

## **CHAPTER III**

### **RESEARCH METHOD**

This chapter present the discussion of research method employed in this study. This chapter covers research design, population and sample of the study, research variable, data source, data collecting method and research instrument, validity and reliability testing, normality testing, data analysis and also hypothesis testing.

#### **A. Research Design**

Research design is all needed process in planning and conducting the research. As Nazir (2003:84) states that research design is all process that be needed in conducting research. It is important ways to achieve scientific truth for a research. In other word, it is to answer the research problem through applying of the scientific procedure.

In this study, the researcher used quantitative approach. Since this study determine the relationship between one thing (an independent variable) and another thing (dependent variable) in a population. To achieve the purpose of the study, the researcher took a certain design of the study. The design of this study was belong to comparative study since this study has purpose to know the students different score who are taught by using PQ4R (preview, Question, Read, Reflect, Recite, Review) and KWL (Know- Want- Learnt)

strategy. According to Lodico et al (2000:209) stated that a comparative research involves comparing groups to see if some independent variable has caused a change in a dependent variable.

In this study, the researcher used two classes in giving treatment. One class was taught by using PQ4R strategy and another class was taught by using KWL strategy. The researcher provide lesson plan to be guided in teaching process. The researcher gave post test after conducting the treatment. Post test is given in order to get scores that will be compared. It was compared to investigate the difference score between teaching reading by using PQ4R (Preview, Question, Read, Reflect, Recite, Review) and KWL (Know – Want – Learnt). Moreover, It is to know whether there is significant difference scores on the students' ability in comprehending the text after they are taught by using PQ4R (Preview, Question, Read, Reflect, Recite, Review) and KWL (Know – Want – Learnt) strategy.

## **B. Population, Sample and Sampling**

### **1. Population**

Population and sample are very important part in a study. Population is all members of any well-defined class of people, events or object. According to Nawawi (2012) population is the whole research objects which include human, things, animals, plants, indication, test value or events as data sources which have particular characteristics in a research. In addition Lodico, et al (2006:140) state that a population is

the wider group of individuals about which the researcher wants to make statement. It means population is the larger group to which the researcher would like the result of a study to be generalizable. Population of this study was the second year students of SMPN 1 Sumbergempol Tulungagung in the academic year 2015/2016 which consists of 11 classes. The total numbers of the students at a second year SMPN 1 Sumbergempol Tulungagung in the academic year 2013/2014 were 352 students.

## **2. Sample and sampling**

Sample can be defined as the smaller part of population. Lodico, et al (2006:143) gave definition a sample is a smaller group selected from a larger population (in this case, a realistic population) that is representative of the larger population. People in the sample are then assigned to one of two more groups that are treated with a regard to a specific educational approach or practice or are exposed to a different treatments at different points in time. The sample of this study was A class and D class of second year. They were 30 students for A class and 30 for D class.

In conducting this study, sampling technique is needed to take a representative sample of whole population. Sampling is the process of getting a representative part of the population being studied. The most important aspect of sampling is that the sample must represent the larger

population from which it is drawn. In selecting the sample of the study, the researcher used purposive sampling technique.

Purposive sampling technique is a type of non probability sampling where the researcher consciously selects particular elements or subject for addition in a research so as to make sure that the elements will have certain characteristic pertinent to the research. According to Sugiyono (2015:124) purposive sampling is technique in taking sample by specific consideration. The researcher used purposive sampling by consideration of achievement in English course and the teacher suggest to choose A and D class.

### **C. Research Variable**

Variable is a measurable characteristics that varies. It is the characteristics or attribute of an individual, group, educational system or the environment. In this study the researcher used two variables. They were independent variable and dependent variable.

#### **1. Independent variable**

The independent variable is the variable that refers to how participants are treated. It is variable manipulated by the experimenter. Forte (1984:23) defines an independent variable as the element that the researcher believes may in some way to relate, or influence the dependent variable.

This study the researcher used two independent variables. Those were Preview, Question, Read, Reflect, Recite, Review (PQ4R) strategy and Know- Want-Learnt (KWL) strategy.

## **2. Dependent variable**

Dependent variable is the variable which is observed and measured to determine the effect of the independent variable. According to Forte (1984) the dependent variable is the major variable that will be measured or observed to determine how, and if, it is affected by the presence of the independent variable. The dependent variable in this study was the students' ability in reading comprehension.

## **D. Data and Data Source**

Data are fact, observations, recordings, or experience or which theory or hypothesis or another research output is based. In other word, data are unit information that can be analyzed and relevant with the problem. In this study, the data are gotten from the students. The data in this study were in the form of score. That was post-test score.

## **E. Data Collecting Method and Research Instrument**

### **1. Data Collecting Method**

Data collection is an important aspect of any type of research study. Data collection method is a systematical process or procedure of

gathering or collect data which is needed. The data of this study were collected by:

a. Test

Test is one way to measure the students' ability. Testing can be defined as a process of giving test. According to Djiwandono (2008) a test is a tool or procedure used to measure the students' language proficiency. The researcher used post test to elicit and collect information on students' reading comprehension after giving a different treatment. In this study, the researcher gave treatment to the students three times of each strategy for each different group. Treatment was carried out on March 3<sup>rd</sup>, 5<sup>th</sup>, 10<sup>th</sup> 2016. The purpose of treatment was to compare which strategy is more effective between Preview, Question, Read, Reflect, Recite, Review (PQ4R) or Know - Want - Learnt (KWL) in teaching reading comprehension. In treatment, the researcher applied PQ4R and KWL strategy in different group.

Here, after the students were giving the different treatment for different group related with the topic, they were given a test in the form of reading test. It was conducted through post test, because this test administered after the treatment has been given. The researcher administered post test on March, 12<sup>th</sup> 2016 after the treatments. The result of the post test in the form of score was compared to get the differences.

## **2. Research Instrument**

Research instrument can be defined as a tool or media that used by the researcher to get the data. According to Arikunto (1996) instrument is a media used by the researcher in collecting the data. The instruments were used to collect data in order to answer the research question. The instrument of this study used reading comprehension test.

Here the researcher gave a reading comprehension test in the form of multiple choices. The researcher used multiple choices items because the scoring can be perfectly reliable and undoubtedly one of the most commonly used type in objective test. Multiple choice test technique has some advantages. The most obvious advantage is that scoring can be perfectly reliable. Scoring should also be rapid and economical.

The question consisted of 20 multiple choices. Those questions included of main idea, explicit meaning, implicit meaning, and also meaning words. The test is administered at the end of the meeting after giving taught by using PQ4R and KWL strategy in each class.

### **F. Validity and Reliability Testing**

Validity and reliability of instrument are integral part in conducting a study since the instrument which will be used must be valid and reliable before using it to collect data in this study. The researcher ensured that the instrument (test) was valid and reliable by doing validity and reliability testing as follows:

## 1. Validity

The most complex criterion of an effective test and the most important principle of language testing is validity. According to Lodico, et al (2006:87) state that validity focuses on ensuring that what the instrument “claims” to measure is truly what it is measuring. Validity indicates the instruments’ accuracy.

A valid test of reading ability actually measures reading ability, not previous knowledge, nor some other irrelevant variable. Before conducting the researcher ascertained that the instrument had two kinds of validity as follows:

### a. Content validity

A test will have content validity if it includes a proper sample of the structure or content which is relevant with the purpose of the test. It means the content must represent the sample of the language skills, structures are being tested. Moreover, the instrument in this study achieved content validity since the test was designed based on standard and basic competence in KTSP since the school implements KTSP curriculum. Table 3.1 shows the standard and basic competence in KTSP curriculum.



**Table 3.1: Standard competence and Basic Competence in KTSP Curriculum**

Standard Competence	Basic Competence
1.1 Understanding the content of the simple short functional text in the form of recount and narrative text to interact with immediate environment.	1.1.3 Responding the meaning in the written text correctly, accurately and politely related with daily life to interact with the environment in the form of recount and narrative text.

In this study, the content of question in testing used narrative text. It was suitable for the students of second year in Junior High School, since narrative text is one of some text that has to be mastered by the students in second grade of junior high school based on the KTSP curriculum. In addition, before the researcher contribute the test to the subject of the research, the researcher also consulted the instruments related to the question with some teachers who expert in teaching English language especially in reading.

In this case, the researcher made four indicators of the test. They are: (1) find the main idea of narrative text, (2) find the implicit information of narrative text, (3) find the explicit information of narrative text, (4) find the meaning word in the narrative text.

The indicators stated above were tested in items of post test. The first indicator was tested in test item number 4 and 11. The second indicator was tested in the test item number 1, 8, 16 and 2.

The third one was tested in the test item number 3, 5, 6, 7, 9, 12, 13, 15, 17, 18, 19 and 20. The last indicator was tested in the test item number 10 and 14.

From the explanation above, it could be concluded that the test had a content validity.

b. Construct validity

A test is said to have construct validity if it can be demonstrated that it measures just the ability which is supposed to measure. Construct validity deals with the relationship between a test and a particular view of language and language learning (Johnson: 2001). The word construct refers to any underlying ability which is hypothesized in a theory of language ability. So, this construct validity refers to the theory of language learning. Here, the researcher used construct validity in administering reading test based on the form of multiple choice tests.

c. Face validity

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 judgement or examinees who take it, the administrative personnel who decide on its use, and other psychometrically unsophisticated observers (Brown, 2004). The test in this study was designed to measure students' reading comprehension ability in narrative text. Thus, to achieve face validity,

the researcher provided the instruction to ask the students to read and understanding the text.

## 2. Reliability

Reliability is the consistency of the instrument in producing the same score on different testing occasions or with different raters. According to Lodico, et al (2006: 87) Reliability refers to the consistency of scores, that is an instruments' ability to produce "approximately" the same score for an individual over repeated testing or across different raters.

Before the post test was given, the researcher conducted a try-out for the test to the different subject (12 students of D class) to know how far the reliability of the instrument. Then the researcher analyzed each item of instrument and computed it by using SPSS 16.0 version. To measure the reliability of the test, Kuder-Richardson Reliability Formula is used. To get Kuder-Richardson reliability, it requires test administration only once. One correct answer is given point one, while incorrect answer is given point zero. The formula is as follow:

$$KR-20 = \frac{K}{K-1} \left[ 1 - \frac{\sum pq}{s^2} \right]$$

In which:

K= number of items

P = proportion of correct answer for an item

Q = proportion of incorrect answer of an item

S<sup>2</sup> = variance

The result of that formula showed the reliability of the test with the criteria.

Table 3.2 : **Criteria of Reliability Testing**

The Criteria	The Description
$r < 0.40$	The reliability is low
$0.40 < r \leq 0.80$	The reliability is moderate
$0.80 < r$	The reliability is high

Based on the test that has been done on March 1<sup>st</sup> 2016, the result of the test showed the reliability as follow:

$$\begin{aligned}
 \text{KR-20} &= \frac{K}{K-1} \left[ 1 - \frac{\sum pq}{s^2} \right] \\
 &= \frac{20}{20-1} \left[ 1 - \frac{1.451}{8.061} \right] \\
 &= \frac{20}{19} [1 - 0.180] \\
 &= 1.05 [0.82] \\
 &= 0.861
 \end{aligned}$$

The result of the reliability testing was high. It means that the test was reliable.

## G. Normality and Homogeneity Testing

### 1. Normality Testing

Normality testing is used to know whether the instrument has normality or not. To find the normality of the instrument, the researcher used one sample Kolmogorov Smirnov.

The instrument can be called as has normality if Asymp sig  $>$  0.05 so that Ho (null hypothesis) is accepted and Ha (alternative hypothesis) is rejected. It was also can be concluded as follow:

- a. Ho : The data is in normal distribution
- b. Ha : The data is not in normal distribution

Here, the result of normality instrument computed by using SPSS 16,0 version. It can be seen as follow:

Table 3.3: Table Normality Using One Sample Kolmogorov Smirnov

One-Sample Kolmogorov-Smirnov Test		PQ4R	KWL
N		30	30
Normal Parameters <sup>a</sup>	Mean	83.17	78.3333
	Std. Deviation	7.008	8.44182
Most Extreme Differences	Absolute	.203	.180
	Positive	.130	.148
	Negative	-.203	-.180
Kolmogorov-Smirnov Z		1.113	.985
Asymp. Sig. (2-tailed)		.168	.287
a. Test distribution is Normal.			

Based on table above, it showed that the value of Asymp. Sig (2-tailed) in PQ4R was 0.168 and the value of Asymp. Sig (2-tailed) in KWL was 0.287 which are both of them higher than 0.05 ( $0.168 > 0.05$  and  $0.287$

$> 0.05$ ). So that it can be resulted as  $H_0$  (null hypothesis) was accepted and  $H_a$  (alternative hypothesis) was rejected and also it can be interpreted that both of them have normal distribution.

## 2. Homogeneity Testing

Homogeneity test intended to show that two or more groups of data samples come from population having the same variance. To know the homogeneity, the researcher used Two Way Anova with SPSS 16.0 version. The result can be seen in the table below:

Table 3.4: Test of Homogeneity of Variances

**Test of Homogeneity of Variances**

NILAI

Levene Statistic	df1	df2	Sig.
2.071	1	58	.156

**ANOVA**

NILAI

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	147.267	1	147.267	20.266	.000
Within Groups	421.467	58	7.267		
Total	568.733	59			

Based on the result above the significance (Sig) was 0.156. It showed that the groups or samples have the same variance, because the Sig was  $0.156 > 0.05$ .

## **H. Data Analysis**

The purpose of this research was to compare the score of teaching reading by using PQ4R (Preview, Question, Read, Reflect, Recite, Review) and KWL (Know- Want- Learnt) strategy at a second year of students SMPN 1 Sumbergempol Tulungagung. The data were gained from the test, and then the researcher analyzed the data by using SPSS 16.0 version. It was counted to find out the mean, median, and standard deviation of variable X1 and X2. The procedure of analysis the data both used descriptive and inferential statistic.

## **I. Range**

Range is the number of points between the highest score on a measure and the lowest score. The formula is as follow:

$$R = H - L$$

Where:

R = Range, H = High score, and L = Low score

## **J. Inferential Statistic**

After got the description of the scores, the researcher used T-test formula. The researcher used T-test to know significant differences of teaching reading

by using PQ4R and KWL strategy at second year of SMPN 1 Sumbergempol.

After collecting the data, the researcher analyzed by using independent sample

T-test formula states by Sudijono (2010), as follow:

$$t = \frac{M1 - M2}{SEM1 - M2}$$

**Notes :**

t = t score / t statistic

M1 = Mean of PQ4R

M2 = Mean of KWL

SEM1-M2 = Standard Error of Mean of Difference