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CHAPTER III

THE DESIGN OF THE RESEARCH

A. Research Design

The design of this research was an experimental research. According to Creswell (2009, p.299) experimental research is used when the writer wants to establish possible cause and effect between the independent and dependent variables. It means that there are difference context that will produce cause and effect result. The design of this research was quasi-experiment design. Quasi-experiment research was test and idea (or practice or procedure) to determine whether it influences an outcome or dependent variable. This research was quasi-experimental research by using pre-test and post-test nonequivalent group design. There are two variables in this research, the first variable was breaking news game as independent variable (x variable), the second was reading comprehension as the dependent variable (y variable).

This research used experimental and control class. The research design was nonequivalent group design. Therefore, the experimental class will be provided with pre-test, treatment, and post-test. Meanwhile the control class will be treated without using breaking news game. The design can be seen in the following table:

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Table III.1
Table of Research Design

Group	Pre-test	Treatment	Post-test
Experimental	O1	X	O2
Control	O3	-	O4

Where: E : Experimental Group
 C : Control Group
 X1 : Pre-test in experimental group
 X2 : Pre-test in control group
 Y1 : Post-test in experimental group
 Y2 : Post-test in control group
 T : Treatment

B. The Subject and Object of the Research

The subject of this research was students of Junior High School Yayasan Dwi Sejahtera Pekanbaru. The object of this research was using breaking news game on reading comprehension in narrative text.

C. The Location and Time of the Research

This research was conducted at the second Junior High School Yayasan Dwi Sejahtera Pekanbaru in 2015/2016 academic year. It was located on Soekarno-Hatta Street. The research was conducted for about 1 month which was consisted on 8 meetings including for giving pretest and posttest. It was started on April to Mei 2016.



D. The Population and Sample of the Research

1. Population

The population in this research was the Junior High School Yayasan Dwi Sejahtera Pekanbaru. It had fourteen classes. The number of the Junior High School Yayasan Dwi Sejahtera Pekanbaru was 117 students.

2. Sample

Considering that this population of the research was bigger, thus the writer should take the sample of the population of the research. In this research, the writer used random sampling technique, especially cluster random sampling. According to Gay and Airasian (2000, p.123) random sampling was the process of selecting a sample in such a way that all individuals in the defined population have an equal and independent chance of being selected for the sample. Cluster sampling randomly select the groups, not individuals. In this research, the writer took two of fourteen classes as the samples. Class VIII.2 was as an experiment class and class VIII.3 was as a control class. Both class VIII.2 consisted of 30 students and class VIII.3 consisted of 28 students, so that the total sample of this research was 58 students.

E. The Technique of Collecting Data

The data collection of this research was conducted by using tests (pre and post). According to Brown (2007, p.3) test means that a method of measuring of a person's ability, knowledge or performance in given domain. In

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this research, test will be divided into two ways; pretest which is given before the treatment and posttest which is given after doing treatment. In this research, the researcher used test. The test was multiple choice, the question consist of 20 item based on the indicator. The researcher administred pretest and posttest. Then, the researcher took the total score from the result of the reading comprehension test.

1. Procedures of Collecting Data for Control Class

In control class there were three procedures of collecting data:

- a. Pre test: Pretest was a test that was given to the students before they were taught by using conventional method. It was used to measure the students' comprehension in reading before they were taught by using conventional strategy.
- b. Teaching by using conventional strategy: In this case, the students were taught by using conventional strategy. The researcher explained to the students about narrative text, and the topic, and then taught them by using conventional strategy.
- c. Posttest was a test that was given to the students after they were taught by using conventional method. It was used to measure whether the students were able to comprehend narrative text.

2. Procedures of Collecting Data for Experimental Class

In the experimental class there were three procedures of collecting data:

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- a. Pre test: Pre test was a test that was given to the students before they were taught by using Breaking News Game. It was used to measure the students' reading comprehension before they were taught by using Breaking News.
- b. Treatment: In treatment, the students were taught by using Breaking News Game. The researcher explained to the students about narrative text, and the topic, and then taught them by using Breaking News Game.
- c. Post test: Post test was a test that was given to the students after they were taught by using Breaking News Game. It was used to measure whether the students were able to comprehend narrative text.

The blue print of the test is as follows:

Table III.3
Blue Print of the Reading Comprehension On
Narrative Text

Question Indicators	Question Number	Source
Identify the purpose of narrative	1, 6, 11, 16	Reading text book (quoted from internet)
Identify the factual information	2, 7, 12, 17	
Identify the generic structure	3, 8, 13, 18	
Identify meaning of word	4, 9, 14, 19	
Identify the moral value	5, 10, 15, 20	

Based on the table III.3 the proportion indicators of reading text are purpose of narrative text, it can be found on item number 1,6,11,16, to identify the factual information on item number 2,7,12,17, to identify the generic structure of narrative text on item number 3,8,13,18, to identify the meaning of word on item number 4,9,14,19, and to identify the moral value on item number 5,10,15,20.

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Table III.3
Blue Print of the Reading Comprehension On
Narrative Text

Question Indicators	Question Number	Source
Identify the purpose of narrative	1,7,14,17,	Reading text book (quoted from internet)
Identify the factual information	4,10,15,20	
Identify the generic structure	3,8,12,18	
Identify meaning of word	4,9,14,19	
Identify the moral value	5,9,13,19	

Based on the table III.3 the proportion indicators of reading text are purpose of narrative text, it can be found on item number 1,7,14,17, to identify the factual information on item number 4,10,15,20, to identify the generic structure of narrative text on item number 3,8,12,18, to identify the meaning of word on item number 4,9,14,19, and to identify the moral value on item number 5,9,13,19.

After doing the test, the researcher then looked the total score from the result of the test. The score can be classified as follows: (Arikunto, 2009, p.245)

Table III.4
The Classification of Score of Reading Comprehension

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

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F. Validity and Reliability of Instrument

1. Validity of Instrument

Every test should be as valid as the test constructor can make it. The test must aim at providing a true measure of the particular skill in which it is intended to measure.

Heaton states (2008, p.199) that the validity of a test refers to appropriateness of a given test or any of its component parts as measure of what it is purposed to measure. It means the test is valid to the extent that is measured what it is supposed to measure. There are three kinds of validity. They are face, content, construct and empirical validity. This research used content validity. Content validity refers to whether or not the content of the manifest is right to measure the latent concept that we are trying to measure.

The test given to students was considered too difficult or too easy. Item difficulty was determined as the proportion of correct responses. This is held pertinent to the index difficulty; it was generally expressed as the percentage of the students who answered the questions correctly. The formula for item difficulty is as follows:

$$P = \frac{\sum B}{N}$$

Note

P: proportion of correct answer= index difficulties

$\sum B$: the number of correct answer

N : the number of students taking the test

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The formula above was used to find out easy or difficult test items that researcher gave to the respondents. The items did not reach the standard value of difficulty were modified. the standard value of the proportion of correct can be seen in the table below: (Hartono, 2010, p.38)

Table III.5
Index Difficulty Level Of Instruments

Proportion correct (p)	Item category
$P > 0.70$	Easy
$0.30 \leq P \leq 0.70$	Average
$P < 0.30$	Difficult

The facility value under 0.30 is considered difficult and above 0.70 is considered easy. The items categorised in the level of easy or difficult ($p < 0.30$ or $p > 0.70$) should be modified. Therefore, the standard value of the proportion of correct is between 0.30 and 0.70.

It can be seen from the following tables:

Table III. 6
Identify the Purpose of Narrative Text

Variable	Finding the purpose of narrative				N
Item no.	1	6	11	16	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 6 obtained the proportion of correct 0.67, item number 11 obtained the proportion of correct 0.54, and item number 16 obtained the proportion of

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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 purpose of narrative text were accepted.

Table III. 7
Identify the Factual Information of the Text

Variable	Finding the factual information of the text				N
Item no.	2	7	12	17	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 2 obtained the proportion of correct 0.32, item number 7 obtained the proportion of correct 0.54, item number 12 obtained the proportion of correct 0.45, and item number 17 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 factual information of text were accepted.

Table III. 8
Identify the Generic Structure of the Text

Variable	Finding the generic structure of the text				N
Item no.	3	8	13	18	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 3 obtained the proportion of correct 0.51, item number 8

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obtained the proportion of correct 0.48, item number 13 obtained the proportion of correct 0.51, and item number 18 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 generic structure of the text were accepted.

Table III. 9
Identify the Meaning of Word

Variable	Finding the meaning of word				N
Item no.	4	9	14	19	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 4 obtained the proportion of correct 0.48, item number 9 obtained the proportion of correct 0.64, item number 14 obtained the proportion of correct 0.61, and item number 19 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 meaning of word were accepted.

Table III. 10
Identify the Moral Value of the Text

Variable	Finding the moral value				N
Item no.	5	10	15	20	25
Correct	20	13	14	16	
P	0.64	0.41	0.45	0.51	
Q	0.35	0.58	0.54	0.48	

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Based on the table above, the proportion of correct answers for item number 5 obtained the proportion of correct 0.64, item number 10 obtained the proportion of correct 0.41, item number 15 obtained the proportion of correct 0.45, and item number 20 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 moral value of the text were accepted.

2. Reliability

A test must first be reliable as measuring instrument. According to Heaton (2008, p.162) 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.

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: (Sugiyono, 2007, p.359)

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

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)
 $\sum pq$: the multiplication result between p and q
 St^2 : total variance

Firstly, the researcher calculated the total variance:

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

Where:

- n : number of respondents

$$\begin{aligned} x^2 &= \sum xt^2 - \frac{(\sum xt)^2}{n} \\ &= 6289 - \frac{(417)^2}{25} \\ &= 6289 - \frac{173889}{25} \\ &= 6289 - 6955.56 \\ &= 666.5 \\ st^2 &= \frac{x^2}{n} \\ st^2 &= \frac{666.56}{30} \\ &= 22.21 \end{aligned}$$

$$\begin{aligned} ri &= \frac{k}{k-1} \left\{ \frac{S_t^2 - \sum P_i q_i}{S_t^2} \right\} \\ ri &= \frac{25}{(25-1)} \left\{ \frac{22.21 - 5.48}{22.21} \right\} \end{aligned}$$

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

$$r_i = 1.04 \times 0.75$$

$$r_i = 0.78$$

Based on the result above, it also can be stated that the reliability was

“Very High”

3. The Normality Test of Data

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 20 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

The result of normality of pre and post test score in experimental and control class was computed by using SPSS version 20. It was presented in the following table:

Table III. 11
Normality of Pretest Score

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
EXPERIMENT	.134	28	.200*	.936	28	.089
CONTROL	.150	28	.105	.953	28	.241

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Table III. 12
Normality of Posttest Score

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
EXPERIMENT	.163	28	.053	.948	28	.179
CONTROL	.153	28	.093	.953	28	.233

Based on the table above it showed that the significance level in Kolmogorov-Smirnov test of pretest experimental class was 0.200; it means that $0.200 > 0.05$, and significance level of pre-test control class was 0.105; it means that $0.105 > 0.05$. Significance level of post-test experimental class was 0.053; it means that $0.053 > 0.05$, and significance level of post-test control class was 0.093; it means that $0.093 > 0.05$. In conclusion, the data were in normal distribution.

G. The Technique of Data Analysis

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

a. Independent sample t-test

According to Hartono (2010, p.177) the function of independent sample t-test is 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. Gay (2007, p.484) 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. Independent sample t-



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test was used to find out the results of the first and second hypotheses.

They were as follows:

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

In this research, the data were analyzed by using SPSS 22.0 Version. The writer concludes that:

1. H_0 is accepted if the value on the Sig. (2-tailed) is *above* .05 (e.g. 0.06, 0.10). It means that there is no significant difference of students' reading comprehension of narrative text after being taught by using breaking news game at the junior high school yayasan dwi sejahtera pekanbaru.
2. H_a is accepted if the value in the **Sig. (2-tailed)** column is *equal or less* than .05 (e.g. 0.03, .01, .001). It means that there is a significant difference of students' reading comprehension of narrative after being taught by using breaking news at the junior high school yayasan dwi sejahtera pekanbaru.

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H. The Effect Size

In this research, the writer used effect size to know the size of increasing effect from the using of breaking news game on experimental class. According to Pallant (2005, p.208), effect size statistics provides an indication of the magnitude of the differences between the groups (not just whether the difference could have occurred by chance). The effect size was analyzed from the result of t test and the number of students. It was obtained by using the formula as follows:

$$\text{Eta squared} = \frac{t^2}{t^2 + (N1 + N2 - 2)}$$

The guidelines (proposed by Cohen, 1988) for interpreting this value are: 0.01 is small effect, 0.06 is moderate effect, and 0.14 is large effect.