

CHAPTER III

RESEARCH METHOD

A. The Design of Research

The design of this research is quasi-experimental research. According to Gay, experimental research is the only type of research that can test hypothesis to establish cause-and-effect relationships¹. This research is used when the writer wants to establish possible cause and effect between the independent and dependent variables.² The design of this research is quasi-experimental research. Gay and Airasian state that quasi-experimental design is used when the research keeps students in existing classroom intact and entire classroom are assigned to treatments.³ The writer uses intact groups, the first class is experimental class and the second class is control class. Quasi-experimental design has many design. In this research the writer applies quasi-experimental non-equivalent control group design. According to Gay, the non equivalent control group design is the design that involves random assignment of intact groups of the treatments, not random assignment of individuals.⁴

According to Creswell, the design of the research can be illustrated as follows⁵:

¹ L.R Gay and Peter Airasian. *Educational Research: Competencies for Analysis and Application* (Sixth Edition). (New Jersey: Prentice-Hall, 2000). p.367.

² Jhon w. Creswell. *Educational Research: Planning, Conducting, and Evaluating Quantitative Research*. (New Jersey: Pearson Education, 2008). p.299.

³ L.R Gay and Peter Airasian, Op.Cit. p.394.

⁴ L.R Gay and Peter Airasian. Ibid. p.395.

⁵ Jhon w. Creswell. *Educational Research: Planning, Conducting, and Evaluating Quantitative Research*. (New Jersey: Pearson Education, 2008).p.314.

Table III.1
Research Design

Control Group	Pre-test	Conventional Strategy	Post-test
Experimental Group	Pre-test	Five W's Strategy	Post-test

There were two variables in this research, first was the effect of using Five W's strategy as independent variable, and dependent variable was students' reading comprehension. In conducting this research, two classes of the eleventh grade at Senior High School 4 Pekanbaru participated. The first class was experimental class and the second was control class. Both of classes, the experimental class and control class got different treatment. The experimental class was treated by using "Five W's" strategy and the control class was treated as usual, conventional strategy. Their results were compared in order to determine the effect of the treatment.

B. The Location and Time of the Research

This research was conducted at Senior High School 4 Pekanbaru. It was conducted from March to April 2014. It located on Adi sucipto street.

C. The Subject and Object of the Research

1. The subject of the research

The subject or source of the data of this research was the eleventh grade at Senior High School 4 Pekanbaru academic year 2012-2013. The subjects consisted of eight classes. Briefly, not all of the students who were studying of the eleventh grade at Senior High School 4 Pekanbaru were picked up to be the subject of this research, but only several of them.

2. The object of the research

The object of this research was the effect of using five w's strategy on reading comprehension.

D. The Population and Sample of the Research

1. Population

The population of this research was the eleventh grade at senior high school 4 Pekanbaru. There were eight classes. The total number of the eleventh grade students was 258 students. The following table is the details.

Table III.2
The Total Population of The Eleventh Grades at
Senior High School 4 Pekanbaru

No	Class	Students	Male	Female
1	XI Science 1	32	13	19
2	XI Science 2	32	12	20
3	XI Science3	33	13	20
4	XI Science4	32	11	21
5	XI Social 1	32	12	20
6	XI Social 2	33	13	20
7	XI Social3	32	14	18
8	XI Social 4	32	15	17
TOTAL		258	104	154

2. Sample

Based on the total population above, the writer took 2 classes. It was done by using cluster random sampling technique. According to Gay, cluster random sampling is most useful when the population is large or spread out over a wide geographic area.⁶ It means that sampling in which intact group, not individuals, are randomly selected. Based on the design of

⁶ L.R Gay. Op. Cit. P. 129.

this research, the writer used lottery to take two classes as the sample; they were XI Science 2 as experimental class and XI Science 4 as control class.

Table III.3
The Sample of The Eleventh Grades at
Senior High School 4 Pekanbaru

No	Class	Male	Female	Total number of Students
1	XI Science 2	12	20	32
2	XI Science 4	11	21	32
	Total	23	41	64

E. The Technique of Collecting Data

In getting the data which were needed to support this research, the writer used a test to measure the students' reading comprehension. In this technique, the witer collected data by doing test. The same test was administered to the experiment dan control classes. Test was used to collect the data about the effect of using Five W's strategy on reading comprehension. It was aimed to see if there was difference between the two classes. In this case, there were two tests: pre-test which was given before the treatment and post-test was given after the treatment.

1. Procedures of collecting data for experimental group

Three procedures were administered to collect the data.

a. Pre-test

Pre-test was given to the students before conducting the teaching and learning process using five W's strategy. It was used to measure the students reading comprehension in Narrative text.

b. Treatment

In the treatment, the students were taught by using five W's strategy. Teacher taught and explained the English lesson integratedly of reading comprehension in narrative text by using the procedure of five W's strategy with the procedure: pre activities, whilst activities and post activities as they were stated at Chapter II.

c. Post-test

Post-test was conducted to the students of the experimental group after applying the treatment by using five W's strategy. The result of the post-test was compared with the pre-test result in order to determine the effect of the five W's strategy on the students reading comprehension after conducting 8 meetings of the five W's strategy.

2. Procedures of collecting data for control group

a. Pre-test.

Pre-test was administered to the students of the control group before they were taught by using conventional strategy. The pre-test given to the students of the control group was similar to those of experimental group.

b. Teaching by using non five W's

The students was taught in teaching and learning process of reading comprehension in narrative text by using conventional strategy with the same topics and materials given to the experimental group.

c. Post-test

Post-test were administered to the students of the control group after being taught for eight meetings by using conventional strategy. The result of the post-test was compared with the pre-test result in order to compare their reading comprehension in narrative text.

To get the data about students' comprehension, the writer used the assessment based on the indicators of reading comprehension had explained in the operational concept, In this test, the writer used multiple choice tests in reading comprehension, consisting of 25 items.

Table III.4
Blue Print of Reading Comprehension

No	Indicators	Items Number	Number of Items
1	Identifying Main Idea	1, 6, 11, 16, 21	5
2	Identifying Reference	2, 7, 12, 17, 22	5
3	Locating the Meaning of Vocabulary	3, 8, 13, 18, 23	5
4	Finding Factual Information	4, 9, 14, 19, 24	5
5	Finding Generic Structure	5, 10, 15, 20, 25	5
Total Items		25	25

F. The Validity and the Reliability of the Instrument

1. The Validity of the Instrument

Validity refers to the extent to which the results of the procedure serve the uses for which they were intended.⁷ The instrument is said to be valid if it measures accurately what it is intended to measure.⁸ According to

⁷ Evelyn Hatch and Hossein Farhady, *Research Design and Statistics for Applied Linguistics* (Los Angeles: Newbury House Publishers, inc., 1982), pp. 250-251.

⁸ Sugiyono, *Statiska untuk Penelitian* (Bandung: Alfabeta, 2012), p. 348.

Sugiyono the instrument validity of test sufficiently fulfills the construct validity.⁹ It was determined by using factor analysis, by correlating between instrument item score and total score. Before the test are given to the sample, both of the tests will be tried out to 20 students at the second year. The purpose of try out is to obtain validity and realibility of the test. It is determined by finding the difficulty level of each item. Item of difficulty is determined as the proportion of correct answer responses. The formula of item item difficulty is as follows:¹⁰

$$P = \frac{B}{JS}$$

Where:

P : Index of difficulty

B : The number of correct answer

JS : the number of students

The standard level of difficulty use is $>0,30$ and $<0,70$.¹¹ It mean that the item test that is accepted if the level of difficulty is between **0,30 - 070** and it rejected if the level of difficulty is below **0,30** (difficulty) and over **0,70** (easy). The proportion of correct is represented by “**p**”, whereas the proportion of incorrect is represented by “**q**”.

The data obtained by using posttest and were evaluated in 5 components:

- a. The students are able to identify the main idea in narrative text.

⁹ Ibid., p. 350.

¹⁰ Suharsimi Arikunto. *Dasar-Dasar Evaluasi Pendidikan*. Jakarta: Bumi Aksara. 2008p. 208.

¹¹ Ibid p. 210.

- b. The students are able to identify the references in narrative text
- c. The students are able to locate the meaning of the vocabulary in context
- d. The students are able to find out the factual information in narrative text
- e. The students are able to identify the generic structure in narrative text .

This try out was given to thirty students, then the calculation of item difficulty can be seen from the following table:

Table III. 5

The students are able to identify the main idea in narrative text

Variable	identify the main idea					N
Item no	1	6	11	16	21	32
Correct	16	18	18	17	17	
P	0.5	0.57	0.57	0.54	0.54	
Q	0.5	0.43	0.43	0.46	0.46	

$$P = \frac{B}{JS}$$

$$Q = 1.00 - P$$

Based on the table above, the item numbers of question for students to find out the factual information were 1, 6, 11, 16, and 21. It showed that proportion of correct answer for find out main idea of test item number 1 was 0.5, the proportion of correct answer for test item number 6 was 0.57, the proportion of correct answer for test item number 11 was 0.57, the proportion of correct answer for test item number 16 was 0.54, the proportion of correct answer for test item number 21 was 0.54. The total correct answer of The students are able to identify the main idea was 0.528. Then, Based on the standard level of difficulty “p” > 0.30 and < 0.70. So the items of The students are able to identify the main idea were accepted.

Table III.6

The students are able to identify the references

Variable	identify the references					N
Item no	2	7	12	17	22	32
Correct	15	17	17	16	17	
P	0.46	0.54	0.57	0.5	0.57	
Q	0.54	0.43	0.43	0.5	0.43	

$$P = \frac{B}{JS}$$

$$Q = 1.00 - P$$

Based on the table above, the item numbers of question for students to find out the factual information were 2, 7, 12, 17, and 22. It showed that proportion of correct answer for identify the references of test item number 2 was 0.46, the proportion of correct answer for test item number 7 was 0.54, the proportion of correct answer for test item number 12 was 0.57, the proportion of correct answer for test item number 17 was 0.5, the proportion of correct answer for test item number 22 was 0.57. The total correct answer of to identify the references was 0.528. Then, Based on the standard level of difficulty “p” > 0.30 and < 0.70 . So the items of to identify the references were accepted.

Table III.7

The students are able to locate the meaning of the vocabulary in content

Variable	locate the meaning of the vocabulary					N
Item no	3	8	13	18	23	32
Correct	17	18	19	18	18	
P	0.54	0.57	0.59	0.57	0.57	
Q	0.46	0.43	0.41	0.43	0.43	

$$P = \frac{B}{JS}$$

$$Q = 1.00 - P$$

Based on the table above, the item numbers of question for students to find out the factual information were 3, 8, 13, 18, and 23. It showed that proportion of correct answer to locate the meaning of the vocabulary in context of test item number 3 was 0.54, the proportion of correct answer for test item number 8 was 0.57, the proportion of correct answer for test item number 13 was 0.59, the proportion of correct answer for test item number 18 was 0.57, the proportion of correct answer for test item number 23 was 0.57. The total correct answer of was 0.568. Then, Based on to locate the meaning of the vocabulary in context the standard level of difficulty “p” > 0.30 and < 0.70 . So the items of locate the meaning of the vocabulary in context were accepted.

Table III.8

The students are able to find out the factual information

Variable	find out the factual information					N
Item no	4	9	14	19	24	32
Correct	17	16	17	17	17	
P	0.54	0.5	0.54	0.54	0.54	
Q	0.46	0.5	0.46	0.46	0.46	

$$P = \frac{B}{JS}$$

$$Q = 1.00 - P$$

Based on the table above, the item numbers of question for students to find out the factual information were 4, 9, 14, 19, and 24. It showed that proportion of correct answer find out the factual information of test item number 4 was 0.54, the proportion of correct answer for test item number 9

was 0.5, the proportion of correct answer for test item number 14 was 0.54, the proportion of correct answer for test item number 19 was 0.54, the proportion of correct answer for test item number 24 was 0.54. The total correct answer find out the factual information was 0.532. Then, Based on the standard level of difficulty “p” > 0.30 and < 0.70 . So the items of find out the factual information were accepted.

Table III.9

The students are able to identify the generic structure in narrative text.

Variable	identify the generic structure					N
Item no	5	10	15	20	25	32
Correct	19	18	18	17	18	
P	0,59	0.57	0.57	0.54	0.57	
Q	0.41	0.43	0.43	0.46	0.43	

$$P = \frac{B}{JS}$$

$$Q = 1,00 - P$$

Based on the table above, the item numbers of question for students to find out the factual information were 5, 10 15, 25, and 25. It showed that proportion of correct answer to identify the generic structure in narrative text. of test item number 5 was 0.59, the proportion of correct answer for test item number 10 was 0.57, the proportion of correct answer for test item number 15 was 0.57, the proportion of correct answer for test item number 20 was 0.54, the proportion of correct answer for test item number 25 was 0.57. The total correct answer to identify the generic structure in narrative text.was 0.568. Then, Based on the standard level of difficulty “p” > 0.30

and < 0.70 . So the items to identify the generic structure in narrative text. were accepted.

2. The Reliability of the Instrument

A test must first be reliable as measuring instrument. Reliability is a necessary characteristic of any good test. Reliability refers to whether a test measure something well.¹² The researcher used K-R 20 to find out the Reliability of the test.¹³ The formula was as follows:

$$R_{11} = \left(\frac{n}{n-1} \right) \left(\frac{S^2 - \sum pq}{S^2} \right)$$

Where :

R_{11} = Reliability of the test

P = Proportion subject that answer the true of item

Q = Proportion subject that answer the false of item ($q = 1 - p$)

pq = Total equals between p and q

n = Total of the item

S = Standard Deviation

To find out standard deviation (S), the writer used SPSS Statistics 17.0. The result is a like in the following table:

Table III.10
Statistics

¹² Jeremy Miles and Philip Banyard, *Understanding and Using Statistics in Psychology*, New York: Pearson Education, 2007, p. 270.

¹³ Suharsimi Arikunto, *Dasar-Dasar Evaluasi Pendidikan*, Jakarta: Bumi Aksara, 2009, p.87.

Try-out		
N	Valid	25
	Missing	0
Std. Deviation		7.299

From the table III. 10 above, it is known that

$$s = 7.299$$

$$n = 25$$

$$pq = 6.02$$

The formula was as follows:

$$R_{11} = \left(\frac{n}{n-1} \right) \left(\frac{s^2 - \sum pq}{s^2} \right)$$

So,

$$\begin{aligned} R_{11} &= \left(\frac{25}{25-1} \right) \left(\frac{7.299^2 - 6.02}{7.299^2} \right) \\ &= \left(\frac{25}{24} \right) \left(\frac{53.27 - 6.02}{53.27} \right) \\ &= (1.04)(0.89) \\ &= 0.92 \end{aligned}$$

The statistical counting above, the score reliability of the test is 0.92.

To know the reliability of the test, it must be compared with r product moment. R_{ii} must be higher than r_t . Then r_t at significant level 5% is 0.349 for df 32. While in the significant level 1% is 0.449. So, it can be stated that r_{ii} was higher than r_t **5% < r_{ii} > 1% or (0.349 < 0.92 > 0.449)**. On the other word, the instrument was reliable.

The reliability coefficients for good identified kind of structure text and reading comprehension test was expected to exceed 0.0 and closed 1.00.

Suharsimi states that the reliability of the test was considered as follows:

a. 0.0-0.20 = reliability is poor

b. 0.21-0.40 = reliability is satisfactory

- c. 0.41-0.70 = reliability is good
- d. 0.71-1.0 = reliability is excellent¹⁴

From the explanation above, the writer concluded that the test instrument was very high. R_{11} is higher than r table, it is $0.349 < 0.92 > 0.449$. Reliability of the test instrument includes is **excellent**.

3. The 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 technique with SPSS 19 version.

Analysis:

H_0 : population with normal distribution

H_a : population with not normal distribution

If the probability > 0.05 H_0 was accepted

If the probability < 0.05 H_0 was rejected

Table III. 11
One-Sample Kolmogorov-Smirnov Test

		PreTestControl	PostTestControl	PreTestExperiment	PostTestExperiment
	N	32	32	32	32
Normal Parameters ^a	Mean	65.25	66.00	65.12	77.50
	Std. Deviation	4.704	3.802	4.218	4.032
Most Extreme Differences	Absolute	.189	.232	.199	.364
	Positive	.136	.232	.199	.364
	Negative	-.189	-.174	-.159	-.230
	Kolmogorov-Smirnov Z	1.071	1.311	1.125	2.058

¹⁴ Suharsimi Arikunto, *Dasar – dasar Evaluasi Pendidikan*, Jakarta: Bumi Aksara, 2009, p.218.

Asymp. Sig. (2-tailed)	.201	.064	.159	.068
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a. Test distribution is Normal.

Sig or p of pre-test in control class was $0.201 > 0.05$. It means that H_0 was accepted or the data was normal, the Sig or p of post-test in control class was $0.064 > 0.05$. It means that H_0 was accepted or the data was normal, the Sig or p of pre-test in experimental class was $0.159 > 0.05$. It means that H_0 was accepted or the data was normal, and the Sig or p of post-test in experimental class was $0.068 > 0.05$. It means that H_0 was accepted or the data was normal.

G. The Technique of Data Analysis

The technique of data analysis used in this research was T-test formula by using SPSS (Statistical Package for the Social Sciences). In analyzing the data, the writer used the checklist on the observation list and scores of post-test of experimental as well as the control group. These scores were analyzed statically. The writer used score of experimental class and control class.

To analyze the collected data, the writer established some categories to classify the result of the test as main instrument of this research, According to Hartono; the score range is as follows:

Formula :

$$t_o = \frac{Mx - My}{\sqrt{\left(\frac{SDx}{\sqrt{N-1}}\right)^2 + \left(\frac{SDy}{\sqrt{N-1}}\right)^2}}$$

Where:

Mx : Mean score of experiment class

M_y : Mean score of control class

SD_x : Standard deviation of experiment class

SD_y : Standard deviation of control class

N : Number of students

The t-test was obtained by considering the degree of freedom (df) = $(N_1+N_2)-2$. Statistically the hypotheses are:

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

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

H_0 is accepted if $t_o < t\text{-table}$ or there is no significant effect of using Five W's strategy on students' reading comprehension.

H_a is accepted if $t_o > t_{\text{table}}$ or there is significant effect of using Five W's strategy on students' reading comprehension.