CHAPTER III
METHOD OF INVESTIGATION

3.1. Research Design

In order to make the research more accurate and objective, research design is always used in every research. And it also arranged to explore the validity of the research result, which can give a guarantee about the scientificness of a research.

According to Seltiz and others as quote by Khotari (2004:31), research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. He also added that the research design is a conceptual structure within which research is conducted. It constitutes the blueprint for the collection, measurement, and analysis of data. This, it can be concluded that research design has aim to give responsibility for setting the next steps, in order to make the research result more accurate and objective.

Based on the statements of the problem in the previous chapter, this research called experimental research, which uses pretest and posttest. Mubarok (2015:78) stated that experimental research is one of the most powerful research methodologies that researchers can use. He also said that experimental research is a research method used to find a specific treatment effect against the other in uncontrolled conditions. So it can be concluded that the experiment research is a research which tries to find whether there is any effect relation or not.

There are two variables in this research. Those are independent and dependent variable. X is the representation of independent variable, while Y is the representation of dependent variable. An independent variable is the condition influencing the appearance of an indication or called treatment variable, X variable here is the use of pictures as the media in teaching reading comprehension. On the other hand, dependent variable is an indication appearing

because of the implementation of an experiment and also called effect variable. Y variable here is the reading achievement.

This experimental research will be applied to the eleventh year students of Immersion Class of MA Hasyim Asy'ari Bangsri, Jepara regency, in order to explore the result of the students' reading skill before and after being taught reading comprehension using picture series as the media. The researcher will use some experimental stages for several meetings. Firstly, the researcher gives the students a pretest, then the researcher will continue the research by implementing the picture series as the media in teaching reading comprehension, and the last stage is giving the students' posttest.

This experimental research uses *one group pretest-posttest design*, this research only uses one group without other comparative group. Thus, this experimental research called *quasi experiment*. Quasi experiment uses all subjects in intact group to be given treatment. We can formulate the quasi experimental study as follow:

Pretest	**Treatment**	**Posttest**
T_1	**X**	**T_2**

While Arikunto (2013:124) designs the pattern of quasi experiment as follow:

O_1	**X**	**O_2**

Where:

O_1: Pre-test

O_2: Post-test

X: Treatment

In this design, there are two observations. The first observation is done before experiment (O_1), called pre-test, and the second one is done after experiment (O_2), called post-test. The differences between pre-test and post-test (O_1-O_2) is considered as the effect of treatment or experiment.

3.2. Setting of the Research

The research will be conducted in MA Hasyim Asy'ari Bangsri. It is located at Jalan Pramuka No. 09, Bangsri, Jepara regency, Semarang province. The school was chosen based on some reasons. Firstly, it is one of Islamic favorite schools in Bangsri, Jepara regency. Secondly, the school gets numerous achievements in many competitions such as academic competitions, sports, arts and so on. Thirdly, the school has complete facilities to support the teaching and learning process. It has been given A score for the school accreditation in 2009 by School Accreditation Board.

The school has 21 classes, consisting of eight classes of Tenth Grades, seven classes of Eleventh Grades, and six classes of Twelfth Grades. The school has three different courses which can be chosen by the students through screening test. Those courses are Science Class, Social Class, and MAK (Islamic Religious) Class. There is also immersion class which consists of Science Classes and Social Classes. The immersion class is consisting of students who have good score and achievement. The students should pass the immersion class test to join in the class.

3.3. Subject of the Research

The subjects who will be used in this research are the eleventh year students of Immersion Class of MA Hasyim Asy'ari Bangsri, Jepara regency, in the academic year 2017/2018. The researcher chooses the eleventh year of Immersion Class, because based on the preliminary interview with the English teacher the researcher knows that the class needs something new in learning English, especially in reading skill. They still do not good enough score for reading skill. The class consists of 29 students; there are 8 males and 21 females.

3.4. Research Instrument

Research instrument is very important in this research. Instrument is a tool which is used by the researcher in order to gather the data. The researcher should formulate the research instrument which appropriate to the problem.

The instrument of research is a set of facilities used to gather the data in order to be more systematic and accurate in doing the research. Arikunto (2013:193) divides research instrument into two types, those are test and non-test. She stated that test is a series of questions or exercise used to measure skills, knowledge, intelligence, abilities or talents, which are possessed by individual or group. While non-test includes giving; questionnaire, observation, interview, rating skill, and documentation. Meanwhile, Arikunto (2013: 211) stated that a good instrument should deal with two important requirements, those are validity and reliability.

3.4.1. Validity

The most complex criterion of an effective test is validity. Groundlund as quoted by Brown (2004:22) validity is the extent to which inferences made from assessment results are appropriate, meaningful, and useful in terms of the purpose of the assessment. According to Arikunto (2013:213), the formula of the validity is as follow:

$$r_{xy} = \frac{(N.\sum XY) - (\sum X \sum Y)}{\sqrt{\{N.\sum X^2 - (\sum X)^2\}\{N.\sum Y^2 - (\sum Y)^2\}}}$$

Where:

r_{xy} : the item of test reliability

N : the number of respondent

X : total score of each item

Y : individual total score

X^2 : total for the square for each item

Y^2 : total of the square of individual total score

$(X)^2$: the square of the total score for each item

$(Y)^2$: the square of the individual total score

In this research, the researcher uses content validity. As stated by Arikunto (2003:219), content validity is an instrument of test which is appropriate with the content validity to measure the validity of the test given by making table of specification based on the curriculum of high school as stated in appendix 2.

3.4.2. Reliability

Reliability is the characteristics of a good test. Reliability is a constancy of an instrument to measure something to a certain group, the test should consistent and dependable. If the test is given to the same students on two different occasions, the test will show similar result or almost same. We can use the following formula to determine the reliability of the test:

After obtaining the result of validity test, it should be doubled to know how high the coefficient of its reliability and it is calculated by the application of the 'Spearman Brown' formula. According to Sudijono (2013:216) the formula is as follow :

$$r_{11} = \frac{2.r_{xy}}{(1+ r_{xy})}$$

r_{11} : Coefficient of reliability

r_{xy} : Reliability of half test

On the other hand, Mubarok (2015:59-60) stated that there are two kinds of language education test namely written and spoken test. He also quotes from Brown (2003:3) that to qualify as a test, the method must be explicit and structured: multiple choice questions with prescribed correct answers; a writing

prompt with a searing rubric; an oral interview based on a question script and a checklist of expected and responses to be filled in by the administrator.

Based on the explanation above, the researcher chooses multiple-choice test as the test instrument because it arranged systematically and can be done quickly in scoring this kind of test. The test given to the students refers to reading material that they have gotten. Each passage is followed by some multiple-choice items. In this research the students will get two kinds of test, those are pre-test and post-test. Because this study uses pictures as media in teaching reading comprehension to the students, so the researcher prepares the reading passages taken from the students' English hand book, with twenty items for pre-test, meanwhile the researcher also prepares the reading passages with pictures as the media in reading comprehension, with twenty items for post-test.

In teaching English reading comprehension using picture as the media for the eleventh year students of social class of MA Hasyim Asy'ari Bangsri, Jepara regency, the researcher try to find and provide the pictures related to their Narrative text material based on the curriculum on the school program. As explained above that the test consists of twenty items, each item is scored one (1) point for the right answer, while zero (0) for the wrong answer. Therefore, the students who could answer all items have twenty points.

In this research, it was found that the coefficient reliability of pre-test is 1,039. On the other hand, the result of the coefficient reliability of pre-test is 1,058, meanwhile r-table for the significant 0,05 (5%) = 0,367. Therefore, the test is reliable because $r_{11} > r_{table}$. The complete explanation can be seen at appendix 7-8.

3.5. Method of Data Collection

Before doing the research, the researcher conducted several steps to collect the data needed. Firstly, the researcher asks the identification paper from the faculty of Tarbiyah and Educational Sciences of Islamic University of Nahdlatul Ulama Jepara University, and then asks permission from the headmaster of MA

Hasyim Asy'ari Bangsri Jepara. To discover the accurate data, the final step is to carry out direct observation to the research object through doing some activities as follows:

1. Giving pre-test to twenty-nine students of Immersion Class to explore how far the reading achievement of the students before they use Picture series as media of teaching reading comprehension for Narrative text. It is done in the first meeting and before giving the treatment to them. The tests are multiple-choice items (taken from the students' hand book) as presented in appendix 4.
2. Giving teaching of reading comprehension for Narrative text using Picture Series as media for three meetings to explore the students' response when they are being taught by using new media. The pictures used in the treatment are picture series which relevant to the story of Narrative text they have learnt. The students also got some essay questions in both oral and written based on the text with picture series given.
3. Giving post-test in the last step. It is also given to the forty students of Immersion Class to find out how far the data result of reading achievement of the students after they use picture series as media of teaching reading comprehension for Narrative text. The test is multiple-choice items as presented in appendix 4.

Table 1-3 Timeline of the Research

No	Activity	Date				
		19th/7/ 2017	20th/7/ 2017	26th/7/ 2017	27th/7/ 2017	2nd/8/ 2017
1	Giving pre-test					
2	Giving teaching of reading comprehension for Narrative text using Picture Series as the media. ✓ Treatment 1 : The Ant and the Grasshopper					
3	Giving teaching of reading comprehension for Narrative					

	text using Picture Series as the media. Treatment 1 : The Fox and the Crow					
4	Giving teaching of reading comprehension for Narrative text using Picture Series as the media. Treatment 1 : The Princess and the Pea					
5	Giving post-test to measure the effectiveness of Picture Series in teaching reading comprehension for Narrative text					

After doing several activities above, the entire data collected are then processed as the data of the research.

3.6. Method of Data Analysis

Based on the statements of the problem stated in previous chapter, the data that should be analyzed are:

- ✓ Score of pre-test before using picture series as media in teaching reading comprehension for narrative text
- ✓ Score of post-test after using picture series as media in teaching reading comprehension for narrative text

The technique used to analyze the differentiation between the result of teaching reading before and after using picture series, as media in teaching reading comprehension for Narrative text is t-test technique. As stated by Sa'idah (2015:75) the formula of t-test technique is as follow:

$$t = \frac{x_1 - x_2}{s\sqrt{\frac{1}{N_1} + \frac{1}{N_2}}}$$

Where:

t : t value

x_1 : mean of experiment member

x_2 : mean of comparing member

s : variant

n_1 : number of experiment sample

n_2 : number of comparing sample

Before the researcher calculates the data through t-test technique which had explained above, it is needed to know the average (mean), median, modus and deviation standard of the data itself. According to Sa'idah (2015:26-42) the formula of average (mean), median, modus and deviation standard are as follow:

$x^- = \frac{\sum fx}{N}$ Sa'idah (2015:26)	Where: x^- = mean N = sample $\sum fx$ = sum of frequency times score of the students
Me = Bb + i$\left(\frac{\frac{1}{2}N - Fka}{Fd}\right)$ Sa'idah (2015:30)	Where: Me = median Bb = lower limit of median class i = width of the median class f_{ka} = frequency cumulative f_d = frequency in interval which has median
Mo = b + p $\left(\frac{b1}{b1+b2}\right)$ Sa'idah (2015:28)	Where: Mo = modus b = lower limit of modus class

	p = width of the modus class b_1 = the difference between frequency of the mode class and the class before modus b_2 = the difference between frequency of the mode class and the class after modus
$S = \sqrt{\frac{\sum f\ (x - \bar{x})^2}{N-1}}$ Sa'idah (2015:42)	Where: $\sum f$ = sum of frequency N = sample