

### CHAPTER III

#### THE RESEARCH METHODOLOGY

##### A. The Research Design

The type of this research was an experimental research. According to Gay and Airaisian, experimental research is “the only type of the research that can test hypothesis to establish cause and effects relationship”<sup>29</sup>. Then, Jhon W Cresswell states that experiment is you test an idea (or practice or procedure) to determine whether it influences the outcome or the dependent variable<sup>30</sup>. The research design used a quasi-experimental design, which used Pre-test and Post-test nonequivalent control group design. In conducting this research, the eleventh Grade students at State Senior High School of 1 Kundur were participants. The students were given pre-test at the beginning of the study in order to know their ability. After that they were given treatments for four meetings. During the treatments, the writer was observed by English teacher in the school. At the end of the study, the students were given a post-test. In this research, the pre-test and post-test were compared in order to determine the effect of using Frame Sentences strategy on the students’ reading comprehension.

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<sup>29</sup> L.R. Gay and Peter Airasian. *Educational Research Competencies for Analysis and Application. Six Ed.* (New Jersey: Prentice-hall, Inc, 2000). p.367

<sup>30</sup> Jhon. W. Cresswell. *Educational Research: Planning, conducting, and Evaluating Quantitative And Qualitative Research.* (New Jersey: Pearson education, 2008). p.299

This research consists of two variables; the independent variable is symbolized “X” that is Frame Sentences Strategy and the dependent variable is “Y” that is Reading comprehension at State Senior High School 1 Kundur District, Karimun Regency, Kepulauan Riau Province. The design of this research can be illustrated as follows:

**Table III.1**  
**The Research Design**

Experiment Group	Pre-Test	Treatment	Pos-Test
Control Group	Pre-Test	No treatment	Post-Test

#### **B. The Time and the Location of the Research**

The research was conducted from April to Mei 2014 at the eleventh grade students of state senior high school 1 Kundur. It is located on JL. Sunaryo KM. 3.5 Tanjungbatu barat, Kundur District, Karimun Regency of Kepulauan Riau Province.

#### **C. The Subject and Object of the Research**

Based on the title, the subject of this research was the eleventh grade students of State Senior High School 1 Kundur. Then, the object of this research was the effect of using Frame Sentences strategy on Reading comprehension in the academic year of 2013 – 2014.

## D. The Population and Sample of the Research

### 1. Population of the Research

The population of this research was the students of the eleventh grade at State Senior High School 1 Kundur Distric, Karimun Regency, Riau Kepulauan Province in 2013-2014 academic years. It had six classes. The total number of population was 181 students.

**Table III.2**  
**Total Population of Second Grade Students**  
**at Senior High School 1 Kundur**

No.	Classes	Population		Total
		Male	Female	
1.	<b>XI IPA 1</b>	<b>12</b>	<b>18</b>	<b>30</b>
2.	XI IPA 2	14	17	31
3.	<b>XI IPA 3</b>	<b>12</b>	<b>18</b>	<b>30</b>
4.	XI IPS 1	12	18	30
5.	XI IPS 2	16	15	31
6.	XI IPS 3	13	16	29
<b>Total Population</b>				<b>181</b>

### 2. Sample of the Research

Based on the total population above, the writer took sample by using cluster sampling technique. According to Gay et al, cluster sampling randomly selects groups, not individuals.<sup>31</sup> Therefore, the writer selected two groups of students to be sample in this research. They were the students of XI IPA I as an experimental class and XI IPA III as a control class.

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<sup>31</sup> Op. Cit, p. 129

**Table III.3**  
**Total Sample of Second Year Students at Senior High School 1 Kundur**

No.	Classes	Sample		Total
		Male	Female	
1.	XI IPA 1	12	18	30
2.	XI IPA 3	12	18	30
<b>Total Sample</b>				<b>60</b>

### E. The Technique and Data Collection

In this research, the researcher used test to measure the students' reading comprehension. The researcher used pre-test and post-test. The test was given twice for every group. The first was Pre-test and the last was post-test. A Post-test is a measure on some attribute or characteristic that is assessed for participant in an experiment after the treatment<sup>32</sup>.

The type of the test is multiple choices test. According to Brown, language skill tests have traditionally consisted of standardized multiple choice items on grammar, vocabulary, listening comprehension, reading comprehension, and aural comprehension.<sup>33</sup> The blue print of the test is as follows:

**Table III.4**  
**The Blue Print of The Test**

Question Indicators	Question Number	Source
Identify the meaning of the text	<b>1, 9, 16, 21, 25</b>	Reading Text Book (Look A Head 2)
Identify the topic of the text	<b>4, 10, 13,18, 22</b>	
Identify the main idea of the text	<b>2, 7, 15, 19, 20</b>	
Identify specific fact of the text	<b>5, 8, 11, 14, 23</b>	
Identify supporting detail of the text	<b>6, 3, 12, 17, 24</b>	
Increase low ability in reading comprehension	<b>The all of questions</b>	

<sup>32</sup> John W. Creswell. Op. Cit. P. 301

<sup>33</sup>H.Doughlas brown.Language Assesment Principles & Classroom Practises. San Fransisco. Longman:2003. P44

After doing the test, the researcher then looked the total score from the result of the test. The score can be classified as follows:<sup>34</sup>

**Table III.5**  
**The Classification of Score**

<b>NO</b>	<b>SCORES</b>	<b>CATEGORIES</b>
<b>1.</b>	<b>80-100</b>	<b>Very good</b>
<b>2.</b>	<b>66-79</b>	<b>Good</b>
<b>3.</b>	<b>56-65</b>	<b>Enough</b>
<b>4.</b>	<b>40-55</b>	<b>Less</b>
<b>5.</b>	<b>0-39</b>	<b>Fail</b>

## **F. The Validity and Reliability of the Test.**

### **1. Validity**

Before the test was given to the sample of this research, the researcher tried out the test item. The test given to the students was considered not to difficult or not to easy. The purpose of the try out was to obtain validity and reliability of the test. The test is said to be valid if it measures accurately what is intended to measure.<sup>35</sup> In this research the researcher used content validity. A test is said to have content validity if its content constitutes a representative sample of the language skill, structure, etc, with which it is meant to be concerned.<sup>36</sup> It means that the test given to the students was based on the material that they had learned. it was determined by finding the difficulty level of each item.

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<sup>34</sup> Suharsimi Arikunto, *Dasar- Dasar Evaluasi Pendidikan*, (Jakarta:PT. Rineka Cipta, 2009). p.245

<sup>35</sup> Arthur Huges. *Testing for Language Teacher, 2<sup>nd</sup> Edition* (New York: Cambridge University Press). P. 26

<sup>36</sup> Ibid

The formula of item difficulty is as follows:<sup>37</sup>

$$FV = \frac{R}{N}$$

Where:

P : Index of difficulty

B : The number of correct answer

JS : The number of students taking test

The standard level of difficulty used was  $< 0.30$  and  $> 0.70$ .<sup>38</sup> It means that the items are accepted if the level of difficulty is between 0.30 - 0.70 and it is rejected if the level of difficulty is below 0.30 (difficult) and over 0.70 (easy). Then, the proportion is represented by “P”, whereas the proportion incorrect is represented by “q”.

It can be seen from the following tables:

**Table III. 6**  
**Identify the Meaning of the Text**

Variable	Finding the meaning of the text				N
Item no.	1	9	16	21	25
Correct	18	21	17	18	
P	0.58	0.67	0.54	0.58	
Q	0.41	0.32	0.45	0.41	

Based on the table above, the proportion of correct answers for item number 1 obtained the proportion of correct 0.58, item number 9 obtained the proportion of correct 0.67, item number 16 obtained the

<sup>37</sup> J.B. Heaton. *Writing English Language Test*. (New York: Cabridge university Press, 1988).p. 178-179

<sup>38</sup> *Suharsimi. Op.Cit.*, p. 210

proportion of correct 0.54, and item number 21 obtained the proportion of correct 0.58. Based on level of difficulty “p” < 0.30 and “q” > 0.70, it was pointed out that the items for identifying the meaning of text were accepted.

**Table III. 7**  
**Identify the Topic of the Text**

Variable	Finding the topic of the text				N
Item no.	4	10	13	22	25
Correct	10	17	14	16	
P	0.32	0.54	0.45	0.51	
Q	0.67	0.45	0.54	0.48	

Based on the table above, the proportion of correct answers for item number 4 obtained the proportion of correct 0.32, item number 10 obtained the proportion of correct 0.54, item number 13 obtained the proportion of correct 0.45, and item number 22 obtained the proportion of correct 0.51. Based on level of difficulty “p” < 0.30 and “q” > 0.70, it was pointed out that the items for identifying the main idea of text were accepted.

**Table III. 8**  
**Identify the Main Idea of the Text**

Variable	Finding the main idea of the text				N
Item no.	2	7	19	20	25
Correct	16	15	16	18	
P	0.51	0.48	0.51	0.58	
Q	0.48	0.51	0.48	0.41	

Based on the table above, the proportion of correct answers for item number 2 obtained the proportion of correct 0.51, item number 7 obtained the proportion of correct 0.48, item number 19 obtained the

proportion of correct 0.51, and item number 20 obtained the proportion of correct 0.58. Based on level of difficulty “p” < 0.30 and “q” > 0.70, it was pointed out that the items for identifying the topic of text were accepted.

**Table III. 9**  
**Identify the Specific fact of the Text**

Variable	Finding the specific fact of the text				N
Item no.	5	11	14	23	25
Correct	15	20	19	21	
P	0.48	0.64	0.61	0.67	
Q	0.51	0.35	0.38	0.32	

Based on the table above, the proportion of correct answers for item number 5 obtained the proportion of correct 0.48, item number 11 obtained the proportion of correct 0.64, item number 14 obtained the proportion of correct 0.61, and item number 23 obtained the proportion of correct 0.67. Based on level of difficulty “p” < 0.30 and “q” > 0.70, it was pointed out that the items for identifying the supporting detail of text were accepted.

**Table III. 10**  
**Identify the Supporting Detail of the Text**

Variable	Finding supporting detail of the text				N
Item no.	6	12	17	24	25
Correct	20	13	14	16	
P	0.64	0.41	0.45	0.51	
Q	0.35	0.58	0.54	0.48	

Based on the table above, the proportion of correct answers for item number 6 obtained the proportion of correct 0.64, item number 12 obtained the proportion of correct 0.41, item number 17 obtained the proportion of correct 0.45, and item number 24 obtained the proportion of



correct 0.51. Based on level of difficulty “p” < 0.30 and “q” > 0.70, it was pointed out that the items for identifying the author idea of the text were accepted.

## 2. Reliability

A test must first be reliable as measuring instrument. Reliability is a necessary characteristic of any good test. Heaton explains that reliability is of primary importance in the use of both public achievement and proficiency test and classroom test.<sup>39</sup>

The Reliability coefficients for god identified kinds of text structure text and reading comprehension test were expected to exceed 0.0 and closed 1.00. Heaton states that the reliability of the test was considered as follows:

1. **0.0 – 0.20** : **Reliability is Low**
2. **0.21 – 0.40** : **Reliability is Sufficient**
3. **0.41 – 0.70** : **Reliability is High**
4. **0.71 – 1.0** : **Reliability is Very high**

To obtain the reliability of the test given, the writer used kr-20 formula as follows:<sup>40</sup>

$$KR20: r_i = \frac{k}{(k - 1)} \frac{st^2 - \sum pq}{st^2}$$

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<sup>39</sup>Heaton. *Op.Cit.*, p. 162

<sup>40</sup>Sugiyono. *Statistik untuk Penelitian*. (Bandung: Alfabeta, 2007). p. 359

Where:

k : number of items in the instrument

P : proportion of students who answered the item correctly

Q : proportion of students who answered the item wrong (1-pi)

pq : the multiplication result between p and q

St<sup>2</sup> : total variance

Firstly, the researcher calculated the total variance:

$$st^2 = \frac{x^2}{n}$$

Where:

n : number of respondents

$$x^2 = xt^2 - \frac{\sum xt^2}{n}$$

$$= 6289 - \frac{(417)^2}{25}$$

$$= 6289 - \frac{173889}{25}$$

$$= 6289 - 6955.56$$

$$= 666.5$$

$$st^2 = \frac{x^2}{n}$$

$$st^2 = \frac{666.56}{30}$$

$$= 22.21$$

$$r_i = \frac{k}{k-1} \frac{S_t^2 - \sum P_i q_i}{S_t^2}$$

$$r_i = \frac{25}{(25-1)} \frac{22.21 - 5.48}{22.21}$$

$$r_i = \frac{25}{24} \frac{16.73}{22.21}$$

$$r_i = 1.04 \times 0.75$$

$$r_i = 0.78$$

Based on the result above, it also can be stated that the reliability was **“Very High”**

### G. The Technique of Data Analysis

In analyzing the students' reading comprehension, the researcher used minimum passing grade of English lesson in State Senior High School 1 Kundur District Karimun Regency, Kepulauan Riau Province. It was 70 for the students' reading comprehension.

It means that for those who get score  $> 70$ , they pass the minimum passing grade (KKM), while those get score  $< 70$  they don't pass the minimum passing grade (KKM).

## 1. Normality Test

Before analyzing the data by using t-test formula, the researcher had to find out the normality test of the data. The normality test of the data was analyzed by using Kolmogorov Smirnov test with SPSS.16 version.

Analysis:

If the probability  $> 0.05$  Ho was accepted

If the probability  $< 0.05$  Ho was rejected

## 2. Analysis Data

In analyzing the data, the researcher used scores of pre-test and post-test of experimental and control group. This score was analysed statistically. In this research the writer used these formulas:

### a. Independent sample t-test

To find out whether or not there is a significant difference between two or more variables that can be analyzed by using independent sample t-test.<sup>41</sup> Gay added that the t-test for independent sample is used to determine whether or not there is probably a significant difference between the means of two independent samples.<sup>42</sup> Independent sample t-test was used to find out the results of the first and second hypotheses. They were as follows:

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<sup>41</sup> Hartono, *statistic penelitian* (Pekanbaru: PustakaPelajar, 2010). P. 177

<sup>42</sup> L.R Gay, Op.Cit. p. 484

1. To find out whether there is a significant difference between the students' reading comprehension before being taught by using frame sentences strategy and without using frame sentences strategy.
2. To find out whether there is a significant difference between the students' reading comprehension after being taught by using frame sentences strategy and without using frame sentences strategy.

In this research, the data were analyzed by using SPSS 16.0 Version

The T-table was employed to see whether or not there is a significant difference among the mean of the scores of both experimental and control class. statistical hypothesis:

1.  $H_0 = t_0 < t\text{-table}$
2.  $H_a = t_0 > t\text{-table}$

b. Paired sample t-test or non independent sample t-test

L.R Gay stated that t test for non independent samples is used to compare groups that are formed by some types of matching or comparing a single group's performance on a pre-test and post-test or on two different treatments.<sup>43</sup>

In this time, the researcher used pre-test and post test score of the experimental class in order to find out the significant effect of using frame sentences strategy on students' reading comprehension at State Senior High School 1 Kundur District, Karimun Regency, Kepulauan Riau Province. To obtain the data, the writer used SPS 16.00 Version.

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<sup>43</sup>*Ibid.* p. 488