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## CHAPTER III

### RESEARCH METHODOLOGY

#### III.1 Research Design

This research employed a quasi experimental design. Quasi-experimental research is a form of experimental research in which individuals are not randomly assigned to groups (Creswell, John W, 2009). This idea is supported by Johnson and Christensen (2008:156) who view that quasi-experimental research is research in which the researcher manipulates the independent variable and is interested in showing cause and effect relationships.

This study was a quasi-experimental research focusing on experimental comparison. Experimental comparison that compared two groups receiving different treatments. In this research, the researcher attempted to compare two groups who had the same level or characteristics without a control group. According to Ary *et. al* (2010) argue that in the experimental comparison the researcher compares groups that receive different treatments.

Hatch and Farhady (1982:24) state the experimental method is a method of research that can truly test hypothesis concerning with cause an effect relationship in the experimental research. The design of the research was by comparing two independent variables.

In addition, Gay, Mills, and Airisian (2009: 240) also state “experimental research is the only type of research that can test hypotheses to establish cause and effect relationship”. Gay (2000, 251) in particular argues that the experimental comparison has some types: 1) Comparison of two different approaches (A versus B); 2) Comparison of new approaches and the existing approach (A versus A); 3)

Comparison of different amount of a single approach (A liile of A versus a lot of A) in line with this explanation, this study used a comparison of two different approaches that compare two independent variables with one dependent variable. It is clear that there were three variables in this study; Magnet Summary Strategy ( $X_1$ ) and Herringbone Strategy ( $X_2$ ) as the independent variables, while the students' reading comprehension ( $Y_1$ ) as the dependent variable.

In this research, Magnet Summary Strategy was treated as  $X_1$  and Herringbone Strategy as  $X_2$  then variable  $Y$  was the students' reading comprehension labeled as  $Y_1$ . Two groups were treated as the experimental group 1 and the experimental group 2.

Creswell (2008: 314) says that experimental research design can be seen as follows:

Group	Test	Treatment	Test
Experimental 1	O1	X1	O2
Experimental 2	O1	X2	O2

(Gay, 2000)

Description:

O1 : Pre test

O2 : Post test

X1 : Magnet Summary strategy

X2 : Herringbone strategy

Gay (2000) states this design requires at least two groups; each group is formed by way of random assignment. Both groups in this study were

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administered a pre- test and each of them received different treatments. At the end of the research, both groups were administrated a post- test. The post- test scores were compared to determine the effect of the treatments.

### III.2 The Location and the time of the Research

This research was conducted at SMK Kansai Pekanbaru which is located at 120 Damai Ujung Street, Panam, Pekanbaru from April to May in 2017.

### III.3 Population and Sample

#### III.3.1 Population

Population is defined as all members of any well-defined class of people, events, or objects (Singh, 2006: 121). It involves an object or a subject that has a certain quality and characteristics. The population of this research was the second year students of SMK Kansai Pekanbaru in the academic year 2016/2017. The second year students consisted of nine classes totaling 271 students.

The population of this research was assumed to have the same level of proficiency and the same characteristics because they were taught by using the same material in the teaching and learning process.

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Table III.1

**The population of the Second Year students at SMK Kansai Pekanbaru**

No.	Class	Population
1	XI AK	40
2	XI ADP	32
3	XI ELKA/LISTRIK	15
4	XI MO 1	36
5	XI MO 2	38
6	XI MC 1	17
7	XI MC 2	30
8	XI TI 1	32
9	XI TI 2	31
<b>Total</b>		<b>271</b>

**III.3.2 Sample**

On the basis of the characteristics of the population, cluster sampling technique was used in this study. A cluster sampling technique is a technique which randomly selects groups, not individuals. This sample technique is used to determine the sample of the study. Gay (2000:129) stated that cluster sampling randomly selects groups (not individual) that have similar characteristics. The main consideration of taking the sample was the characteristics of both. It can be said both groups were homogeneous. There were some classes that had similar characteristics from which two classes were taken as the sample of the research,

that is; XI TI 1 as the Experimental 1 and XI TI 2 as the Experimental 2. Each class consisted of 32 and 31 students as can be seen in the table below:

**Table III.2**

**The total of sample of the study**

Class	Total		Sample	
	Male	Female	Total	Group
XI TI 1	24	8	32	Experimental
XI TI 2	26	5	31	Experimental
<b>TOTAL</b>	<b>50</b>	<b>13</b>	<b>63</b>	

The total of the sample was changed because while the researcher was taking the data, some of them were absent. Then, the researcher only took the students who participated in the research from the pre- test session, treatment and post- test session. So, the sample of the research finally became 50 students.

### III.3 Instrument

To collect the data, the researcher a reading comprehension test was used. For the reading comprehension test, the students were given multiple choice questions about report texts as many as 25 questions for pre- test and post- test. This instrument was tried out before the test was given to the students. After the try out, five invalid questions were found being noticeable through the validity and reliability. So, the invalid questions were deleted and not used for the pre- test and post- test.

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The pre-test and post-tests were administered to two classes as experimental group. The pre-test was administered before the treatment and the post-test after the treatment to find out the students' reading comprehension after treatment using Magnet Summary Strategy and the Herringbone Strategy.

### III.3.1 Pilot Module

Module was a tool or media in teaching and learning process which consists of the material, technique, and evaluation. They are planned systematically and interestingly to obtain the basic competence based on its level of difficulty (Sardiman, 2004). The module in this study was the teacher guidelines to apply Magnet Summary strategy and Herringbone strategy in teaching and learning reading comprehension. This module guides the teacher how to apply the strategies precisely to compare between the results of Magnet Summary strategy and Herringbone strategy of students reading comprehension in report text. The draft of the module is written as follows:

- a. The title of the module “ The Guidelines to apply Magnet Summary Strategy and Herringbone Strategy through Report texts.
- b. The competence: Responding the meaning and language features in simple short in report text, main ideas and supporting details, the meaning of vocabulary or synonym of the text, the generic structure of report text, inferences and references of the report text.
- c. The purposes of the module are :
  - To guide the teacher in applying Magnet Summary Strategy to find out the students reading comprehension in Report texts.

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- To guide the teacher in applying Herringbone Strategy to find out the students reading comprehension in Report text.
- d. Time location: six meetings
  - e. Material: some of report texts were taken from Student Books and LKS and some other sources were taken from the internet.
  - f. The steps of teaching reading by using Magnet Summary Strategy:
    - a) The teacher asks the students to read a passage or text to three to five keyword concepts (it is called as “magnet word”) that represent what the author tells in the text
    - b) The teacher asks the students write down the magnet words on the card that is provided by the teacher
    - c) The teachers may the students to work this activity in pairs to select magnet words in each paragraph
    - d) The teachers directs the students or group to complete the cards, so then students are directed to take information from each magnet word in the card to become a statement.
    - e) The teacher directs the students to complete all magnet words in the card to make a statement, the students write them to become a paragraph and a summary. The students or groups add connective words. (Buehl, 1995)
  - g. The Steps of teaching reading by using Herringbone Strategy:
    - a) The teacher selects the text. In this study, the researcher used Report texts.

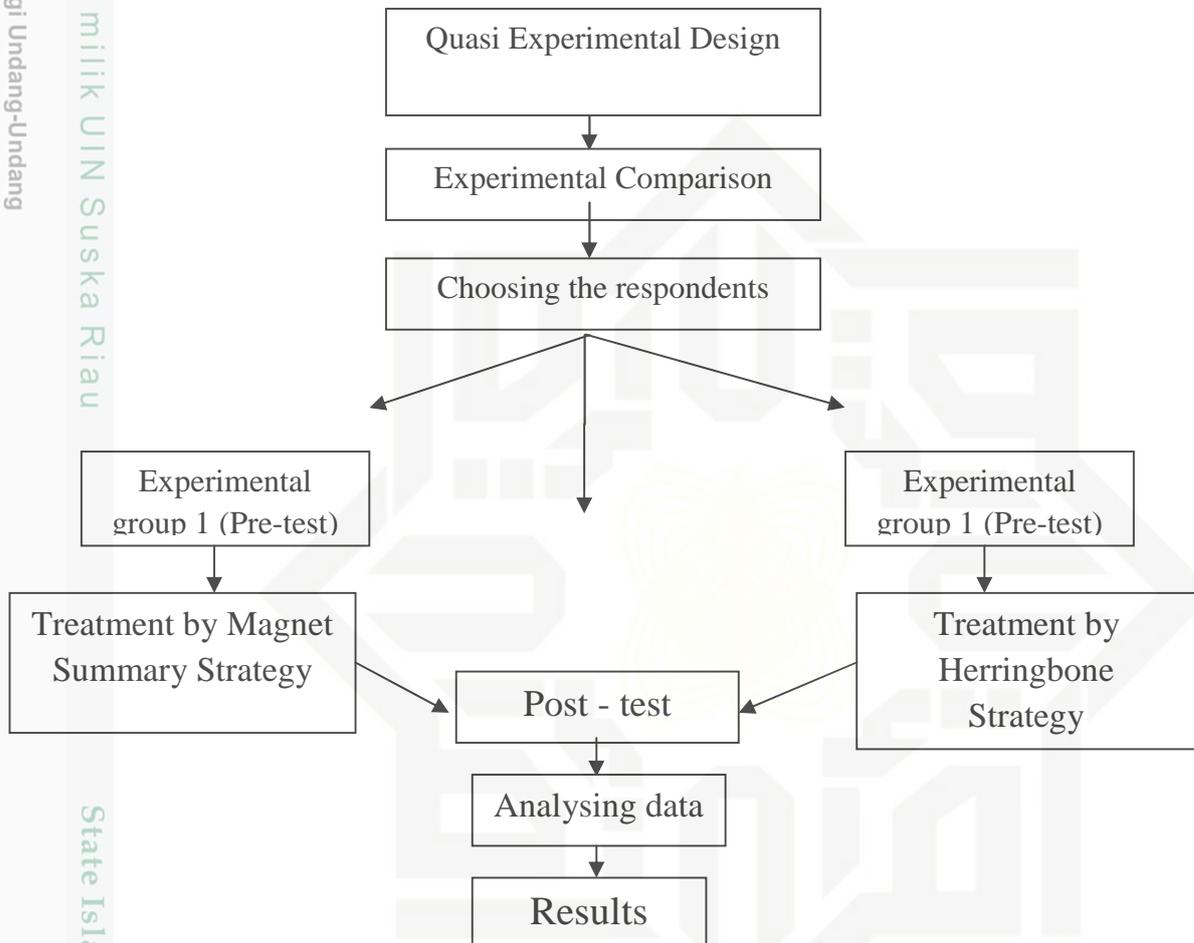
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- b) The teacher introduces a visual diagram or graphic of the herringbone strategy.
- c) The teacher asks the students to plot the answer to the 5W 1H questions in the diagram or graphic of Herringbone. The students will look for the answers of the following questions:
  - a. Who is the author talking about?
  - b. What did they do?
  - c. When did they do it?
  - d. Where did they do it?
  - e. How did they do it?
  - f. Why did they do it?
- d) The students read the report text to find the answer of the 5W 1H questions in the diagram and write down them in the diagram or graph.
- e) The teachers directs the students how to fit the answer into a slot a main idea after the students answer it,
- f) The students write the main idea of the text from the Herringbone diagram
- g) The students complete all of the answers of 5W 1H questions to become a sentence.

### III.5 Research Procedures

To conduct this study some research procedures were followed that can be seen in the graph below:



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### III.6 The Data Collection Technique

#### III.6.1 Observation

Observation was used to observe directly the students who used Magnet Summary strategy and Herringbone strategy to improve their reading comprehension. In observation, observational items were used to observe the class during teaching and learning process by using Magnet Summary Strategy and Herringbone Strategy. The list of observation for the teacher and the students is presented in the table below:

**Table III.3**

**The Observation List of Magnet Summary Strategy (X<sub>1</sub>) for the Teacher**

No.	Indicators	Observation Checklist	
		Yes	No
1	The teacher explains the lesson that will be studied by students		
2	The teacher explains the definition, generic structure and language feature of report text by using Video		
3	The teacher is facilitating the students by demonstrating the example of report text by using Video		
4	The teacher introduces Magnet Summary Strategy to the students.		
5	The teacher prepares the instruction of Magnet Summary Strategy.		
6	The teacher gives students a topic and asks them to		

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read.

- |    |   |
|----|---|
| 7  | The teacher asks students to take a piece of paper, then write down word magnets on the paper or card |
| 8  | The teacher asks students to make a summary sentence of each magnet word.                             |
| 9  | The teacher asks students to make a summary sentence to become a summary paragraph                    |
| 10 | The teacher guides students to make the conclusion of the lesson that they have learnt.               |

Table III.3 describes the list of activities that the teacher did in the class.

The teacher directed the students to do some steps in pre- activity, while activity and post- activity. The researcher directed the teacher to follow step by step the observation list before doing the class. In the *pre-* activity, the teacher did warm up and gave motivation to the students before studying. Then, the teacher presented what the students would study. They discussed the material together. The teacher did the *while* activity by applying Magnet Summary strategy. In this activity, the teacher did the activities based on the procedure of Magnet Summary strategy to improve the students' reading comprehension. After the teacher and the students finished the *while* activity depend on the procedure of Magnet Summary strategy, they made a conclusion as the closing lesson on that day.

The following is the observation list of Herringbone Strategy for teachers:

**Table III.4**

**The Observation List of Herringbone Strategy (X<sub>2</sub>) for the Teacher**

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No.	Indicators	Observation Checklist	
		Yes	No
1	The teacher explains the lesson that will be studied by students.		
2	The teacher explains the definition, generic structure and language feature of report text by using Video.		
3	The teacher is facilitating the students by demonstrating the example of report text by using Video.		
4	The teacher introduces to students Herringbone Strategy.		
5	The teacher prepares the instruction of Herringbone Strategy.		
6	The teacher gives students a topic and asks them to read.		
7	The teacher asks students to find the main idea and detailed information of the text.		
8	The teacher asks students to answer the question 5W 1H questions based on Herringbone Strategy		
9	The teacher asks students to complete the questions to become a Herringbone diagram		

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The teacher guides students to make  
**10** conclusion of the lesson that they have  
 learnt

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Table III.4 describes the list of activities that the teacher did in the class.

The teacher directed the students to do some steps in pre- activity, while activity and post- activity. The researcher directed the teacher to follow step by step in the observation list before the class. In *pre-* activity, the teacher did warm up and gave motivation to the students before studying. Then, the teacher presented what the students would study. They discussed the material together. The teacher did the while activity by applying Herringbone strategy. In this activity, the teacher did the activities based on the procedure of Herringbone strategy to improve the students' reading comprehension. After the teacher and the students finished the *while* activities that depends on the procedure of Herringbone strategy, they made a conclusion as the closing lesson.

The researcher also had an observation list for the students when they applied the Magnet Summary strategy and Herringbone strategy. The observation list of Magnet Summary strategy is shown below:

**Table III.5**

**The Observation List of Magnet Summary Strategy (X<sub>1</sub>) for the Students**

No.	Indicators	Observation Checklist	
		Yes	No
1	The students pay attention to the teacher's explanation or opening about the lesson that		

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they will learn.

The students pay attention to discuss the lesson with the teacher by discussing a Report

- 2 Text (definition, purpose, generic structure, language features and the example of the Report text)

- 3 The students pay attention to the introduction of Magnet Summary Strategy.

- 4 The students pay attention to the instruction of using Magnet Summary Strategy.

- 5 The students pay attention to the brief explanation about Report Text.

- 6 The students read the text individually.

- 7 The students take a piece of paper as the card, then write down three to five the magnet words in the card.

- 8 The students make the magnet words to a summary statement.

- 9 The students make the summary statement to become a summary paragraph.

- 10 The students do a task related to the text given.

- 11 The students receive the assistance from the teacher.

- 12 The students take a conclusion of the lessons that they have learned.

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It can be seen that the researcher also provided the observation list for the students that was applied using Magnet Summary strategy. It was aimed to know the students if they followed the activities well and to know what happened in the research. In line with this, the observation list of Herringbone strategy also aimed to know the activities. So, here is the observation list of Herringbone strategy for the students:

**Table III.6**
**The Observation List of Herringbone Strategy (X<sub>2</sub>) for the Students**

No.	Indicators	Observation Checklist	
		Yes	No
1	The students pay attention to the teacher's explanation or opening about the lesson that they will learn.		
2	The students pay attention to discussion about the lesson with the teacher by discussing a Report Text (definition, purpose, generic structure, language features and the example of the Report text)		
3	The students give attention to the introduction of Herringbone Strategy.		
4	The students pay attention to the instruction of using Herringbone Strategy.		
5	The students pay attention to the brief explanation about Report Text.		
6	The students read the text individually.		

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|----|--|
| 7  | The students get the diagram of Herringbone Strategy to make easier to write down the main idea based on the 5W 1H questions |
| 8  | The students complete the questions in the Herringbone diagram   |
| 9  | The students do a task related to the text given.  |
| 10 | The students receive the assistance from the teacher.  |
| 11 | The students take a conclusion of the lessons that they have learned.  |
- 

### III.6.2 Test

The data of the research were collected by distributing a reading comprehension test to the students. The test consisted of six passages of each consisted of five to six questions. Each reading text had its allotted time up to 90 minutes. The tests were taken from the Students Textbook and internet materials.

The tests were analyzed based on the total scores of the results of the students' reading comprehension test. If the students were able to achieve the goal, the assessment of students' reading comprehension test needed to be correlated with the purposes of achievement. The classification of the students' scores is shown below:

**Table III.7**  
**The Classification of Students' Scores**

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No	Test Score	Classification
1	80-100	Good to Excellent
2	60-79	Average to Good
3	50-59	Poor to Average
4	0-49	Poor

Adapted from Harris (1974)

The test was divided to two types as in the following:

- a) Pre- test. It was used to find out the students' ability in reading comprehension at the beginning of study or before the treatments using both strategies.
- b) Post-test. It was aimed to find out the significant effect of using Magnet Summary strategy and Herringbone strategy on student reading comprehension after the treatments.

### III.7 Validity and Reliability

#### III.7.1 Validity

Creswell (2008:169) states validity is the individual's scores from an instrument make sense, meaningful, enable you, as the researcher, to draw good conclusions from the sample you are studying to the population. 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 program version 20. Brown (2000, p.22) states that test is

method of a measuring a person's ability, knowledge, or performance in a given domain. Validity is the extent to which inferences made from assessment results which are appropriate, meaningful, and useful in terms of the purpose of the assessment.

To find out the validity of the items of test, Split-Half formula was along with SPSS 20 version by looking at the corrected items - total correlation (correlation between the score item and score total item =  $r_{\text{counted}}$ ) in table Item-Total Statistics.

To know whether the test is valid or not, the value of  $r_{\text{counted}}$  must be compared with  $r_{\text{table}}$ . For example, the number of students is 10. The degree of freedom is  $25-2=23$ ,  $r_{\text{table}}$  on  $df=23$  are 0,3961 (5%).

If the value of  $r_{\text{counted}} > r_{\text{table}}$  = valid,

If the value of  $r_{\text{counted}} < r_{\text{table}}$  = invalid. The result can be seen as table

below:

**Table III.10**  
**Instrument Validity before Try Out**

Question	Corrected Item- Total Correlation	R Table	Description
		= 0,05 ; n= 30	
Q1	0,657	> 0,361	Valid
Q2	0,462	> 0,361	Valid
Q3	-0,091	< 0,361	Invalid
Q4	0,490	> 0,361	Valid
Q5	0,502	> 0,361	Valid
Q6	0,732	> 0,361	Valid

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Q7	0,670	> 0,361	Valid
Q8	0,457	> 0,361	Valid
Q9	0,502	> 0,361	Valid
Q10	0,478	> 0,361	Valid
Q11	0,209	< 0,361	Invalid
Q12	0,473	> 0,361	Valid
Q13	0,462	> 0,361	Valid
Q14	0,445	> 0,361	Valid
Q15	0,473	> 0,361	Valid
Q16	0,470	> 0,361	Valid
Q17	0,037	< 0,361	Invalid
Q18	0,529	> 0,361	Valid
Q19	0,566	> 0,361	Valid
Q20	0,839	> 0,361	Valid
Q21	0,429	> 0,361	Valid
Q22	0,473	> 0,361	Valid
Q23	0,147	< 0,361	Invalid
Q24	0,447	> 0,361	Valid
Q25	0,541	> 0,361	Valid
Q26	0,436	> 0,361	Valid
Q27	0,482	> 0,361	Valid
Q28	0,093	< 0,361	Invalid
Q29	0,515	> 0,361	Valid
Q30	0,610	> 0,361	Valid

From the result of calculation the data by using SPSS 20, it is clear that the try out's question had five invalid items and twenty five valid items; the invalid items are item 3, item 11, item 17, item 23 and item 28 and other items are valid. So, the invalid items are changed, it can be appearance on the table below:

Table III.11

## Instrument Validity after Try Out

Question	Corrected Item- Total Correlation	R Table	Description
		= 0,05 ; n= 30	
Q1	0,684	> 0,361	Valid
Q2	0,442	> 0,361	Valid
Q3	0,413	> 0,361	Valid
Q4	0,573	> 0,361	Valid
Q5	0,772	> 0,361	Valid
Q6	0,618	> 0,361	Valid
Q7	0,440	> 0,361	Valid
Q8	0,573	> 0,361	Valid
Q9	0,497	> 0,361	Valid
Q10	0,445	> 0,361	Valid
Q11	0,463	> 0,361	Valid
Q12	0,486	> 0,361	Valid
Q13	0,507	> 0,361	Valid
Q14	0,479	> 0,361	Valid
Q15	0,503	> 0,361	Valid
Q16	0,565	> 0,361	Valid
Q17	0,862	> 0,361	Valid
Q18	0,430	> 0,361	Valid
Q19	0,403	> 0,361	Valid
Q20	0,506	> 0,361	Valid
Q21	0,593	> 0,361	Valid
Q22	0,505	> 0,361	Valid
Q23	0,462	> 0,361	Valid
Q24	0,480	> 0,361	Valid

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Q25	0,658	> 0,361	Valid
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From the result of the data calculated using SPSS 20, it was found out that all questions gained r value > r table. It is obvious that the results of all items' calculation were valid after removing some invalid questions. So, as many as 25 questions were used in both pre-test and post-test.

### III.7.2 Reliability

Brown (2010) states reliability has to do with accuracy of measurement. This kind of accuracy reflects in obtaining of similar results when measurement is repeated on different occasion or with different instruments or by different person. The characteristic of reliability is sometimes termed consistently. It means we can say the test is reliable when an examinee's results are consistent in a repeated measurement. Heaton explains that reliability is of key importance in the use of both public achievement and proficiency test and classroom test. There are some factors affecting the reliability of a test. They are:

- a. The selected material for testing is appropriate
- b. The administration of the test is clear which is an important factor in deciding the reliability

To obtain the reliability of the test, the mean and standard deviation of the test must be known. The reliability coefficients for good identified kinds of structure test and reading comprehension test are expected to exceed 0.00 and closed 1.00. Heaton (1988: 164) states that reliability of test is considered as follows:

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**Table III.8****Criteria Coefficient of Reliability**

Coefficient Reliability	Criteria
0.00-0.20	Reliability is low
0.21-0.40	Reliability is sufficient
0.41-0.70	Reliability is high
>0.70-1.0	Reliability is very high

The results of the reliability is presented in Table III.9 below:

**Table III.9****The Reliability Statistics**

Cronbach's Alpha	N of Items
0.918	25

From the table III.9, it is clear that the value of Cronbach's Alpha based on standardized items ( $r_{11}$ ) of the test is 0.918. So, >0.70 is the highest reliability calculated by SPSS version 20.

**III.8 The Data Analysis Technique**

The scoring guide was chosen as the criteria of scoring representing the basic aspects of reading. The reading results were evaluated by considering five aspects and each aspect had a score or level. The specifications of the aspects were topic, main idea, specific idea, textual reference and inference, and word meaning or synonym.

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In analyzing the data, the researcher used the scores of the pre-test and the post-test of both experimental groups. These scores were analyzed statistically using both descriptive and inferential statistics. In this research, the researcher the following formulas were used:

### III.8.1 Independent sample t-test

To find out whether there is a significant difference or no significant difference between two or more variables can be analysed by using Independent Sample  $t_{test}$ . Gay (2009) added that the t-test for independent sample uses to determine whether there is probably a significant difference between the means of two independent samples. Independent sample t-test was used to find out the results of the first and second hypotheses as in the following:

1. To find out the significant effect of students' reading comprehension scores after being taught by using Magnet Summary strategy to Experimental Group 1 at SMK Kansai Pekanbaru
2. To find out the significant effect of students' reading comprehension scores after being taught by using Herringbone strategy to the Experimental Group 2 at SMK Kansai Pekanbaru
3. To find out the significant difference of students' reading comprehension before and after being taught by using Magnet Summary and Herringbone strategy to both experimental groups at SMK Kansai Pekanbaru

To analyze the final-test scores of the experimental groups and the control group, the following formula was used:

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$$t = \frac{M_X - M_Y}{\sqrt{\frac{SD_X^2}{N_1-1} + \frac{SD_Y^2}{N_2-1}}}$$

Where:

$t$  = The value of comparing two means

$M_X$  = Mean of the scores of the pre-test

$M_Y$  = Mean of the scores of post-test

$SD_X$  = Standard deviation of the experimental group

$SD_Y$  = Standard deviation of the control group

$N_1$  = Number of the sample of the pre-test

$N_2$  = Number of the sample of the post-test

1 = the constant number

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) =  $(N_1+N_2)-2$ , which is hypothesized as follows:

$H_a$ :  $t_o > t$ -table

$H_o$ :  $t_o < t$ -table

$H_a$  would be accepted if  $t_o > t$ -table or there was an effect after giving the treatment of Magnet Summary Strategy and Herringbone Strategy on students' reading comprehension.

$H_o$  would be accepted if  $t_o < t$ -table or there was no effect after giving the treatment of Magnet Summary Strategy and Herringbone Strategy on students' reading comprehension.

### III.8.2 Paired Sample T-test

Paired Sample t-Test is known also as Non-independent sample t-test. Gay (2000:488) stated that t-test for non-independent samples is used to compare groups that are formed by some type of matching or to compare a single group's performance on a pre-test and a post-test or on two different treatments. At this time, it was used to find out the significant effect before and after using Magnet Summary strategy and Herringbone on students' reading comprehension by using the pre-test and post-test scores of the experimental class as shown below:

1. To find out a significant effect by using Magnet Summary strategy on the experiment group 1 at SMK Kansai Pekanbaru
2. To find out a significant effect by using Herringbone strategy on the experiment group 2 at SMK Kansai Pekanbaru
3. To find out significant difference of students' reading comprehension before and after being taught by using Magnet Summary and Herringbone strategy to both experimental groups at SMK Kansai Pekanbaru

As for the effect size of the independent sample t-test, the eta squared is commonly used (Pallant: 2001). Eta squared ranges from 0 to 1 and represents the proportion of variance in the dependent variables explained the independent variables with the following:

$$\text{eta squared} = \frac{t_2}{t_2 - N_1 + N_2 - 1}$$

The effect size can assist between 0 to 1, according to Cohen (Cohen, Manion, and Morrison :2007 p.521) the category of effect size is as follow:

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0– 0.20	= Weak effect
0.21 – 0.50	= Modest Effect
0.51 – 1.00	= Moderate effect
> 1.00	= Strong effect

Paired sample t-test was used in this research to obtain the results of hypotheses. Gay (2000:163-167) contends that t-test for non-independent variable sample is used to compare groups that are formed by some types of matching or to compare a single group's performance on a pre-test and post-test.

Here is the formula of paired-sample  $t_{\text{test}}$ :

$$t = \frac{\bar{D}}{\frac{\sqrt{\frac{\sum D^2 - (\sum D)^2}{N}}}{N(N-1)}}$$

$D$  : Gain Score ( $D=X_2-X_1$ )

The t-table has the function to see if there is a significant improvement among the mean of the scores of both pretest and posttest. The t-obtained value is consulted with the value of t-table at the degree of freedom (df) = N-1 which is statistically hypothesized:

$H_1 = t_o > t\text{-table}$

$H_0 = t_o < t\text{-table}$

- a.  $H_1$  is accepted if  $t_o > t\text{-table}$  or there is any significant different of students' reading comprehension scores after being taught by using Magnet Summary and Herringbone strategy to the experimental group 1 and experimental group 2 at SMK Kansai Pekanbaru

- b.  $H_0$  is accepted if  $t_o < t\text{-table}$  or there is no significant different of students' reading comprehension scores after being taught by using Magnet Summary and Herringbone strategy to the experimental group 1 and the experimental group 2 at SMK Kansai Pekanbaru

The t-table has the function to see if there is a significant difference among the mean of the scores 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 hypothesized

$$H_0: t_o < t\text{-table}$$

$$H_a: t_o > t\text{-table}$$

Afterward, the coefficient effect of T-test was obtained by using the following formula<sup>1</sup>:

$$r^2 = \frac{t^2}{t^2 + n - 1}$$

$$kp = r^2 \times 100\%$$

Where:

Kp : Coefficient effect

$r^2$  : Coefficient

(Pallant, 2001)

Afterward, the effect size of T-test was obtained by using following formula<sup>2</sup>:

$$\tilde{\eta}^2 = \frac{t^2}{t^2 + n - 1}$$

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$$\text{eta squared} = \tilde{\eta}^2 \times 100\%$$

Where:

*eta squared* : Coefficient effect

$\tilde{\eta}^2$  : Coefficient



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