

CHAPTER III
THE RESEARCH METHODOLOGY

A. The Design of the Research

This research was experimental research which used pre-test as well as post-test. It involved two classes an experimental class and a control class. The experimental class was the class taught by using Story Pyramid Strategy and control class was the class taught by using conventional Strategy. This research was categorized as Quasi-Experimental design. It was focused on nonequivalent control group design. Both of the groups took pretest and post test and only the experimental group took the treatment¹. Jhon W. Creswell stated that in experimental research; we test an idea (practice or procedure) to determine whether it influences an outcome or dependent variable. It means that in experimental research, we make some tests after giving the treatment to find out how far the influence of our method to the students.²

In working with such intact nonequivalent groups, the nonequivalent control group design shows below:

Class	Pre-Test	Treatment	Post-Test
X6	O	X	O
X7	O		O

O = Test

X = Treatment

B. The Location and the Time of the Research

¹Tuckman. Educational Research.p.141

²Cresswell, John.W., 2008. *Educational Research : Planning, Conducting, and Evaluating Quantitative and Qualitative Research* . New Jersey : Person Education.p.229

The research was conducted at the tenth grade students of state senior high school 1 Taluk Kuantan Kuantan Singingi Regency.

C. The Subject and the Object of the Research

The subject of this research was the students' senior high school 1 Taluk Kuantan and the object of this research was the effect of using Story Pyramid Strategy on students' reading comprehension at state senior high school 1 Taluk Kuantan Kuantan Singingi Regency.

D. The Population and Sample of the Research

The population of this research was all the tenth grade students at Senior high School 1 Taluk Kuantan which consisted of 7 classes they were X1 (35 students), X2 (35 students), X3(36 students), X4 (34 Students), X5 (34 Students), X6 (34 Students), X7(34 Students) Based on the data above, the population was counted 240 students. In this research, the writer used Quasi-Experimental research design, the writer took two classes only, they were X6 and X7. X6 that consisted of 34 students as experimental group and X7 consisted of 34 students as control group. So the total of sample was 68 Students.

Since the number of total population was quite large, the writer used random cluster sampling to take the sample of this research. The specification of the population can be seen on the table below:

TABLE III.1
The Population of the Research of the Tenth Grade Students at State Senior High School 1 Taluk Kuantan Kuantan Singingi Regency

No	Classes	Total
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1	X1	35
2	X2	33
3	X3	36
4	X4	34
5	X5	34
6	X6	34
7	X7	34
Total		240

The specification of the research sample can be seen on the table belows:

No	Classes	Male	Female	Total
1	X6	22	12	34
2	X7	19	15	34
Total of Sample				68

E. The Technique of Data Collection

In order to get some data that were needed to support this research, the writer applied the techniques as follows:

1. Test

The test was distributed to measure the students' reading comprehension in Narrative texts. The test was divided into two tests; a pre-test which was given before the

treatment and a post-test was given after doing the treatment. The test would be a multiple choices. Multiple choices could assess the students' ability in comprehension.

Table. III.2
The Blue Print Pre-Test

No	Indicators	Number of Items
1.	Finding Factual Information	1, 6, 11, 16
2.	Identify Main Idea	2, 7, 12, 17
3.	Locating Meaning of Vocabulary in Context	3, 8, 13, 18
4.	Identify reference	4, 9, 14, 19
5.	Make inferences from the text	5, 10, 15, 20

Table. III.3
The Blue Print Post-Test

No	Indicators	Number of Items
1.	Finding Factual Information	1, 6, 11, 16
2.	Identify Main Idea	2, 7, 12, 17
3.	Locating Meaning of Vocabulary in Context	3, 8, 13, 18
4.	Identify reference	4, 9, 14, 19
5.	Make inferences from the text	5, 10, 15, 20

After the students did the test, the writer took the total score from the result of the reading comprehension test. The classification of the students' score is shown below:³

³Suharsimi Arikunto. *Dasar-dasar Evaluasi Pendidikan*. Jakarta: Bumi Aksara, 2009, p. 245

Table III.4
The Classification of Students Score

Score	Categories
80-100	Very Good
66-79	Good
56-65	Enough
40-55	Less
30-39	Fail

Before the test was conducted, the students had to be tested by using validity and reliability.

2. The Validity and Reliability of the Test

a. Validity

Before the test was given to the samples of this research, the test was tried out to 33 students of X 2 class. The purpose of the try out was to obtain validity and reliability of the test. The writer used Content Validity. The test is said to be valid if it measures what it was intended to measure.⁴ It was determined by finding the difficulty level of each item. The formula of item difficulty is as follows:⁵

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

Where

P : Index of difficulty or facility value

B : the number of correct answers

JS : the number of examinees or students

⁴Elana Shohamy, Op. Cit. p.74

⁵Suharsimi Arikunto., Op. Cit. p. 208

The standard level of difficulty used is $>0,30$ and $<0,70$ ⁶. It means that an item is accepted if the level of difficulty is between $0,30-0,70$ and it is rejected if the level of difficulty is less than $0,30$ (the item is too difficult) and over than $0,70$ (the item is too easy). The proportion of correct answer is represented by “p”, whereas the proportion of incorrect answer is represented by “q”. The calculation of item difficulty can be seen from the following table:

Table III.5
The Students are Able to Find Factual Information

Variable	Finding Factual Information				Number of Student
Item No.	1	6	11	16	33
Correct	22	17	16	23	
P	0.67	0.52	0.48	0.70	
Q	0.33	0.48	0.52	0.30	

Based on the table, the item numbers of question for finding factual information are 1, 6, 11, and 16. It shows that the proportion of correct answer for finding factual information of test item number 1 is 0,67, the proportion of correct answer for test item number 6 is 0,52, the proportion of correct answer for test item number 11 is 0,48 and the proportion of correct answer for test item number 16 is 0,70. The average correct answer of finding factual information is 0,59. Then, based on the standard level of difficulty, all items for finding factual information or “P” is $>0,30$ and $<0,70$. So, the items of finding factual information are accepted.

⁶Hartono, *Analisis Item Instrumen* .pekanbaru: Zanafa Publishing, 2010, p39

Table III.6
The Students are Able to Identify Main Idea

Variable	Identifying Main Idea				Number of Student
Item No.	2	7	12	17	33
Correct	21	18	19	19	
P	0.64	0.55	0.58	0.58	
Q	0.36	0.45	0.42	0.42	

Based on the table, the item numbers of question for Identifying Main Idea are 2, 7, 12, and 17. It shows that the proportion of correct answer for Identifying Main Idea of test item number 2 is 0,64, the proportion of correct answer for test item number 7 is 0,55, the proportion of correct answer for test item number 12 is 0,58 and the proportion of correct answer for test item number 17 is 0,58. The average correct answer of Identifying Main Idea is 0,58. Then, based on the standard level of difficulty, all items for Identifying Main Idea or “P” is $>0,30$ and $<0,70$. So, the items of Identifying Main Idea are accepted.

Table III.7
The Students are Able to Locate Meaning of Vocabulary

Variable	Locating Meaning of Vocabulary				Number of Student
Item No.	3	8	13	18	33
Correct	18	22	21	17	
P	0.55	0.67	0.64	0.52	
Q	0.45	0.33	0.36	0.48	

Based on the table, the item numbers of question for Locating Meaning of Vocabulary are 3, 8, 13, and 18. It shows that the proportion of correct answer for Locating Meaning of Vocabulary of test item number 3 is 0,55, the proportion of correct answer for test item number 8 is 0,67, the proportion of correct answer for test item number 13 is 0,64 and the proportion of correct answer for test item number 18 is 0,52. The average correct answer of Locating Meaning of Vocabulary is 0,59. Then, based on the standard level of difficulty, all items for Locating Meaning of Vocabulary or “P” is $>0,30$ and $<0,70$. So, the items of Locating Meaning of Vocabulary are accepted.

Table III.8
The Students are Able to Identify Reference

Variable	Identifying Reference				Number of Student
Item No.	4	9	14	19	33
Correct	21	20	22	23	
p	0.64	0.61	0.67	0.70	
q	0.36	0.39	0.33	0.30	

Based on the table, the item numbers of question for Identifying Reference are 4, 9, 14, and 19. It shows that the proportion of correct answer for Identifying Reference of test item number 4 is 0,64, the proportion of correct answer for test item number 9 is 0,61, the proportion of correct answer for test item number 14 is 0,67

and the proportion of correct answer for test item number 19 is 0,70. The average correct answer of Identifying Reference is 0,65. Then, based on the standard level of difficulty, all items for Identifying Reference or “P” is $>0,30$ and $<0,70$. So, the items of Identifying Reference are accepted.

Table III.9
The Students are Able to Make Inference

Variable	Making Inference				Number of Student
Item No.	5	10	15	20	33
Correct	23	19	19	23	
p	0.70	0.58	0.58	0.70	
q	0.30	0.42	0.42	0.30	

Based on the table, the item numbers of question for Making Inference are 5, 10, 15, and 20. It shows that the proportion of correct answer for Making Inference of test item number 5 is 0,70, the proportion of correct answer for test item number 10 is 0,58, the proportion of correct answer for test item number 15 is 0,58 and the proportion of correct answer for test item number 20 is 0,70. The average correct answer of Making Inference is 0,64. Then, based on the standard level of difficulty, all items for Making Inference or “P” is $>0,30$ and $<0,70$. So, the items of Making Inference are accepted.

b. Reliability

Reliability is a necessary requirement of good test. Shohamy says that reliability refers to the extent to which the test is consistent in its score and it gives us an indication of how accurate the test scores are.⁷ It is clear that reliability is used to

⁷Elana Shohamy., *Op. Cit.* p. 70

measure the quality of the test scores and the consistency of the test. The researcher used the Kuder Richardson 20 (K-R 20) formula to calculate the reliability of the test.⁸

$$r_{11} = \left(\frac{k}{k-1} \right) \left(\frac{Vt - \sum pq}{Vt} \right)$$

Where:

r_{11} : Instrument reliability

k : Number of items

Vt : Variance total (the square of Standard Deviation)

P : The proportion of the students who are correct in answering an item divided with the total number of the students

Q : The proportion of the students who are incorrect in answering an item divided with the total number of students.

The data can be seen at **Appendix 4**

Based on the data the writer got;

$k = 20$

$Vt = 102.75$

$pq = 4.67$

$$r_{11} = \left(\frac{20}{20-1} \right) \left(\frac{102,75 - 4,67}{102,75} \right)$$

$$r_{11} = \left(\frac{20}{19} \right) \left(\frac{98,08}{102,75} \right)$$

$$r_{11} = (1,05)(0,95)$$

$$r_{11} = 0,998$$

⁸Suharsimi Arikunto, *Prosedur Penelitian: Suatu Pendekatan Praktik*. Jakarta:PT. Rineka Cipta, 2006,p.188

To know whether the test is reliable or not, the value of r_{11} must be consulted with r product moment. The value of r_{11} must be higher than r table. From the calculation above the value of r_{11} is 0,998. Then the r_t at 5% grade of significance is 0,232. While r_t at 1% grade of significance is 0,302. So, it can be concluded that $0,232 < 0,998 > 0,302$. On the other hand, the instrument is reliable because the value of r_{11} is higher than r_t .

3. The Technique of Data Analysis

In order to know the effect of using Story Pyramid Strategy on students' reading comprehension, the writer used the data from pre-test and post-test score then analyzed it by using T-Test formula in Hartono as follows:⁹

$$t_o = \frac{M_x - M_y}{\sqrt{\left(\frac{SD_x}{\sqrt{N-1}}\right)^2 + \left(\frac{SD_y}{\sqrt{N-1}}\right)^2}}$$

Where:

- t_0 : The value of t – obtained
- M_x : Means score of experimental sample
- M_y : Mean score of control sample
- SD_x : Standard deviation of experimental class
- SD_y : Standard deviation of control class
- N : Number of students

The t-table is confronted to see whether there is a significant effect between the mean score of both experimental and control or not. The t-obtained value is consulted

⁹Hartono. *Statistik Untuk Penelitian*. Yogyakarta: Pustaka Pelajar, 2008, p. 208

with the value of t-table at the degree of freedom $(df) = (N_1+N_2) - 2$. Then to know whether H_a and H_o is rejected or accepted, the hypotheses are statistically formulated as follows:

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

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

H_a is accepted if $t_o > t\text{-table}$ or there is any significant effect of using Story Pyramid strategy on students' reading comprehension in narrative text of the tenth gradeat Senior High School 1 Taluk Kuantan Kuantan Singingi Regency..

H_o is accepted if $t_o < t\text{-table}$ or there is no significant effect of using Story Pyramid strategy on students' reading comprehension in narrative text of the tenth gradeat Senior High School 1 Taluk Kuantan Kuantan singingi Regency.

