CHAPTER III

RESEARCH METHOD

This chapter discusses A) Research Design, B) Variables, C) Research Setting, D) Subject of The Research (Population, Sample and Sampling), E) Data and Data Source, F) Research Instruments, G) Try out the Instrument (Validity and Reliability), H) Normality Testing, I) Technique of Data Collection, and J) Technique of Data Analysis.

A. Research Design

Research is defined as the systematic and objective analysis and recording of controlled observations that may lead to the development of generalization, principles, or theories, resulting in prediction and possibly ultimate control of events, Best (1981:18). Further, Arikunto (2010) states that research design is a design on which the writer makes some steps to guide the writer in carrying out the research.

Based on the aim of the research the researcher used quantitative design. According to Setiyadi (2006:8) quantitative design aims to investigate a theory which has been existed and the data in the order to support or reject it. Furthermore, Ary (2010:63) states that quantitative research is built on a study of earlier works in the field, which helps the researcher refine his or her problems and place it in contexts.

It can be concluded that quantitative research is used to test a theory has been existed and helps the researcher to solve his or her problem.

In this research, the researcher used the experimental research design. According to Ary (2010:26) experimental research involves a study of the effect of the systematic manipulation of one variable on another variable. Experimental design refers to the conceptual framework within which the experiment is conducted. So, experimental research design is a study of the effect of one variable on another variable. In the other word, it is to find out cause and effect relationship.

Ary (2010:271) states that an experimental design serves two functions:

1. It establishes the conditions for the comparisons required to test the hypotheses of the experiment.

2. It enables the experimenter, through statistical analysis of the data, to make a meaningful interpretation of the results of the study.

B. Variable

Ary (2010:37) explains a variable is a construct or a characteristic that can take on different values or scores. It is condition that investigated. Experimental research design has two variable is being conducted, that are independent and dependent variable.

1. Independent variable (X)

   Independent variable is a condition of variable which influences other variable. In addition, it is variable which is manipulated by the researcher deliberaty. Here, the independent variable is the strategy that is picture word inductive model.

2. Dependent variable (Y)

   Dependent variable is a condition of variable which influenced by other variable. It is as the experimental variable. The variable is observed and measured as an effect of manipulation to the independent variable. In this research, the dependent variable is descriptive text reading ability.

   Ary (2010:302) contends that experimental designs may also be classified according to how well they provide control of the threats to internal validity: pre-experimental, true-experimental, and quasi experimental designs.

   In this research, the researcher used pre-experimental design. According to Ary (2010:302) pre-experimental design do not have random assignment of subjects to groups or other strategies to control extraneous variables. There is one class used. Pre-experimental design focuses on treatment and outcome hence the data was taken from pre-test and post-test. Pre-test and post-test were administered to see whether the independent variable could be used to increase the students' descriptive text reading ability. The differences between the pre-test and post-test

scores for experimental class were tested statistically to asses the effect of independent variable.

Design of the research

$$Y_1 \qquad X \qquad Y_2$$

Where:

Y_1 : Pretest

X   : Treatments (using Picture Word Inductive Model)

Y_2 : Posttest

Pretest : Pretest is conducted to measure the students' reading ability or dependent variable before the treatments.

Treatments : Teaching descriptive text on reading ability by using of Picture Word Inductive Model to experimental group after pretest.

Post-test : Posttest is conducted to measure the increase of the students' descriptive text reading ability after being taught by using Picture Word Inductive Model.

C. **Research Setting**

The researcher chooses the seventh graders of MTsN Bandung located in Suruhan, Bandung Tulungagung. The researcher has done the research on March 20th –April 15th, 2017.

D. Subject of the Research

1. Population

Population is a group of elements or cases whether individuals, objects, or events, that conform to specific criteria and to which the results of the research. According to Sudjana (2006:74) population is totality of all value which possible, result of counting/calculating or measurement, quantitative and also hit the certain characteristic from all clear an complete corps member is which wish learned by the nature. So, it can be concluded that population is all members of any well-defined class of people, events or objects to investigate.

In this research, the populations of the research are the seventh graders at MTsN Bandung that consists of nine classes. The number of population is 342 students.

The choice of the subjects of the research was based on the following considerations:

a. The school has good enough quality because it is the only one islamics junior high school in Bandung which has been avowed by the government. MTsN Bandung has good achievement, such as: it has won a lot of scout competitions. One of them held in IAIN Tulungagung. Then it is as the winner in a lot of volly ball competitions. Next, the students of MTsN Bandung ever join in science olympiade and as the winner also. Besides that, in MTsN Bandung there are extracurriculars that can improve students'

talent and interest, they are: PMR, sholawat group, recitation of Al-qur'an, scout, volly ball and etc.

b. The students needed an interesting and enjoyable technique in learning English in general and specifically in descriptive text. Because based on the researcher's observation and interview with the teacher, the teacher still used conventional method to teach descriptive text in the class. The teacher was giving explanation only and the students just sit and listen to the teacher. It makes the students feel bored in learning descriptive text.

c. Picture word inductive model had never been introduced to the students when learning English. It has proven from the teacher said to the researcher that she just explains the material and does not has many references about strategy which used in teaching descriptive text on reading ability. Moreover, picture word inductive model.

2. Sample

Sample is a small that is observed. Sudjana (1996:6) notices that sample is part of population. It can be concluded that sample is a small part of population that is observed.

In this research, the researcher took VII C class as the experimental group which consisting of 41 students. It is consider the explanation of the English teacher in MTsN Bandung that VII C class as an excellent class consisting of students having better achievement

because their placement of class is based on their achievement. It has proven that the students from elementary school who has good result in national exam be in VIIC class. So, it will help to give more information to the researcher related with research. Here, VII C class as the experimental class received a new treatment because the researcher believes VIIC class can give more detail information to the researcher. It was taught by using picture word inductive model.

3. **Sampling**

According to Sugiyono (2007:118) sampling is a technique to take a sample. In the other hand, sampling as the researcher's way in select number of individuals as a sample which represents the population. Further, Arikunto (2010) states that if the subject is less than one hundred it is better to take the entire subject. If the subject is more than one hundred it can be taken between 10-15% or 20-25% or more than it.

In this research, the researcher used cluster sampling technique. Cluster sampling technique is a type of probablity sampling which every element in the population has an equal chance of being selected. In cluster sampling is different from simple random sampling which is we list all members of a target population and select the sample from among them. According to Ary (2010:154) in cluster sampling the unit chosen is not an individual but, rather, a group of individuals who are naturally together. Individuals of population which is chosen will be

taken as sample. These individuals constitute a cluster in so far as they are a like with respect to characteristics relevant to the variables of the study.

Finally, from nine classes of seventh grade which is as population, the researcher chooses VII C class as the sample which consists of 41 students. The researcher believes that VII C class of MTsN Bandung can give sufficient information.

E. Data and Data Source

1. Data

Arifin (2012:191) explains that data is group of fact about a phenomenon in the form of number or category. It means that data is the result of the research that was found by the researcher. Without the data, the researcher can not get information. The data of quantitative is in the form of number. The data from this research was students' descriptive text scores which got from pre-test and post-test.

2. Data Source

Arikunto (2010:172) says that data source in the research is the subject in which the data are gotten. There are three kinds of data sources: 1) person, 2) place, 3) paper, data source in the form of symbol. In this research, the data source was person that was the students of VII C class.

F. Research Instrument

The accuracy of the result of research was mostly depend on how accurate the use of instrument. In this research, the researcher uses test as the instrument to know the effectiveness of using picture word inductive model in teaching descriptive text on reading ability. The instrumentation to show the validity and reliability of the test can be seen in figure 3.1.

Figure 3.1
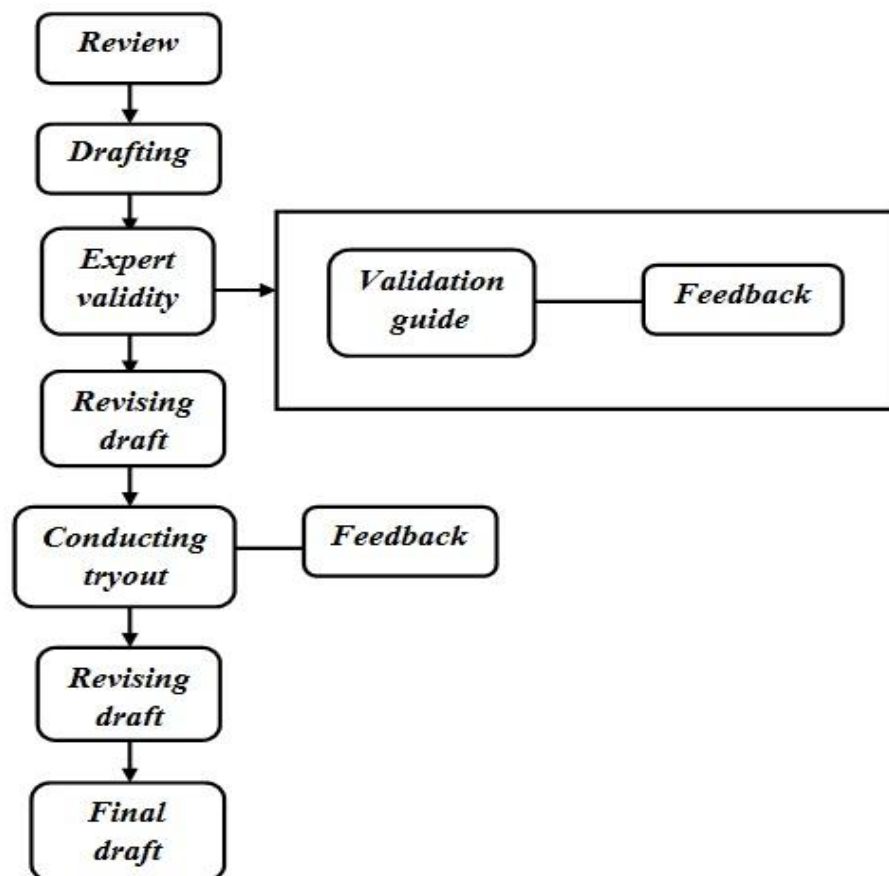
Based on the figure 3.1, the steps of intstrumentation as follows:

1. Review Literature

    The first step to get valid and reliable test is the researcher reviews some literatures from book and syllabus used in Junior High School to get some information as source to draft the test that related with the materials.

2. Drafting Instrument

    After get some information from the reviewing literature, the researcher started to draft test as instrument that appropriate with the materials which taught in Junior High School.

3. Expert validity

    After finishing the drafting instrument, the instrument is validated by the expert that is English teacher of MTsN Bandung and lecturer to get feedback and validation guide. It is to know the validity of the instrument is either related with its construct validity, face, or content validity.

4. Revising Draft

    After getting feedback from expert validity, the researcher revised the draft of instrument.

5. Conducting try out

    Next, the researcher conducted try out the test to students who have the same class and level as the sample to get feedback from students. The purpose of conducting tryout the test was to find out

the quality of the research instrument that was used in pre-test and post-test. The result of try out which is analyzed by using Alpha Cronbach. It is used to revise the draft to be the valid instrument because the reliability and validity of the instrument can be objectively computed by using the formula of Alpha Cronbach.

6. Revising Draft

In revising the draft, the researcher revised the instrument again based on the feedback to get the final product of instrument.

7. Final Product of Instrument

The last is final product of instrument. It means that the instrument has good quality where the instrument is appropriate.

The instrumentation above helps the researcher to make appropriate instrument.

G. Try Out the Instrument

The purpose of try out the instrument was to find out the quality of the research instrument that used for collecting the data, the test was chosen as the instrument tried out before hand. The try out was conducted on March 22nd 2017 to the different subject before truly conducting the research to the sample of research. It was supposed to determine the quality of the test as the instrument of the research. The result of the try out the instrument was analyzed statistically to know the validity and reliability that will be discussed below:

1. **Validity**

    Validity is measuring what it is designed to measure. The most complex criterion of an effective test and the most important principle of language testing is validity. It is the extent to which inferences made from assesment result are appropriate, meaningful, and useful in term of the purpose of the assesment, Brown (2004:22). It is measurement that shows the validity of instrument. According to Ary (2010:225) validity is the most important consideration in developing and evaluating measuring instruments. Historically, validity was defined as the extent to which an instrument measured what it claimed to measure. The focus of recent views of validity is not on the instrument itself but on the interpretation and meaning of the scores derived from the instrument. It means that validity indicates how deep the instrument can measure the target of the research.

    Furthermore, there are four types of validity that are:

    a. Face validity, concerns with the lay out of the test. Ary (2010:228) states that it is a term sometimes used in connection with a test's content. Face validity refers to the extent to which examiners believe the instrument is measuring what it is supposed to measure. It is not a technical form of validity.

    b. Content validity, depends on careful analysis of the language being tested, which assesses how well the instrument samples the content

domain being measured. This is line with Johnson (2001:301) the course content must clearly be represented in test itself.

c. Construct validity, measures certain specific characteristic in accordance with a theory of language learning, which assesses how well the instrument represents the construct of interest.

d. Criterion related validity, concerns with measuring the success in the future as replacement test, which assesses how well the instrument correlates with other measures of the variable of interest.

Based on the types of validity above, the researcher used content and construct validity to measure whether the test has a good validity or not.

a. Content Validity

A test is said to have content validity if its contents constitutes a representative sample of language skills, structures, etc. being tested. In order to judge whether or not the test has content validity, we need a specification of the skills or structure being tested. A comparison of test specification and test content is basis for judgment for content validity. It can be concluded that content validity which is used to assesses how well the instrument samples the content domain being measured.

The researcher made the instrument based on the course objectives in the syllabus of seventh graders of MTsN Bandung. It

represents the material learned in the class. In this case reading test, have represented the material which will be measure. In this school the descriptive text reading was taught at second semester and the researcher conducted the research at second semester also. So, this test is valid in term of content validity. According to Setiyadi (2006), to fulfill this type of validity the researcher should be aware of all the indicators of the test items and analyze whether the instrument have represented the material which will be measured.

Table 3.1 Specification of the instrument.

No.	Indicator	Pretest	Post-test	%
1.	Identifying the topic	1,5,10,16	10,6,2,19	20%
2.	Identifying specific information	2,3,6,9,11,12	11,12,7,1,3,4	30%
3.	Understanding the vocabulary	7,13,15	8,5,18	15%
4.	Finding inference	17,14,19	20,17,15	15%
5.	Finding reference	4,8,18,20	13,9,14,16	20%
Total		20	20	100%

The table above shows the specification of instrument which represented the material. Total all of questions are 20 items in the form of multiple choices test and the value score of every question is 5 points, thus a total of all is 100 points.

b. Construct Validity

Construct validity is about the instrument form. It investigates the research instrument appropriateness to the research object. Construct validity is concern with whether the test is actually in line with the theory of what reading means to know the language it is stated by Hatch and Farhady (1982). To know that the test is true reflection of the theory of language that is being measured. It means that the items should really test the students whether they have mastered the descriptive text reading. It focuses on test scores. Related to this research, the test items should be questioning the five aspects of reading such as: topic, specific information, vocabulary, inference and reference.

Based on the explanation, in conducted the test the researcher asks the students to answer the multiple choices test based on descriptive text to measure the students' ability in reading and this is fulfill the construct of reading test, therefore valid in term of construct validity.

Besides that, in this research, the researcher used SPSS 16.0 cronbach's alpha formula to know the validity of instrument. It can use corrected item-total correlation formulation. According to Ridwan (2004:110) that the criteria of validity of the instrument can be divided into 5 classes as follow:

1. If the item-total correlation score 0.00-0.020: 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: valid enough

4. If the item-total correlation score 0.81-1.00: very valid

Table 3.2. Item-Total Statistics

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
question_1	13.20	9.432	.075	.630
question_2	13.20	9.326	.118	.625
question_3	13.25	9.145	.166	.620
question_4	13.20	8.800	.337	.600
question_5	13.15	9.503	.068	.630
question_6	13.20	9.116	.204	.616
question_7	13.50	8.684	.279	.605
question_8	13.15	8.976	.309	.605
question_9	13.25	9.566	.010	.639
question_10	13.30	9.589	-.007	.643
question_11	13.20	9.537	.033	.635
question_12	13.50	7.211	.841	.513
question_13	13.50	8.684	.279	.605
question_14	13.15	8.871	.359	.599
question_15	13.20	9.011	.248	.610
question_16	13.35	9.082	.159	.622
question_17	13.50	8.263	.428	.582
question_18	13.20	9.537	.033	.635
question_19	13.35	9.082	.159	.622
question_20	13.65	8.766	.271	.607

From the calculation, it was found that there are two items less valid. The researcher revised both items before gives the test to the students and the result shown on the table above.

2. **Reliability**

Reliability means consistency and stability. According to Ary (2010:236) the reliability of a measuring instrument is the degree of consistency with which it measures whatever it is measuring. It means can be believed. Besides having high validity, a good test should have high reliability too.

A reliable test is consistent and dependable. Hatch and Farhady (1982) states that the reliability of a test can be defined as the extent to which a test procedures consistent result when administered under similar condition. A research instrument must have the consistency in giving the result. For example, if the students are given the same test on two different occasions, the test should yield similar result. The word "similar" it means that because it is almost impossible for the test-takers to get exactly the same scores when the test is repeated the following day. This is because of the fact that human beings do not simply behave in exactly the same way on every occasion. Therefore, the more similar the scores are, the more reliable the test is.

Besides having high validity, a good test should have high reliability too. In this research, the researcher used SPSS 16.0 to know the reliability of instruments.

To determining the reliability of the test, the researcher used the cronbach alpha.

According to Ridwan (2004:118) the criteria of reliability of the instruments can be divided into 5 classes as follows:

Table 3.3. Cronbach's Alpha Interpretation

Cronbach's Alpha	Interpretation
0.00-0.020	Less reliable
0.21-0.40	Rather reliable
0.41-0.60	Reliable enough
0.61-0.80	Reliable
0.81-1.00	Very reliable

Table 3.4. Reliability Result

Reliability Statistics

Cronbach's Alpha	N of Items
.626	20

The Cronbach Alpha above shows the score is 0.626. It means that the test items are reliable, because the value is between 0.61-0.80.

H. Normality Testing

Normality is conducted to know whether the data distribution is normal or not. Before conducting the real analysis, the data of the research should be tested normality of distribution. Good data is the data in the normal distribution. The computation of normality testing in this research

by using SPSS 16.0 that is non-parametric statistic One-Sample Kolmogorov-Smirnov test because the research without determine the specific qualifications about the population parameter which be a sample. The value of significance (α) = 0.05. Testing of data normality is conducted by the rules as follow:

1. If the value of significance > 0.05 it means that the distribution data is normal.

2. If the value of significance < 0.05 it means that the distribution data is not normal.

The data present in the table below:

Table 3.5. One-Sample Kolmogorov-Smirnov Test

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		41
Normal Parameters[a]	Mean	.0000000
	Std. Deviation	6.60846994
Most Extreme Differences	Absolute	.128
	Positive	.075
	Negative	-.128
Kolmogorov-Smirnov Z		.821
Asymp. Sig. (2-tailed)		.510

a. Test distribution is Normal.

The result of normality testing shows the significance value from the table above is 0.510. It means that the significance value is higher than 0.05 and the data is in normal distribution.

I. Technique of Data Collection

To know the effectiveness of picture word inductive model in this quantitative research, the researcher used test as the instrument to collecting the data. Test is a set of questions and exercises used to measure the achievement or capacity of the individual or group. In this research, there are two kinds of test, pretest and post test that were given to the students.

1. Pre-test

   Pre-test was administered after getting the result of the tryout class. Pre-test was given before the researcher applied the treatment in experimental class. Pre-test administered to find out the students' descriptive text reading ability before treatments. The pre-test comprised 20 items in the form of multiple choices test.

2. Treatments

   After conducting the pre-test, the researcher gave the treatments to the students. Experimental class taught by using picture word inductive model strategy. The researcher conducted the treatments twice. Some sequences of material through picture word inductive model in the classroom proposed as follows:

Table 3.6. Steps in Picture Word Inductive Model

No	Activities	Teacher activities	Students activities
1.	Pre activities	• The teacher greets the students. • The teacher checks the attendance list.	• The students answer greeting and pay attention.
		• The teacher involves students in a small talk to build up their schemata about the material that is descriptive text which is going to be discussed.	• Students pay attention to the teacher.
2.	While activities	• The teacher prepares a picture first. It's connected to the theme which will be studying.	• Students pay attention to the teacher.
		• The teacher invites students to join at the picture, ask them to share words they know that describe the objects they see. Besides that, the students share the action that can be done based on the object of the picture and the characteristic of the object on the picture.	• Students identify the picture.
		• As individual students speak, teacher writes the word on the outer edges of picture with a line pointing to picture and the students label their own photocopied versions of the same picture.	• Students labeling the picture and do what asked by the teacher.

		• After students write each word, the teacher spells the word aloud, pronounce it and ask students to repeat.	• Students repeat what the teacher said.
		• After finish, the teacher reviews the words on the picture with classify the word into variety of groups of verb, noun, and adjective.	• Students pay attention to teacher.
		• The teacher leads the students to create a title of the picture.	• Students create a title relate to the picture.
		• The teacher asks the students to make some sentences relate with the picture and what they want to say about it.	• Students make some sentences relate with the picture.
		• The teacher together with the students discusses the sentences that has been generate. Here the students learn the tenses that used in descriptive text, noun phrase, adjective phrase, and verb phrase.	•
		• The teacher gives the text which belongs to the picture and asks the students to read the text.	• Students reading the text.
		• The teacher asks the students to think about the information on the text that related to the picture that showed by the teacher and they can	• Students discuss the information from the text.

		compare with their own sentences. Here they will learn about the topic and general structure of descriptive text.	
		• The teacher helps the students to find reference and inference from the text.	• The students try to find reference and inference from the text.
		• The teacher gives students a sheet and asks them to answer the reading test related to text.	• Students discuss the answer of reading test.
3.	Post activities	• The teacher asks the students about what they got from the lesson.	• Students giving explanation about the lesson today.
		• The teacher closes the meeting.	

3. Post-test

The post test was given to the experimental class after being taught by using picture word inductive model. It is used to find out the students' descriptive text reading ability after treatments.

Before giving post-test to the sample, the researcher had tryout the tests. It was held to know the validity and reliability of pre-test and post-test and to make sure that the test has good quality. The post-test comprised 20 items in the form of multiple choices test.

J. Technique of Data Analysis

Data analysis is a process of analyzing the acquired from the result of the research. The data was analyzed in order to see whether the students' descriptive text reading ability before and after being taught by using picture word inductive model is improvement or not. The data obtained from research result is the result of students' descriptive text reading score that analyzed quantitatively. Quantitative analysis was done using statistic which is called statistical analysis or inferential statistic. The quantitative data of this research in analyzed by using statistical computation. The researcher examined the students' scores using the following steps:

1. Scoring the pre-test and post-test.

2. Tabulating the result of the test and calculating the scores of pre-test and post-test.

3. Drawing conclusion from the tabulated-result of the pre-test and post-test that was administered, that was by statistically analyzing the data using statistical computerization, i.e. Paired-samples t-test of Stastistical Package for Social Science (SPSS) for windows to test whether the improve of students' gain is significant or not.

The researcher's assumptions are as follow:

1. If $t_{count} > t_{table}$, the Null Hypothesis (H_0) is rejected and alternative hypothesis (H_a) is accepted. It means there is a significant

difference of students' descriptive text reading ability before and after being taught by using picture word inductive model.

2. If $t_{count} < t_{table}$, the Null hypothesis (H_0) is accepted and alternative hypothesis (H_a) is rejected. It means there is no a significant difference of students' descriptive text reading ability before and after being taught by using picture word inductive model.

The technique of data analysis which used by the researcher belonged to quantitative data analysis and the data were analyzed statistically by using T-test.

The test criterion is : H_a is accepted if calculated $t_{count} > t_{table}$, by degrees of freedom of df = (N − 1) and by the chance of 0.05 level of significance.