# CHAPTER III

# RESEARCH METHODOLOGY

## 3.1 Research Design.

The design of this research is an experimental research. Gay and Airasian (2000:367) argue that experimental research is the type of research that can test hypothesis to establish cause-and effect relationships. The design of this research is a quasi-experimental design which is focused on the non-equivalent control group. Gay and Airasian (2000:395) tell that the non-equivalent control group design involves random assignment of intact groups to treatments, two or more treatment groups are pre-tested, administered a treatment, and post tested. In conducting the research, 2 classes of the second year students were involved. The first class was an experimental class and the second class was a control class.

In this research, there are three variables. The first variable is SQ4R technique as variable X. The second and third variables are students' reading interest students' and reading comprehension as (Y1 and Y2).This research aims to find out whether there is any significant effect of using SQ4R Technique on students' reading interest and their reading comprehension at SMAN 1 Pangkalan Kuras Pelalawan. This research design can be seen as follows:

```
O1      X      O2  (Experimental group)
-------------------------
O3             O4  (Control group)
```
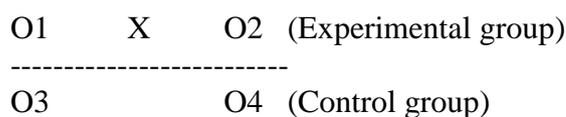
In which:

O1 and O3 = Pre-questionair

O2 and O4 = Post- questionair

X　　　　= Treatment by using SQ4R technique.

and

O1　　X　　O2　(Experimental group)
--------------------------
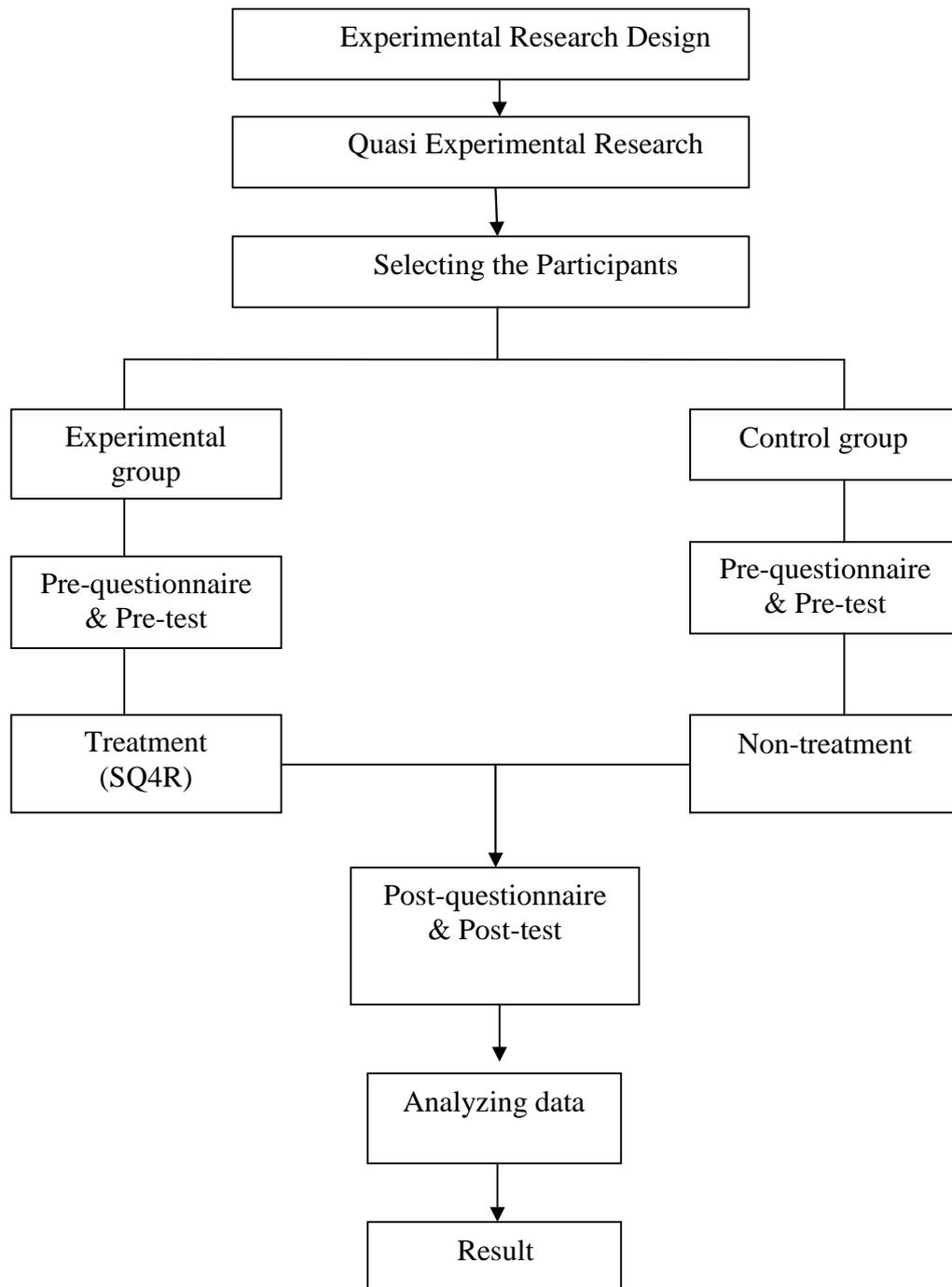O3　　　　　O4　(Control group)

In which:

O1 and O3 = Pre-test

O2 and O4 = Post-test

X　　　　= Treatment by using SQ4R technique.

**Cresswell,** (2008:314)

**Figure 1**

**Research Procedures**

```
┌─────────────────────────────────────┐
│    Experimental Research Design      │
└─────────────────────────────────────┘
                  │
                  ▼
┌─────────────────────────────────────┐
│      Quasi Experimental Research     │
└─────────────────────────────────────┘
                  │
                  ▼
┌─────────────────────────────────────┐
│       Selecting the Participants     │
└─────────────────────────────────────┘
```

| Experimental group | Control group |
|---|---|
| Pre-questionnaire & Pre-test | Pre-questionnaire & Pre-test |
| Treatment (SQ4R) | Non-treatment |

```
        ┌──────────────────────────┐
        │   Post-questionnaire      │
        │      & Post-test          │
        └──────────────────────────┘
                  │
                  ▼
        ┌──────────────────────────┐
        │      Analyzing data       │
        └──────────────────────────┘
                  │
                  ▼
        ┌──────────────────────────┐
        │         Result            │
        └──────────────────────────┘
```

**3.2 The Location and Time of the Study**

This study was carried out at SMAN 1 Pangkalan Kuras Pelalawan. The study was conducted from October up to November 2016

**3.3 Population and Sample**

The population of this research was the Second year students of SMAN 1 Pangkalan Kuras Pelalawan in academic year of 2016/2017. The total of the second year students were 339 students. Two classes were chosen as samples of this research. The samples were Social Science (IPS) 1 which consisted of 38 students and XI Social Science (IPS) 2 consisted of 38 students who chosen as samples of this research. The total number was 76 students.

Two classes that taken as samples of this research by using cluster sampling. According to Cresswell (2006) cluster sampling refers to randomly-selected groups, not individual and all members of selected groups have similar characteristics. It means that the subject of this research had the same material, the same grade, and the same teacher in teaching these classes.

The sample was a cluster sampling. That had been taken two classes at SMAN 1 Pangkalan Kuras Pelalawan as the samples , the first was XI Social Science (IPS) 1 consisted of 38 students were taught by using SQ4R Technique. The second was XI (IPS) 2 consisted of 38 students were taught without by using SQ4R Technique. So, in this research, the total sample was 76 students.

**Table 3.1**
**The total sample of the Research**

| NO | Class | Male | Female | Total |
|----|-------|------|--------|-------|
| 1 | XI IPS 1 | 23 | 15 | 38 |
| 2 | XI IPS 2 | 26 | 12 | 38 |
| | **Total** | | | **76** |

**3.3.I Research Variable**

**a. Independent Variable:** The independent variable is the technique which is used to conduct the research. In this research, there is namely SQ4R Technique (Survey,Question, Read, Recite, Review, Reflect)

**b. Dependent Variable:** Dependent variables in this research are students' Reading interest and reading comprehension.

**3.3.2 Instrumentation**

**A. Pilot study**

A pilot study is a standard scientific tool for the scientific research

**1. Writing proposal of the Research**

The title of this research is the effect of using Survey, Question, Read, Recite, Review, Reflect (SQ4R) Technique on students' Reading interst and their reading comprehension at SMAN 1 Pangkalan Kuras Pelalawan. This is an experimental research which consisted of three variables; 1 independent variable X (Survey, question read, recite, review, reflect technique and 2 dependent variables ; Y1 (Reading interest) and Y2 (Reading comprehension). This research

has been conducted at SMAN 1 Pangkalan Kuras Pelalawan in Oktober to November 2016 in which the subject of this research was the second year students. There were two classes which involved; one experimental class (taught by using SQ4R Technique and one control class (taught by using Three Phase Technique).

## 2. Preparation of the Study

Preparation is one of the important steps that must be done before conducting the research. The writer prepares everything related to what is needed to the implementation of teaching process such as;

### a. Instrument

Instrument is the most important things. To collect the data, reading test was administered as the instrument of this study. The pre-test and post-test were administered to two classes. The pre-test was administered before the treatment and the post-test aimed at finding out the students' reading comprehension after treatment. The treatment has been given by teaching with SQ4R Technique. This activity also intended to find out whether the students' skill keeps holding of the material after doing the treatment.

### b. Teacher Trainning

The English teacher was trained in order to make her easy to implement the Technique in the experimental class. The SQ4R technique was explained to the English teacher. The materials like; lesson plan, module, and question books and answer sheets were prepared to the English Teacher.

**c. Conducting the try out**

The try out was conducted for the students at the third grade by giving the questions that already prepared in order to know the questions were valid and reliable to be pre-test and post-test.

**d.    Analyzing validity and reliability of the instrument**

After gaining the result of the try out, the writer analyzed each question to know whether it is valid and reliable or not by using SPSS 20. If the questions are valid and reliable, it is used as the questions for pre-test and post-test.

**3. Module and Blue Print**

For the instructors, the primary mode, of course delivery was through module. The module was used in this research, it was adapted from a text book as a handbook by the students in this school and  internet. The writer adapted the text and when created the questions based on indicators that wanted to be mastered by the students. There were eights of reading texts were taken in this research they were: Report, Narrative, Analytical Exposition, and Procedural text that provided in this module. The titles are: White Pelican, Gorillas, The Greedy dog, A little thing which inspires People to do greater things, The importance of English, The cars should be banned in cities, How to measure the Blood Glucose, and How to make Egg sandwich

In collecting the data, the writer used a test as the instrumentation. According to Brown (2001: 384), a test is a method of measuring a person's ability or knowledge in a given domain. A Questionnaire was used to measure the level of students' interest toward reading. While a test was used to determine the

students' reading comprehension in Report, narrative, Analytical Exposition and Procedural text. The type of the test were multiple choice test for interest and reading comprehension which consisted of 30 questions for each variable.

Three steps of the test was applied in this research. The first was trying out that was given to other samples of the research, the second was a pre-test that was given to both of experimental and control class students, and the last was post test that was given to both of experimental and control class students after giving the treatment. The following table shows the blue print of the questionnaire.

**Table 3.2**
**Blue Print Item of interest Questionnaire test**

| No | Interest indicators | Number of Items | Total Items |
|----|---------------------|-----------------|-------------|
| 1 | Attention is focused toward reading | 1,2,3,4,5 | 5 |
| 2 | Feeling | 6,7,8,9,10 | 5 |
| 3 | Eagerness | 11,12,13,14,15 | 5 |
| 4 | Responses | 16,17,18,19,20 | 5 |

**Table 3.3**
**Blue Print of Reading test Item**

| No | Reading indicators | Number of Items | Total of Questions |
|---|---|---|---|
| 1 | Indentifying genre | 8, 11, 20, 22 | 4 |
| 2 | Finding the Topic | 3, 5, 12, 21, 24 | 5 |
| 3 | Finding the main idea | 4, 6, 13, 16 | 4 |
| 4 | Finding the factual information | 7, 19 , 25, 27 | 4 |
| 5 | Identifying the purpose | 1, 14, 23, 29 | 4 |
| 6 | Finding Reference | 9, 17, 26, 30 | 4 |
| 7 | Finding Inference | 2, 10, 15,18, 28 | 5 |

**4. Procedure of using Technique (SQ4R Technique)**

In this research, it is very important to explore the procedure of teaching and learning process by using SQ4R Technique, the procedures are in the following:

**3.3. 3 Pilot Study (Module)**

A Module is a tool or media in teaching and learning process which consists of the material, technique, and evaluation. They are planned sistematically and interestingly to obtain the basic competence based on its level of difficulty. (Sardiman; 2004). Module in this study is the teacher's guidline to apply SQ4R Technique in teaching and learning reading comprehension. This module guides the teacher how to apply the Technique precisely to identify whether this Technique could improve the students' participation in teaching and learning process, and to improve their reading comprehension as well. The example of the module and its lesson plan can be seen in the appendix. In this chapter the researcher writes the draft of the modul as follow:

a. The title of the modul " The Implementation of effective Technique in teaching reading"

b. The competence: responding the meaning and language rethoric in simple short in a text, genre, topic, main ideas, factual information, purpose, reference and inference.

c. The purpose of the module: a) to guide the teacher in applaying SQ4R Technique to improve the students' reading comprehension.

d. Material: is some texts taken from the second year English book at SMAN 1 Pangkalan Kuras. Moroever, sources were taken from students' book and worksheet, they were Gorillas, the white pelicans, the greedy dog, Little thing inspire one to do greater things, The importance of english Language, Cars should be banned in cities, How to measure the blood glucose and how to make an egg sandwich.

e. The Steps of teaching reading:

**Step 1:**   Prepare the text by marking four or five good stopping points. Plan stopping points to fall at moments of suspense in the text.

**Step 2:**   The teacher explains to the students that they will read the text, one bit at a time. Remind them that it is important not to read beyond the stopping points. They will be making predictions and reading to confirm those predictions.

**Step 3:**   The teacher asks the students to read the title of the text and skim a text. Then asks the students to Look at the chapter objectives, topic headings, and pictures. This peek at the chapter allows the students to focus on the prevailing subject before getting bogged down in details.

**Step 4:** The teacher asks the students to develop questions based on the overview they did. They are free to ask questions as many as possible that deals with the text, meaning that to anticipate what the text about.

**Step 5:** The teacher asks to the students to read the text comprehensively and repeatedly while trying to get the author's ideas. It will relate to the questions that they made before, so if they read carefully they must know the understanding of the text.

**Step 6:** The teacher asks for the students to take notes. The students can ask their self-questions about what they have just read and summarize, in their own words and connect the new information with what they already know.

**Step 7:** Then, Students should study their outlines and notes and be able to retell what was read in their own words. Students should try to see relationships within the content.

**Step 8:** Finally, the students clarify their thinking and focus understanding. By reflecting on the reading, students begin to think critically about what they have learned and have yet to learn about the topic.

f.  Evaluation : the researcher checks the students' skill in identifying their reading comprehension. The test will be developed based on the indicator in the school syllabus. The example of the pilot study can be seen in the appendix.

**3.4 The procedure of research**

**3.4.1 The teaching procedure in experimental class:**

The SQ4R technique was conducted at experimental group for four meetings. The procedure of the SQ4R technique:

1. **Pre-Reading Activity**

   - The teacher checks the students' attendant list

   - The teacher says greeting

   - The teacher gives the motivation to the students

   - The teacher asks about the last material in reading

   - The teacher teaches the students to use SQ4R technique

2. **While Reading Activity**

A. **Survey**

   In the first step the students take a couple of minutes to skim the text and the title. The students don't read it. This peek at the text allows the students to focus on the prevailing subject before getting bogged down in details.

B. **Question**

   In this step, the students were asked to make questions based on the overview they did. They were free to ask questions as many as possible that deals with the text meaning that to anticipate what the text about.

## C. Read

Students are asked to read the text comprehensively and repeatedly while trying to get the author's ideas. It will relate to the questions that they made before, so if they read carefully they must know the understanding of the text.

## D. Recite

In this step, the students answer their questions. The students can ask their self questions about what they have just read and/or summarize, in their own words and connect the new information with what they already know.

## E. Review

In this step, Students should study their notes and be able to retell what was read in their own words. Students should try to see relationships within the content.

## 3. Post Reading Activity

## F. Reflect

In the last step, the students clarified their thinking and focus understanding. By reflecting on the reading, students begin to think critically about what they have learned and have yet to learn about the topic.

### 3.4.2. Teaching procedure in control group

In control class the teacher just used conventional technique in teaching reading, the steps are:

1. Pre-Reading Activity

   - The teacher says greeting

   - The teacher checks the students' attendant list

   - The teacher gives the motivation to the students

   - The teacher asks about the last material in reading

2. While Reading Activity

   - The teacher asks about the topic which the teacher wants to explain

   - The teacher explains about the material

   - The teacher asks the students to do excercise

3. Post Reading Activity

   - The teacher checks the students' comprehension in reading

   - The teacher gives the score to the students based on what the students have done.

### 3.5. The Data Collection Technique

In this research, the researcher collects the data by distributing the questionnaire and test to the students. The questionnaire aimed to identify the level of students' reading interest. It was consisted of 20 items. The test consist of relevant passages where each of the passages consisted of four or five questions

related to the passages of reading comprehension test of each reading text because it is considered that the time and the procedures of SQ4R technique and the duration was 90 minutes to conduct all activities. Then, the students will answer the multiple choices from the test based on the information from the given passage. The technique of collecting the data in this research is a set of a Questionnaire and a reading test to the second year students of SMAN 1 Pangkalan Kuras Pelalawan.

The researcher administered 20 items of questionnaire to gain the data about students' reading interest and multiple choice test on the entire sample in order to measure the students' reading comprehension. The instrument consists of several texts followed by 30 comprehension questions based on the text. The questionnaire and test were administered twice that can be explained as follows :

1. Pre-questionnaire and Pre-test were done before the samples got the treatment (using SQR4 technique). The purpose of pre-test was to measure the students' reading comprehension before the treatment.

2. Post-questionnaire and Post-test were done after the samples of experimental group gotten the treatment. Students of the experimental group received instruction through the proposed SQ4R technique, whereas students of the control group received instruction through the traditional technique. The purpose of the post-questionnaire and Post-test were to measure the students' reading interest and their reading comprehension by using SQ4R technique.

The classification of the students' score for reading comprehension tests is shown below:

**Table 3.4**

**The Classification of Students' Score**

| No | Score | Classification |
|----|-------|----------------|
| 1 | 81 – 100 | Excellent |
| 2 | 61 – 80 | Good |
| 3 | 41 – 60 | Mediocre |
| 4 | 21 – 40 | Poor |
| 5 | 0 – 20 | Very Poor |

**(**Harris, 1986)

**3.6. Validity and Reliability of  Test Instrument**

To obtain the data from the participants, the writer made try out the questionnaire to determine the validity and reliability of the instruments, then, analyzing the reliability and validity used SPSS 20.

**1.  Reliability**

Brown, (2003) asserts that the reliability has to do with accuracy of measurement. This kind of accuracy was reflected in obtaining similar results when the measurement was repeated on different occasion or with different instruments or by different persons. Brown state that The characteristic of reliability was sometimes termed consistency. The following table is the level of internal consistency of Cronbach Alpha.

**Table 3.5**

**A commonly accepted rule of thumb for describing internal**

**consistency by using cronbach alpha**

| Cronbach Alpha | Internal Consistency |
|:---:|:---:|
| .9 | Excellent |
| .9 >　.8 | Good |
| .8 >　.7 | Acceptable |
| .7 >　.6 | Questionable |
| .6 >　.5 | Poor |
| .5 > | Unacceptable |

To obtain the reliability of the test given, the writer used SPSS 20 program
to find out whether or not the test was reliable.

**Table 3. 6**

**Cronbach Alpha Table**

**Reliability Statistics**

| Cronbach's Alpha | N of Items |
|:---:|:---:|
| .846 | 40 |

From the table above, it can be seen that the value of cronbach's alpha is
that 0.846. It means that the items are reliable, in which the value of internal
consistency is .9 > .846　.8, so the reliability of the test is **Good**.

## 2. Validity

Creswell stated that validity is the individual's scores from an instrument make sense, meaningful, enables you, as the researcher, to draw good conclusions from the sample you are studying to the population (Creswell 2008:169). It means that validity is the extent to which inferences made from assessment results are appropriate, meaningful, and useful in terms of the purpose of the assessment.

To analyze the validity of data, the researcher analyzed by inter item validity used SPSS 20 program. The following table is the criteria of items validity.

**Table 3. 7**

**The criteria of items validity**

| R | Interpretation |
|---|---|
| $0,80 < r \leq 1,00$ | Very High |
| $0,60 < r \leq 0,79$ | High |
| $0,40 < r \leq 0,59$ | Average |
| $0,20 < r \leq 0,39$ | Low |
| $0,00 < r \leq 0,19$ | Very Low |

**Table 3. 8**

**The analysis of try out reading comprehension validity**

| Item | R | Interpretation of Validity | Status |
|---|---|---|---|
| 1,2,3,4,5,12,14,15, 17,20,21,23,26,27, 28,30,31,32,33,35, 36,37,38,39,40. | 1.00, 0.95, 0.90, 0.95, 0.90, 0.85,0.90, 0.90, 0.90, 0.80, 0.85, 0.90, 0.80, 0.80, 0.85, 0.85, 0.95, 0.95, 1.00, 1.00, 1.00, 1.00, 0.95, 1.00, 0.80 | Very high | Valid |
| 6,7,8,11,16,18,24, 25,29, | 0.70, 0.75, 0.70, 0.75, 0.70, 0.70, 0.75, 0.70, 0.60 | High | Valid |
| 9,10,22,34. | 0.55, 0.45, 0.45, 0.45 | Average | Invalid |
| 13, 19 | 0.10, 0.05 | Very low | Invalid |

Based on the tryout result of the test instrument validity to the 40 items, it shows that 33 of the items are valid. It means that the instrument can be used in this research.

**3.7. Data Analysis Technique**

To analyze the data about the significant difference before and after of students' interest and their reading comprehension between those that have been taught by using SQ4R Technique at SMAN 1 Pangkalan Kuras Pelalawan, the data used analyzed statistically. The independent sample t-test and paired sample t-test were used by using SPSS 20 version (Statistic Package for the Social Sciences).

**3.7.1. T-test**

T-test is used to find out the difference between scores of pre-test and post test taken from the experimental group using SQ4R Technique and the difference between scores of pre-test and post-test taken from the control group and the difference between the scores of both pre-test and post-test of the experimental group and control group.

**3.7.2. Independent sample T-test**

Parmjit et.al (2006:160) say that Independent sample t-test is used to find the significance of the difference between the means of two samples. Gay (2000:484) adds that the t-test for independent sample is used to determine whether there is a probably a significant difference between the means of independent sample t-test and dependent sample t-test is used to find out the results of the first and second hypotheses.

1. To analyze the final-test scores of an experimental group and a control group, SPSS 20 is used:

The t-table has the function to see if there is a significant difference among the mean of the score of both experimental and control groups. The t-obtained value is consulted with the value of t-table at the degree of freedom (df) = (N1+N2)-2 which is hypothesized

Ha: to > t-table

Ho: to < t-table

Ha is accept if to > t-table or there is an effect after being given the treatment SQ4R Technique on students' interest and their reading comprehension.

Ho is accept if to< t-table or there is no effect after being given the treatment SQ4R Technique on students' interest and their reading comprehension.

**3.7.3 Paired sample T-test**

Paired sample T-test is also known as non-independent sample t- test. Gay (2000; 488) states that for non independent samples is used to compare groups that are formed by some type of matching or to compare a single groups' performance on pre- and post-test or on two different treatments. In this time, paired sample T-test is to find out whether there is significant difference before and after using SQ4R Techniqueon students' interest and reading comprehension by using the pre-test and post score of the experimental group and control group. SPSS 20 is used :

The t-table has the function to see if there is a significant difference among the mean of the score of both pre-test and post-test. The t-obtained value is

consulted with the value of t-table at the degree of freedom (df)N-1 which is statistically hypotheses:

$H_o$: Probability value > 0.05

$H_a$: Probability value < 0.05

$H_o$is accepted if Probability value > 0.05 or there is no significant difference after using SQ4R technique on students' reading interest and reading comprehension.

$H_a$is accepted if Probability value < 0.05 or there is significant difference after using SQ4R Technique on students' reading interest and their reading comprehension.