

CHAPTER III

RESEARCH METHOD

This chapter presents the review of some theories about research design. It consists of research design, population and sample, research variable, research Instrument, validity and reliability testing, data collection method and data analysis.

A. Research Design

This research intended to know the effectiveness of using PQRST Method on the eight grade of students' reading comprehension ability. The research design which is used in this study is an experimental research with quantitative approach, According to Ary *et al* (2010:22) states that quantitative research uses objective measurement to gather numeric data that are used to answer question or test predetermined hypotheses. Meanwhile, experimental research involves the study of the effect of systematic manipulation no one variables on another variable (Ary *et al*, 2010:22). The researcher identifies variable and may look for relationship among them, but does not manipulate the variables. In other words, the purpose of experiment research is to determine whether casual relationship exists between two or more variables.

The experimental research used in this study is pre-experimental design because it has little or no control of extraneous variable (Ary *et al*, 2010:303). It means it design does not have random assignment of subject to group or other method to control extraneous variable. Moreover, the researcher does not use a control group. This design involves only one group pre-test and post-test as

subject of study without control group or comparison group. So the researcher only takes one class to do pre test, treatment and post test. It means one class is measured not only after being treatment, but also before the treatment. Pre-test provides a measure on some attribute or characteristic that is assessed in an experiment before the group gets a treatment, while in the post-test measure on some attribute or characteristic that assessed for participants in an experiment after the treatment. The pretest and post test are given to take the score of the students' achievement before and after being taught using PQRST Method. Because of this research collect data of students reading comprehension scores, the data of the test is numeric. The researcher analyzed the data of test with SPSS statistics. The design of the research can be seen at the table below:

Table 3.1 The Illustration of Research Design

Pre-Test	Independent Variable	Post-Test
Y1	X	Y2

X : Reading narrative text through PQRST Method

Y1 : Students' achievement on reading comprehension
before treatment.

Y2 : Students' achievement on reading comprehension
after treatment.

The procedures of experimental research that use one group pre-test and posttest design in this study are described as follows:

1. Administering pre-test (Y1) with a purpose of measuring students' reading comprehension before applying treatment.
2. Applying experimental treatment teaching reading comprehension by using PQRST Method (X).
3. Administering post-test (Y2) with a purpose of measuring students' reading comprehension after applying treatment.

B. Population and Sample

1. Population

According to Ary *et al* (2010:148) population is all members of any well-defined class of people, events, or objects. The population in this research is all of the students from class second or eight grade of SMPN 1 Sumbergempol in academic 2016/2017 from A class until J class which consists of 368 students.

2. Sample and Sampling Technique

Sample is part of population that representative. According to Ary *et al* (2010:148) states that sample is portion of the population. This research takes one class as sample of research. They are students of VIII B class which consist 37 students. Sampling is the process of selecting the individuals who will participate in this research (Frankel and Wallen, 2006:107). It means process selecting unit from population. The purpose of sampling is gain information about a population; rarely is a study in such as a way that the

individual represent the large group which they were selected. Technique to take sample in this research used purposive sampling which taking sample by definite consideration. Purposive sampling technique is a type of non-probability sampling where the researcher consciously select particular element of subject for addition in a study so as make sure that the subject could give sufficient information about student ability in learning English especially reading comprehension. To select the sample based on recommendation from English teacher. The teacher select 8B class because the students more active in teaching and learning English.

C. Research Variable

According to Ari *et al* (2010:37) states that variable is a construct or characteristic that can take on differ values or scores. In this research there are two kinds of variable such as independent variable and dependent variable. The independent variable is a factor that affects the dependent variable. Meanwhile, dependent variable is the one affected by independent variable. The independent variable is PQRST Method and the dependent variable is students reading comprehension in narrative text.

D. Research Instrument

Research instrument was used to collect data that needed. The researcher believes that without instruments, it is impossible for the researcher to collect the data. The instrument in this research is test. According to Ary *et al* (2010:201) test is a set of stimuli presented to individual in order to elicit response on the basis of which a numerical score

can be assigned.

The researcher used the objective tests in the form of multiple choice questions because some reason. First, it is effective for measuring. Second, it is objective scoring which is quick, easy and consistent. Third, it usually encourages the student to develop a comprehensive knowledge of specific facts and the ability to make fine discrimination among them. The test consists of twenty five multiple choice questions. Each item of test includes 5 options, namely a, b, c, d. It is composed based on the materials of reading comprehension of narrative text for the eighth grade students of Junior High School which were taken from some resources. The students were asked to choose the correct answer of text by choose correct answer.

The instrument of the test was given to the experimental class (pre-test and post-test). The researcher gave pre-test by give the task during 30 minutes on March 22, 2017. Pre-test was intended to measure students' reading comprehension ability before the treatment given. After pre-test have done, the researcher conducts treatment on March 22, 2017 during 50 minutes about introducing of PQRS Method. Next treatment is given on March 27, 2013 and March 29, 2017 during 70 minutes one meeting that explains PQRS steps. Then on April 3, 2017, the researcher gives the last treatment during 30 minutes that discuss a result of explanation PQRS method. Meanwhile post-test is given on April 03, 2017 by give the task during 30 minutes. Post-test was to measure students' reading comprehension ability after the treatment given.

In this study, the try-out was conducted before the instrument was used to collect the data. It means Instrument try out was held before the pre-test and post-test. Try out was administered in another class which was not involved during the research process. Tryout will be implemented to students of VIII D at SMPN 1 Sumbergempol. It was used to find out the validity and reliability of the instrument. Researcher choose this subject based on characteristic of students ability that near same with the sample.

E. Validity and Reliability Testing

1. Validity

The good instrument is valid. According to Ary *et al* (2010:225) defines validity as the extent to which as instrument measured what it claimed to measure. While, Fraenkel and Wallen (2006:150) state that validity is the most important idea to consider when preparing or selecting an instrument for use In other words, validity can be defined as the instrument that measures what is supposed to be measured. An instrument which is used to test what should be tested in order to make the test become valid. In this study, to ensure test validity the researcher used content validity construct validity and face validity. The content and constructs validity the instrument in form of the Blueprint of Reading Comprehension Test in table bellow as follows:

Table 3.2 Blueprint of Reading Comprehension Test

Construct/ Definition	Dimension	Sub - Dimension	Indicator	Sub-Indicator	Test Format	Item number	
						Pre test	Post test
Reading Comprehension is the process simultaneously extracting and constructing meaning through interaction and involvement with written language. It means that reading comprehension is defined as the level of understanding of a text	Level of understanding of a text	Narrative Text	Understanding the meaning of short simple functional text and monologue text in the form of narrative text to interact with environment.	Students are able to :	Multiple choice		
				1. Finding title, the main idea or topic.		4,10,19	7,16
				2. Identifying important information		1,3,12,15,16,17,18,22,23	1,8,12,17,19,22,23,25
				3. Understanding vocabulary.		9,13	10,14,15,20
				4. Finding the message.		24	4
				5. Understanding reference "refer to".		14,20,25	3,13,18
				6. Understanding character in narrative text.		2,11	2,11
7. Identifying kind, structure and the purpose of narrative text.	5,6,7,8,21	5,6,9,21,24					

a. Content Validity

The content validity of the test is showed with relevancy of the objective of the test and the content of the test items. According to Ary *et al* (2010:225) states that validity is to have teachers examine the test and judge whether the test is adequate sample of the content

and objective to be measures. The test was said have content validity if its contents constitute a representative sample of language skills, structures, etc., being tested. It that the test based on competency of standard and basic competency of school based curriculum grade VIII of the English subject.

b. Construct Validity

Construct validity is any theory, hypothesis, or model that attempts to explain, observed phenomena in our universe of perception (Brown, 2004:45). It is used to examine whether the test has a consistent representation with theories underlying the presented material or not. Therefore, the construct validity is refers to the theory of language.

c. Face validity

According to Ary *et al* (2010:225) who states that face validity refers to the extent to which examines believe the instrument is measuring what it is supposed to measure. Face validity refers to the degree to which a test looks right, and appears to measure the knowledge or abilities it claims to measure, based on subjective judgment or the examinees who take it, the administrative personnel who decide on its use, and other psychometrically unsophisticated observers (Brown, 2004). The test in this research was designed to measure students' reading comprehension. Thus, to achieve face validity, the researcher provided the instructions to ask students to

understand what has been read. In this study, the face validity was done through validated by the expert.

2. Reliability

Reliability is the consistency of measurement. By reliability, we know whether test is good. According to Ary *et al* (2010:237) states that reliability is concerned with the effect of errors of measurement on the on the consistency of scores. A test said reliable if the test is consistent and dependable. It means that whenever the test is administered, it would show the similar or even the same result in any situation of test.

In this research, the researcher used SPSS 16.0 for windows to know the reliability of test instrument. The researcher gives try out to the students in other class in the same grade. The try out is used to know the reliability of the pre-test and post-test. To analyze the answer of students in tryout pre-test and post-test, the researcher use reliability test based on *Cronbach's Alpha*. It requires test administration only once. The result of reliability test was:

Table.3.3 The Reliability of Pre-test

Reliability Statistics	
Cronbach's Alpha	N of Items
.779	25

Table 3.4 The Reliability of Post-test

Reliability Statistics	
Cronbach's Alpha	N of Items
.720	25

According to Arikunto (2009:100) divided the criteria of reliability instrument into 4 classes as follows.

- a. If the *alpha cronbach* score 0.00-0.20: low
- b. If the *alpha cronbach* score 0.40-0.59: enough
- c. If the *alpha cronbach* score 0.60-0.79: high
- d. If the *alpha cronbach* score 0.80-1.00: very high

From the analysis by SPSS in table above, the reliability value of pre-test is 0.779 and post-test is 0.720. Based on Arikunto if the *alpha cronbach* score 0.60-0.79 it can be said that the instrument was high for reliability.

F. Data Collection Method

The data collecting method is the method to obtain the data in the research. The aims of the data collecting in conducting scientific research was to get data that needed by the research. The technique of collecting data was clarified as follow:

1. Pre-Test

The researcher gave pre-test on March 22, 2017. Pre-test was given to the students before the researcher taught by using PQRST Method. Pre-test is needed to know how far the students reading comprehension of narrative text not using PQRST Method. The form of pre-test is multiple choices which consist 25 items about narrative text. The pre-test given to know the basic competence for students and to know them earlier knowledge before they get treatment. The students answered the task of pre-test is 30 minutes.

2. Post test

After the treatment, the post test was given to the students. The researcher administered post test on April 03, 2017. The test item in the post-test was different with the pre-test, but both of them have same indicators and the text was almost same in level of difficulties. This test is to measure student's reading comprehension after treatment applied. The form post-test was also multiple choices which consist 25 items about narrative text. It was given to know the final score and the student difference achievement before and after they get treatment. Time allocation to answer the task is 30 minutes.

3. Treatment

The treatment was conducted after the administration of the pre-test. The treatment consists of 4 meetings. It was administered on March 22, 2017, March 27, 2017, March 29, 2017 and April 03, 2017. The purpose of

treatment is to help students in understanding Narrative text. The treatment was taught by using PQRST Method to the students. The steps treatment can be seen in appendix 2.

Table 3.6 The Schedule of Test and Treatment

No	Activity	Dates	Time
1.	Pre-test	March, 22 2017	10.00-10.30
2.	Treatment 1 (Introducing of PQRST Method)	March, 22 2017	10.30-11.20
	2 (Explanation of P,Q steps)	March, 27 2017	10.00-11.20
	3 (Explanation R,S,T steps)	March, 29 2017	10.00-11.20
	Discussion of result PQRST	April, 03 2017	10.00-10.30
3.	Post-test	April, 03 2017	10.30-11.00

G. Data Analysis

Data analysis is reviewing the data while they are being collected and attempting to synthesize and make sense out of what is observed (Ary *et al*, 2010:530). In analyzing data, the researcher used statistical calculation of T-test. T- Test is used to find out the difference of the score of student reading comprehension using PQRST Method. Because in this research is just administered in experimental class with one group pre-test and post test. It means the subject is same but they get the different treatment. The researcher is used Paired Sample T-test application SPSS 16.0 to analyze the data. The data obtained from the result of student pre-test and post-test. The data result

was processed by comparing with the first data (pre-test) and the second data (post-test) to see whether there will be significant difference after given by treatment. The data result (post-test) of reading was data of average score of reading test taught by PQRST Method. The first data (pre-test) is data of students score before taught by using PQRST Method. If the post-test on the students' reading comprehension test is higher than pre-test, it means that teaching reading by using PQRST Method is effective.