

CHAPTER III

RESEARCH METHOD

A. The Research Design

The design of this research is an Experimental design. The writer wanted to find out the effect of using Story Gloves strategy towards reading comprehension in narrative text of the first grade students at SMAN 2 Mandau.

In this research, there were two variables used. Story Gloves strategy was as an independent variable and students' reading comprehension in narrative text was as dependent variable. The writer used Quasi Experimental, with non equivalent control group.¹ Here the writer gave pre-test to experimental and control class. Then, the writer gave treatment to experimental class only. Finally, the writer gave post-test to both of classes in order to know the effectiveness of Story Gloves strategy applied by the writer. The design is :

Table III. 1
Research Design Diagram

Group	Pre – test	Treatment	Post – test
E	Test 1	X	Test 2
C	Test 1		Test 2

Note:

E : Experimental Group

C : Control Group

T1 : Pre- Test to experimental Group and Control Group

¹ John W. Creswel, Educational Research: Planning, Conducting, and evaluating Quantitative and Qualitative Research. Third Edition. (New Jersey :Pearson Education,2008)

X : Receive the treatment using Story Gloves strategy

T2 : Post-test to Experimental and Control Group

B. The Location and The Time of The Research

This research started on 02 September 2013 and finished on 20 September 2013. The research was conducted in SMAN 2 Mandau at Jendral Sudirman Street, Simpang Padang, Duri.

C. The Subject and Object of The Research

The subject of this research was the first grade students at SMAN 2 Mandau and the object of this research was Story Gloves strategy and reading comprehension in narrative text.

D. The Population and The Sample of The Research

The population of this research was the first grade students of SMAN 2 Mandau. There were 9 classes which consisted of 35 students in X¹, 36 students in X², 36 students in X³, 35 students in X⁴, 37 students in X⁵, 36 students in X⁶, 35 students in X⁷, 37 students in X⁸, and 36 students in X⁹. The total number of the population was 318 students.

Table III. 2
The Total Population of the First Grade Students of SMAN 2 Mandau

No	Class	Total students
1	X 1	35
2	X 2	36
3	X 3	36
4	X 4	35
5	X 5	37
6	X 6	36
7	X 7	35
8	X 8	37
9	X 9	36
Total		318

Based on the population above, the technique used in this research was cluster sampling. According to Gay, cluster sampling randomly selects groups, not individually but all the members of selected group have similar characteristic.² Therefore, the writer took two classes (experimental class and control class) in order to have the same chance as the sample in this research. The X² was as a control class and X³ was as an experimental class.

E. The Technique of Collecting Data

To find out the effect of using Story Gloves strategy towards students' reading comprehension in narrative text of the first grade students at SMAN 2 Mandau, the writer used test as the instruments to collect the data.

The writer gave the test to find out the result of teaching and learning process by using new strategy. In here the writer used multiple choice test to collect the data.

²*Ibid.* p. 422

The kinds of test given to the students are as follows:

1. Pre-test was given to the student before giving the treatment of the strategy to both of the classes, experimental class and control class. The writer gave the test. The form of test is multiple choice question. This test consists of 20 items.
2. Post-test was given at the end of the treatment to the experimental and control class. In the post-test writer used multiple choice test about 20 items. It was to know the effect of the strategy applied in experimental class.

For the clear one about this test, the blue print of indicators, it can be seen at appendix 4.

F. The Technique of Data Analysis

In order to find out whether there was the effect of using Story Gloves strategy towards reading comprehension in narrative text of the first grade students at SMAN 2 Mandau, the data statistically were analyzed.

There were some general categories to give an assessment of the aspects of the English skills in general. This category could also be applied in reading skill, especially to evaluate the students' reading comprehension in reading text. The test composed of 20 items and each was give score 5. The score of test and reading comprehension in narrative test can be classified in this table below:³

³ Suharsimi Arikunto, *Dasae-Dasar Evaluasi Pendidikan, Edisi Revisi*. (Jakarta: Bumi Aksara, 2009). p.245

Table III. 3**The Scale of Students' Reading Comprehension**

The Score of Reading Comprehension Level	Category
80-100	Very Good
66-79	Good
56-65	Enough
40-55	Less
30-39	Fail

In analyzing the data, the researcher used t-test formula. According to Hartono, t-test is one of the statistic tests used to know whether any or not the significant difference of two samples of mean in two variables.⁴ The data were statistically analyzed by using SPSS 16.0 version to know whether the result of the research is statistically significant.⁵ Manually, the formula of t-test is as follows:

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

t_o = The value of t-obtained

Mx = Means score of experimental sample

My = Means score of control sample

SDx = Standard deviation of experimental group

SDy = Standard deviation of control group

⁴ Hartono. *Statistik untuk Penelitian*. (Yogyakarta: Pustaka Pelajar, 2008) P.171

⁵ Hartono. *SPSS 16.0: Analisis Data Statistika dan Penelitian*. (Pekanbaru: Zanafa, 2008).

N = Number of the students

The t-table is employed to see whether there is a significant difference between the mean score both experimental and control group. The t-obtained value is consulted with the value of t-table at the degree of freedom ($df = (N1 + N2) - 2$)

Statistical hypothesis is:

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 significant effect of using story gloves strategy towards reading comprehension in narrative text.

H_o is accepted if $t_o < t\text{-table}$ or there is no significant effect of using story gloves strategy towards reading comprehension in narrative text.

1. The Item Difficulties, Validity and Reliability

a. The Item Difficulties

Before the test was given to the sample of this research, the writer tried out the test to 31 students. The purpose of try out is to obtain validity and reliability of the test. The test was given to the students was considered not too difficult or not too easy. According to Arikunto⁶ the test is accepted if the degree of difficulty is between 0.30 – 0.70. It was determined by finding the difficulty level of each item. The formula for item difficulty is as follows:⁷

⁶ Suharsimi Arikunto, *Op. Cit.*, p. 208

⁷ Ibid. p 208

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

In Which:

P : Index of difficulty

B : The number of correct answer

JS : The number of students

The difficulty level of an item shows how easy or difficult a particular item in a test. The items that do not reach the standard level of difficulty are excluding from the test and they are changed with new items that are appropriate.

The standard level of difficulty used is < 0.30 and > 0.70 . 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 is represented by “p”, whereas the proportion of incorrect is represented by “q”. The calculation of item difficulty can be seen from the following table:

Table III.4
The students are able to analyze the meaning of certain words in Narrative text

Variable	Finding certain words				N
Item no	1	6	11	16	31
Correct	16	19	16	17	
P	0.52	0.61	0.51	0.54	
Q	0.49	0.31	0.49	0.46	

Based on the table, the item numbers of question to analyze the meaning of certain words are 1, 6, 11, and 16. It shows the proportion of correct answer of the test. The proportion of correct answer for test item

number 1 is 0.52, the proportion of correct answer for test item number 6 is 0.61, the proportion of correct answer for test item number 11 is 0.51, and the proportion of correct answer for test item number 16 is 0.54. The average correct answer to find out main idea is 0.54. Then, based on the standard level of difficulty “p” is >0.30 and <0.70 . So, the items of identifying main idea are accepted.

Table III.5
The students are able to state the main idea in narrative text

Variable	Stating Main Idea				N
Item no	2	7	12	17	31
Correct	14	17	17	12	
P	0.45	0.54	0.54	0.38	
Q	0.55	0.46	0.46	0.62	

Based on the table, the item numbers of question to identify the main idea in narrative text are 2, 7, 12, and 17. It shows the proportion of correct answer of the test. The proportion of correct answer for test item number 2 is 0.45, the proportion of correct answer for test item number 7 is 0.54, the proportion of correct answer for test item number 12 is 0.54, and the proportion of correct answer for test item number 17 is 0.46. The average correct answer to identify the main idea is 0.49. Then, based on the standard level of difficulty “p” is >0.30 and <0.70 . So, the items of finding the main idea of the text are accepted.

Table III.6
The students are able to identify generic structure in narrative text

Variable	Identifying the Generic Structure				N
Item no	3	8	13	18	31
Correct	13	19	12	20	
P	0.41	0.61	0.38	0.64	
Q	0.59	0.39	0.62	0.36	

Based on the table, the item numbers of question to identify the generic structure in narrative text are 3, 8, 13, and 18. It shows the proportion of correct answer of the test. The proportion of correct answer for test item number 3 is 0.41, the proportion of correct answer for test item number 8 is 0.61, the proportion of correct answer for test item number 13 is 0.38, and the proportion of correct answer for test item number 18 is 0.64. The average correct answer to find the new vocabulary is 0.51. Then, based on the standard level of difficulty “p” is >0.30 and <0.70 . So, the items of finding the new vocabulary are accepted.

Table III.7
The students are able to make inference in narrative text

Variable	Making Inference in Narrative Text				N
Item no	4	9	14	19	31
Correct	21	18	20	21	
P	0.67	0.58	0.64	0.67	
Q	0.33	0.42	0.36	0.33	

Based on the table III.8, the item numbers of question to make inference in narrative text are 4, 9, 14, and 19. It shows the proportion of correct answer of the test. The proportion of correct answer for test item

number 4 is 0.67, the proportion of correct answer for test item number 9 is 0.58, the proportion of correct answer for test item number 14 is 0.64, and the proportion of correct answer for test item number 19 is 0.67. The average correct answer of making inference is 0.64. Then, based on the standard level of difficulty “p” is >0.30 and <0.70 . So, the items of making inference in reading narrative text are accepted.

Table III.8
The students are able to identify references in reading narrative text

Variable	Identifying references				N
Item no	5	10	15	20	31
Correct	20	15	19	14	
P	0.64	0.48	0.61	0.45	
Q	0.36	0.52	0.39	0.55	

Based on the table, the item numbers of question to identify references are 5, 10, 15, and 20. It shows the proportion of correct answer of the test. The proportion of correct answer for test item number 5 is 0.64, the proportion of correct answer for test item number 10 is 0.48, the proportion of correct answer for test item number 15 is 0.61, and the proportion of correct answer for test item number 20 is 0.45. The average correct answer of identifying references is 0.54. Then, based on the standard level of difficulty “p” is >0.30 and <0.70 . So, the items of identifying references are accepted.

b. Validity

Every test, whether it is a short, informal classroom test, or public examination should be as valid as the test constructor that can make it. The

instrument of the test must aim at providing a true measure. The instrument of the test is valid if the instrument used can measure the thing that will be measured.⁸

The writer tested the test twice to measure the validity. The purpose of try out was to obtain validity and reliability of the test. It was determined by finding the difficulty level of each item.

The instrument of the test must aim at providing a true measure of the participation skill in which it is intended to measure. The instrument of the test is valid if the instrument used can measure the thing that will be measured⁹.

To find out validity of the test, the writer used correlation product moment formula as follows:¹⁰

$$r_{xy} = \frac{\sum xy}{\sqrt{\sum x^2 \sum y^2}}$$

Where:

r_{xy} = correlation product moment x dan y

x = the result of try out 2

y = the average of students' English score

$\sum xy$ = total x dan y

$\sum x^2$ = X quadrant

$\sum y^2$ = Y quadrant

⁸L.R. Gay and Peter Airaisian. *Educational Research Competencies for Analysis and Application* (6th Edition). (New Jersey: PrenticeHall.Inc. 2000).p. 23

⁹*Ibid.*,p.23

¹⁰SuharsimiArikunto, *Op. Cit.*,p. 70

$$X = \frac{\sum X}{N} = \frac{1700}{31} = 54.8$$

$$Y = \frac{\sum y}{N} = \frac{2120}{31} = 68.4$$

$$r_{xy} = \frac{\sum xy}{\sqrt{\sum x^2 \sum y^2}}$$

Where:

r_{xy} = correlation product moment x dan y

$\sum xy$ = total x dan y

$\sum x^2$ = X quadrant

$\sum y^2$ = Y quadrant

$$r_{xy} = \frac{2941.92}{\sqrt{4924.24 \cdot 3619.36}} = 17822597.29$$

$$r_{xy} = \frac{2941.92}{4221.6}$$

$$r_{xy} = 0.69$$

According to Suharsimi Arikunto, the range of validity is¹¹

Table III.9

NO	Classification	Score
1	Very High	0.800-1.00
2	High	0.600-0.800
3	Moderate	0.400-0.600
4	Low	0.200-0.400
5	Negligible	0.00-0.200

¹¹Suharsimi Arikunto, *Op. Cit.*, p.75

The result of the validity tests is 0.69, so the validity is **High**.

c. Reliability

A test must first be reliable as measuring instrument. Reliability is a characteristic of any good test. A reliability measures in one that provides consistent and stable indication of the characteristic being investigated.¹². Calculation of reliability uses various kinds of formula. They are Spearman-Brown formula, Flanagan formulas, Rulon formula, Hoyt formula, Alfa formula, Kuder Richardson 20 formula and Kuder Richardson 21 formula. From all of these formula, the researcher used the Kuder Richardson 20 (K-R 20) formula to calculate the reliability of the test. The formula is as follows:

$$r_{ii} = \left(\frac{n}{n-1} \right) \left(\frac{St^2 - \sum pq}{St^2} \right)$$

Where are :

$$\begin{aligned} S_t^2 &= \frac{\sum x_t^2}{N} \\ &= \frac{196.97}{31} \\ &= \mathbf{6.35} \end{aligned}$$

$$n = 20$$

$$St^2 = 6.35$$

$$\sum pq = 4,76$$

¹²SuharsimiArikunto. *Dasar-DasarEvaluasiPendidikan*. Jakarta: BumiAksara. 2009.p. 87

$$x_t^2 = 196.97$$

$$N = 31$$

So,

$$\begin{aligned} r_{ii} &= \left(\frac{n}{n-1} \right) \left(\frac{St^2 - \sum pq}{St^2} \right) \\ &= \left(\frac{20}{20-1} \right) \left(\frac{6.35 - 4.76}{6.35} \right) \\ &= \left(\frac{20}{19} \right) \left(\frac{1.59}{6.35} \right) \\ &= (1.05)(0.25) \\ &= 0.8 \end{aligned}$$

d. $r_{ii} > r_t$.

Manually, the score reliability of the test is **0.8**. To know the reliability of the test must be compared with r product moment. r_{ii} must be higher than r_t . Then r_t at 5% level of significance is 0.349. While in the significance of 1 % is 0.449. So, it can be analyzed that r_{ii} higher than r_t . $5\% < r_{ii} > 1\%$. (0.349 < **0.8** > 0.449). On the other hand, the instrument is reliable.