Reliability Testing

1. Validity Testing

The instrument that is used by the researcher must be able to be used to measure what will be measured, so it has to be valid.(Ary, et.al, 2010:225). Fraenkel and Wallen (2009:147) give addition that validity is the most important idea to consider when preparing or selecting an instrument for use. More that anything else, researchers want the information they obtain through the use of an instrument to serve their purposes. The drawing of correct conclusions based on the data obtained from an assessment is what validity is all about.

There are four types of validity; content validity, criterion-related validity, constructs validity, and face validity. In this study, the instrument tested by using *content validity, face validity, and construct validity* because those are relevant with this research

a. **Content validity**

Content validity contains of contents and format of the instrument. A test must be related with curriculum and the material which is used by the researcher when do the treatment. In this test, the researcher uses narrative text. Therefore, this test is made by the researcher based on the syllabus of the second grade of Junior High School 3 Kedungwaru on the second semester before doing the treatment.

Table 3.2 Matrix of Content Validity

Standart Competence	Basic Competence	Indicators	Items Number
1.1 Understanding the content of the simple short functional text in the form of recount and narrative text to interact with the environmental.	1.1.3 Responding the meaning and the rhetorical step in the written text correctly, accurately, and politely relate with daily life to interact with the environment in the form of recount and narrative text.	1. Students are able to find the main idea of narrative text and the supporting details of the main idea. 2. Students are able to find the main idea of narrative text and the supporting details of the main idea. 3. Students are able to categorize the text based on the	**1-25**

		kinds of narrative text.	
		4. Students are able to classify each paragraph based on the generic structure of narrative text.	
		5. Students are able to know how to use the process of reading to determine the elements of narrative text	
		6. Students are able to indicate how the use of simple past tense, adverb of time, and action verbs in narrative text.	

From the explanation above, it could be concluded that the test is

valid in term of content validity.

b. Face Validity

The test is said to have face validity if it measures what is

supposed to measure. This research was done to know the effectiveness of

using picture books to increase the student's ability in reading, so the test

should in the form of reading test. Related to this research, the researcher

asked the students to read the picture books with kind of narrative text. It showed that the test was valid based on face validity.

c. **Construct validity**

Construct validity of a test as the extent to which a test is measuring the psychological construct it is intended to measure. Specifically, construct validity of experiments is defined as the validity of the inferences made about a construct based on the measures, treatment, subjects, and settings used in an experimental study. In this research, the test had high construct validity since it contained prompt in form of guided instructions to measure students' skill in reading a narrative text.

Besides, the researcher tried to check the empirical validity by using SPSS 21.0 after trying out the instrument (pre-test and post-test). In this research, the researcher used SPSS 21.0 for windows to know the validity of test instruments. It can use corrected item-total correlation formulation. The criteria of validity of the instrument can be divided into 5 classes as follows (Ridwan: 2004);

1. If the *item-total correlation* score 0.00 – 0.20: less valid

2. If the *item-total correlation* score 0.21 – 0.40: rather valid

3. If the *item-total correlation* score 0.41 – 0.60: enough valid

4. If the *item-total correlation* score 0.61 - 0.80: valid

5. If the *item-total correlation* score 0.81 – 1.00: very valid

In this test, the researcher asked students to read the story to measure students' ability in reading. The researcher made this test based on thecourse

objectives in the syllabus of second grade students of Junior High School 3 Kedungwaru.

Table 3.3 Result of Validity- List of r_{count} of the Test Items

Item Number	r_{table}	r_{count}
1	0,349	0,428
2	0,349	0,654
3	0,349	0,695
4	0,349	0,641
5	0,349	0,507
6	0,349	0,633
7	0,349	0,567
8	0,349	0,552
9	0,349	0,725
10	0,349	0,567
11	0,349	0,536
12	0,349	0,542
13	0,349	0,695
14	0,349	0,725
15	0,349	0,507
16	0,349	0,633
17	0,349	0,567

18	0,349	0,695
19	0,349	0,725
20	0,349	0,542
21	0,349	0,428
22	0,349	0,654
23	0,349	0,695
24	0,349	0,408
25	0,349	0,542

7. **Reliability testing**

Ary, et.al (2010:236) stated that reliability of a measuring instrument is the degree of consistency with which it measureswhatever it is measuring. This quality is essential in any kind of measurement. On a theoretical level, reliability is concerned with the effect of error on the consistency of scores.

Reliability is the consistency of the instrument in producing the same score on different testing occasions or with different raters. To get reliable the researcher used inter-rater reliability. Inter- rater reliability is achieved when two scorers or two raters do the scoring (Isnawati: 23). Two rater in this research were the English teacher and the researcher herself. This research, the researcher also used SPSS 16.0 for window to know the reliability of test instruments.The criteria of reliability

instrument can be divided into 5 classes as follows as follows (Ridwan : 2004), those are:

1. If the *cronbachalpha* score 0.00 – 0.20: less reliable

2. If the *cronbachalpha* score 0.21 – 0.40: rather reliable

3. If the *cronbach alpha* score 0.41 – 0.60: enough reliable

4. If the *cronbachalpha* score 0.61 - 0.80: reliable

5. If the *cronbachalpha* score 0.81 – 1.00: very reliable

In this research, the researcher uses SPSS 21.0 for window to know the reliability of test as instruments intended to use. The result of reliability testing by using SPSS 21.0 can be seen from the table:

Table 3.4 Result of Reliability

Case Processing Summary

		N	%
Cases	Valid	32	100.0
	Excluded[a]	0	.0
	Total	32	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.750	26

Based on the table above, that the test can said reliable or not can be seen through Cronbach's alpha. The score of Cronbach's alpha 0,750 it's means reliable.

E. 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 researcher uses One-Sample Kolmogorov-Smirnov test by using SPSS 21.0 version to know the normality. The determination of testing is if the probability or Asymp. Sig. (2-tailed) higher than level of significant or 0.05, it means that the test distribution is normal.

Table 3.5 The Result of Normality

One-Sample Kolmogorov-Smirnov Test		Unstandardized Residual
N		64
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	10.89305881
Most Extreme Differences	Absolute	.108
	Positive	.084
	Negative	-.108
Kolmogorov-Smirnov Z		.867
Asymp. Sig. (2-tailed)		.439

a. Test distribution is Normal.

b. Calculated from data.

Based on the result of normality testing above, the normality in pretest of experimental group was 0,312 and the normality in pretest of control group was o,393. Moreover, it also can be seen that the normality in posttest of experimental group was 0,269 and the normality in posttest of control group.

2. Homogeneity

Homogeneity test is done to know the variance in population of research homogeny or not. To know the homogeneity of the test, the researcher uses One Way Anova with SPSS 21.0 versionb. If the significance value is bigger than level of significant or 0.05, it means that the data both pretest and posttest have homogeneity of variances.

Table 3.6 Homogeneity Testing of Pretest (experimental and control group)

Test of Homogeneity of Variances

pretest of experimental and control group

Levene Statistic	df1	df2	Sig.
2.271	1	62	.137

ANOVA

pretest of experimental and control group

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	650.250	1	650.250	3.599	.062
Within Groups	11201.500	62	180.669		
Total	11851.750	63			

The result of homogeneity testing of pretest (experimental and control group) in the table 3.6 above is higher than level of significant (0,137>0,05). It can be concluded that the data has homogeneity of variances.

Table 3.7Homogeneity testing of posttest (experimental and control group)

Test of Homogeneity of Variances

Posttest of experimental and control group

Levene Statistic	df1	df2	Sig.
2.905	1	62	.193

ANOVA

Posttest of experimental and control group

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.250	1	2.250	.019	.892
Within Groups	7475.500	62	120.573		
Total	7477.750	63			

The result of homogeneity testing of posttest (experimental and control group) in the table 3.6 above is higher than level of significant (0,193>0,05). It can be concluded that the data has homogeneity of variances.

F. |Data Collecting Method

The data collecting method refers to how the way the researcher collect the data. The purpose of the data collecting in conducting the research is to get the data that is needed by the researcher. The method of collecting data is clarified as follow :

1. Pretest

   Pretest is a test which is conducted before given a treatment to the students. It is given to both experimental group and control group. Pretest is needed to know the basic competence for the students and how far they know about the subject that will be taught. Pretest is given to the students at the first meeting. The researcher uses objective test that is multiple choices. The test consists of two narrative text and 25 multiple choice items. The students have to answer correctly based on the information on the text that is given.

2. Posttest

   After giving treatment, the researcher conducts the posttest in order to know or to measure the students' reading ability after the treatment. Posttest is administrated to know whether there is significant difference of the students' reading ability between those who are taught with and without using picture books. Posttest is given to the students at the last meeting. The researcher uses objective test that is multiple choices. The test also consists of two narrative text and 25 multiple choice items. The students have to answer correctly based on the information on the text that is given.

G. Data Analysis

Analyzing data is a process of analyzing the acquired from the result of the research. After all the data needed in this research have been collected in reading narrative form. The researcher analyzed whether there is a significant difference

between the ability in reading abilitywho are taught by using and without picture books. In conducting the test, the writer gave result of reading ability of the students. To describe the students'reading ability of narrative text, the researcher in this research using SPSS 21.0 for windows with the independent t-test. If the result of t-test was bigger than at the level of significance 0.05, the null hypothesis could not be rejected, indicated that picture books was not effective to increase students' reading ability in narrative text.

By contrast, if significant level was bigger than t-test at the level of significance 0.05, the null hypothesis could be rejected indicating that picture was effective to increase students' reading ability. And if the significant value bigger than 0.05 means Ho is rejected and Ha is accepted. On contrary, if the significance value smaller than 0.05 means that Ho is accepted and Ha is rejected.