CHAPTER III
RESEARCH METHOD

This study conducted to find the answer of the research problem states earlier. To clarify these problems, this chapter devoted to the discussion of research design, population and data collection technique.

3.1 Research design

Research design of research used an experimental research. According to Wiersma (1991:99) experimental design is preconceived plan for conducting an experiment. According to Ary (2010:217) stated that experimental research is a scientific research that is conducted to manipulate independent variable, to observe the influence of dependent variable and to control the relevant variable.

Based of this research, the independent variable is POSSE as a technique for teaching reading while the dependent variable of this research is the students' achievement focus on reading comprehension which are measured by post-test after giving the treatment. Here, the research use POSSE technique as treatment.

The experimental design of this research is quasi experimental research. Since the researcher is impossible to conduct true experimental in Thailand senior high school because true experimental need on randomize the variable. It means that the researcher has to change the classification of the class. So, the researcher conducted quasi experimental with non-randomized subject. Based on of Ary et,al (2010), quasi experimental carries out different subject which can be randomly assigned to treatment group to type of school situation and class.

This study will use reading test to collect the data. The data will be got from participants who are in eleventh grade of Senior High school

Khanaratbamrung Yala. The test will be give after explaining the course content. There are three procedure to get the result of this study. First of all is deciding the test to the student who have been chosen to be the participant. Second of all is giving the test to the participants. The third of all is processing the data. The design could be described as the following in below:

Table 1 Pre-test, Post test Quasi experimental Design

Group	Pre-test	Treatment	Post- test
Experimental	**/**	**/**	**/**
Control	**/**	**-**	**/**

Note :

/ : With treatment

- : Without treatment

From table above shows that experimental group and control group are given pre-test and post-test, but they receive different treatments. The experimental group teaching with POOSE strategy treatment, while the control group without using it.

3.2 Population and sample

All members of any well-define class of people, events or objects is calls population (ary, 1985 :138) The population of this research is the students in the second grade of senior high school at khanaratsadon Yala, in the first semester 2019/ 2020 academic year that consists of two classes, there are XI A class and XI B class.

According to Ary (1985:138) The sample is a subgroup of the target

population that the researcher plans to study for the purpose of making generalizations about the target population. So the research takes two classes as the sample based on the students' ability in reading comprehension, there are XI A class and XI B class and every class consists of 43 student. Then, the research divide the students into two groups experimental and the control group. The experimental group is A class and B class because the students had the equal characteristics in the average score of the previous semester.

3.3 Data collection

3.3.1 Research Instruments

The good instrument is used in research must be valid and reliable, validity to the degree to which a test measures what is supposed to be measured (Gay,1992;155). The research instrument is so necessary the scientificing. The success of this research instrument greatly depends on the role which was made. While the research acts as the practitioner who had the important roles to do this research. Here, the researcher used a Pre-test to measure the prior knowledge. To make the test valid, the researchers search for another class which had an equal characteristic as the characteristics of A class and B class students.

Moreover, the steps in the implementation of POSSE strategy as follow:

1) The teacher gives leading question
2) The teacher gives explanation about learning material and the use of POSSE strategy on Google classroom
3) The students are given POSSE strategy sheet

4) The teacher tells to the students that the title of text and shows the picture series, then asks the students about their ideas related to the pictures or key word.
5) The students write down their prediction in POSSE strategy sheet.
6) The students are asked to organize their prediction in the concept map based on the categories in the text.
7) The teacher give the text on the Google classroom
8) The students is given a text
9) The students read the text to confirm their prediction and to find the main ideas
10) Students are asked to write down the main ideas in several sentence and questions related main ideas of the text
11) The teacher asks the students to compare their concept map (organize step) with concept map (search step); clarify the difficult word and phrase; predict what the next section will be about
12) The teacher and students conclude the materials.

On the other hand, in control class pre-test and post-test are used to measure the students‟ reading comprehension which didn't teach by using POSSE strategy (using Lecturing strategy). The steps in implementation of lecturing strategy as follow:

1) The teacher gives leading question
2) The teacher gives explanation about learning material and the use of POSSE strategy
3) The students are given POSSE strategy sheet

4) The teacher tells to the students that the title of text and shows the picture series, then asks the students about their ideas related to the pictures or key word.
5) The students write down their prediction in POSSE strategy sheet.
6) The students are asked to organize their prediction in the concept map based on the categories in the text.
7) The teacher give the text on the paper
8) The students is given a text
9) The students read the text to confirm their prediction and to find the main ideas
10) Students are asked to write down the main ideas in several sentence and questions related main ideas of the text
11) The teacher asks the students to compare their concept map (organize step) with concept map (search step); clarify the difficult word and phrase; predict what the next section will be about
12) The teacher and students conclude the materials.

The research instrument that was used by the research to collect the data in this research was written test. The form of the test uses multiple choice test which consist of twenty items. The test is divided into two part; pre-test and post test. The pre-test is given to know the students' condition before getting the treatment. Meanwhile, the post- test is used to know whether any significant effect on students reading comprehension by using POSSE strategy or not.

3.3.1.1 Test

Before giving treatments the researcher gave pre- test to know the previous ability of the student in XI class. The research need to administer a pre-test. This test is administered toward both experiment and control group which aim to meet student's ability in reading comprehension, with level of material difficulty during treatment especially for experiment group and also to obtain information related to the equality of student's cognitive aspect then in the classroom. The contents both of pre-test and post test ware taken in website trueplookpanya set 6 on 2017 and set 11 on 2019 and matching with syllabus.

3.3.1.2 Pre – Test

Before giving treatments the researcher gives pre-test to know the previous ability of the students both of class. Pre-test had some procedures to support this research. That procedure describes as follows: before receiving the treatment, the research give the test consist on 20 items. The test was in form of multiple choices items. The questions of the test were related to their material what will be learned. After finishing the test, the students' submitted their work. Then, the research evaluated the students' task. Pre-test conducted to two group including the experimental and control group.

3.3.1.3 Post Test

Post-test was administered after giving the treatment to the experimental group and given to the student both of experimental and control group. In then the research give post to measure the students' progress after giving the treatment use POSSE strategy to the experimental group. Those are post test. Pre-test is given before the taught and the post test is given after the material was taught, in the last

meeting of total number of research.

3.3.2 Validity and Reliability

3.3.2.1 The Validity of the test

Accroding to Tuckman (1975:229) validity refers to whether a test measures what we intent it to measures what we intent it to means that, validity is an instrument that made as a measurement to measure items is valid or not. Before conducting the pre-test and post-test as instrument of research, the researcher will test the validity of the items. According to Brown (2004) Tests can be declared valid if the test has a purpose, meaning and is useful in testing.

In this study, the researcher used content validity to analyze the test. According to Ary (1990) content validity can determine whether the test items reflect the course and its objectives in the curriculum, syllabus and textbooks, so that we can suggest that content validity is not always in the form of numbers. In this study, the validity of the test is based on core competencies and basic competencies because the researcher also gave a test based on the syllabus and made a table criteria of assessment.

3.3.2.2 The reliability of the test

Reliability of the test also can be defined as the extent to which a test procedures consistent result when administered under similar condition (Hatch and Farhady, 1982:243). The concept of reliability stems from the idea that no measurement is perfect, even if one goes on the same scale today and then again tomorrow, there will always be differences in his weight which result of the fact that measuring instrument are not perfect. To measure the coefficient of the reliability between odd and even group, this research use the Pearson Product

Moment Formula (Arikunto, 1997).

$$rxy = \frac{\sum xy - (\sum x)(\sum y)}{\sqrt{[N\sum x^2 - (\sum x)^2][N \sum y^2 - y)^2]}}$$

Where:

r : coefficient of reliability between odd numbers items x : total number of odd numbers items

y : total number of even numbers items

N: number of pupils who take part in the test

X2 : square of x

Y2 : square of y

Σx : total score of odd number items

Σy : total score of even number items (Arikunto, 1997:69)

Then this research uses “Spearmen Brown Prophecy formula” (Hatch and Farhady, 1982:246) to know the co-efficiency correlation of whole items.

The formula is as follow:

$$r11 = \frac{2rxy}{1+rxy}$$

Where:

r11 : the reliability of the test

rxy : the reliability of half test The criteria of reliability are:

0.90 – 1.00 : high

0.50 – 0.89 : moderate 0.0 – 0.49 : low

(Hatch and Farhady, 1982:246)

If the result of reliability is less then 0,50 then the item should be revised.

3.3. The procedure of collecting data.

Here is the procedure how the data is collected:

1. Organize the test that will be given to the participants.
2. Give instruction to the participants to do the test.
3. Check and analyse the students' result.

3.4 Data Analysis

In this research, after the data is collected the research analyzes the data that the researcher got. In analyzing the data, the researcher uses the independent sample t-test in SPSS version 17.0 programs. Independent sample T test is to compare the score of the experimental and control group. The researcher used SPSS version 17.0 programs to compere a significant difference whether there is positive effect of using POSSE strategy.

After the test given to the student in students in the pre -test and post test, it will be test. The test is focused on student's pre -test and post test. The result from the test will be analyzed first by assumption Test, Those are: the of normality and test of homogeneity. It is calculated because to know the next step of the formula of normality and homogeneity

3.4.1 Normality Distribution Test.

Normality distribution test is used to determine whether or not the data

between two group are normality distributed. The researcher uses normality distribution test because the research want to know the data between experimental group and control group to the students' reading comprehension are in normal distribution or not, to know the normality, the researcher uses Kolmogorov Smirnov Sample test in SPSS Version 17.0

3.4.2 Homogeneity Test of Variance

According to santoso (2006) found that homogeneity test of variance is used to test whether two sample that have been taken have the same variance or not. It means that we need to test two sample that have been taken have the same variance or not .two sample is said the same variance if the significant value or the probability value is larger than the level of significant 0.05). While, if the significant value or the probability is lower than the level of significant (0.05) so that, those samples are not the same variance.

In this research, the researcher used independent sample test in SPSS version 17.0 program. The purpose of this test is to analyze the variances of the observation in experimental group and control group are homogeneous because the researcher cannot random the students. So, the homogeneity test is necessary to make sure the students in both of class have same ability in reading skill or not. After that the researcher can conduct the treatment

3.4.3 Hypothesis Testing

In hypothesis testing, the researcher also uses SPSS 17.0 Program. The hypothesis testing will be checked in independent sample t-test. Independent sample t-test is used to compare the difference of average between experimental group and control group

The steps in hypothesis testing as the following procedures

1. The first step was stating the hypothesis and setting the alpha level at 0.05 (two tailed test)
2. The seconds step was finding t-value using independent sample t-test formula and comparing the probability with the level of significance for testing the hypothesis.
3. The last was write the result of the tests were subjected to the following statistical procedure.

The hypothesis can be formulated as follow:

H0 = (null hypothesis) is 1μ-μ2= 0 (μ1=μ2)

H1 = (Alternatives hypothesis) μ1-μ2≠0 (μ1≠μ2)

H1 : Reading comprehension using cooperative integrated reading and using POSSE strategy

H0 : Reading comprehension without using cooperative integrated reading and using POSSE strategy

Hypothesis testing in this research was:

Hi : There is significant difference on the effect of REAP strategy in reading comprehension between experimental and control group.

$H0$: There is no significant difference on the effect of REAP strategy in reading comprehension between experimental and control group.

Criteria : Ho can be rejected if sig. (2-failed) < α, where (α = 0,05).

In analyzing the data , the researcher uses independent t-test formula. In calculating t-test, the formula as follow :

$$t = \frac{(x1 - x2) - (\mu1 - \mu2)}{Sx1 - x2}$$

Where :

t is t value

$x1$ is average group 1

$x2$ is average group 2

$\mu 1 - \mu 2$ is always defaults to 0

Where :

$$S_{X_1 - X_2} = \sqrt{\frac{S2\ pooledn}{n1} + \frac{S2\ pooled}{n2}}$$

$S_{X_1 - X_2}$: is standard error of two group

$S2pooled$: is variants of the two groups

n_1 : is number of sample group 1

n_2 : is number of sample group 2

Pooled variance: the average of the two sample variance, allowing the larger sample to weigh more heavily.

Formula:

$$S^2\text{pooled} = \frac{(df1)s21+(df2)s2\ 2}{df1+df2} \text{ or } S^2\text{pooled} = \frac{ss1+ss2}{df1+df2}$$

Claearly, the results of tests were subject to the the follwing statistical procedure. To calculate t-test, the researcher used SPSS version 17.0. According to Zawawi (2012), the post test of experimental and control group are as follow; first, input the data of post-test in SPSS program between experimental and control group, then click Analyze → Independent sample T-Test, after that in

Independent sample T-Test, Input the score variable into Test Variable, and for group variable into Grouping Variable, then click Devine Group, Chose group A (for Experimental) and Group B (for control), then click **OK**.