

## CHAPTER III

### RESEARCH METHOD

#### A. Kinds of Research

The type of the research was an experimental research. According to (Cresswell, 2008, P. 295) “experiment is you test an idea (or practice or procedure) to determine whether it influences an outcome or dependent variable”. The design of this research was a quasi-experimental design, which used the two group pretest-posttest design.

In conducting the research, there were two classes that were used as experimental and control classes. The students were given pre-test at the beginning in order to know their abilities in comic. After that, they were given the treatment. Finally, they were given post-test. In the research, the pre-test and post-test were compared in order to determine the difference score between the students’ vocabulary mastery taught by using comic and taught without using comic. This research consisted of two variables; the independent variable was symbolized by “X” that was comic and dependent variable was symbolized by “Y” as students’ vocabulary mastery at the tenth grade students of Vocational High School Ibnu Taimiyah.

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

Group	Pre-test	Treatment	Post-test
E	O <sub>1</sub>	X	O <sub>2</sub>
C	O <sub>3</sub>	-	O <sub>4</sub>

Note:

- E = Experimental Group  
 C = Control Group  
 O<sub>1</sub> = Pre-test for experimental  
 O<sub>2</sub> = Post-test for experimental  
 X = Treatment

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

The research was conducted at Vocational High School Ibnu Taimiyah from September to October 2016.

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

### **1. The Subject of the Research**

The subject of the research was the tenth grade students at Vocational High School Ibnu Taimiyah.

### **2. The object of the research**

The object of the research was vocabulary mastery through reading comic and without using comic.

## **D. The Population and the Sample of the Research**

The population of this research was the tenth grade students at Vocational High School Ibnu Taimiyah. There were five classes which consisted of Accounting class, Office Administration class, TKJ class,

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Multimedia class and Hotel Management class. The number of the tenth grade students at Vocational High School Ibnu Taimiyah was 147 students.

**Table III.2**  
**The Total Population of the Tenth Grade Students at Vocational High School Ibnu Taimiyah**

No	Class	Male	Female	Total
1	SK	5	25	30
2	AK	12	18	30
3	PH	5	15	25
4	MM	19	11	30
5	TKJ	25	7	32
Total		56	71	147

Based on the total population above, the writer took sample by using cluster random sampling. Gay (2000: 394) said that cluster sampling randomly selects groups, not individuals. Therefore, the writer had selected two groups of students to be the samples of this research. They were the students of X SK as the experimental group and the students of X AK as the control group.

**Table III.3**  
**The Sample of the Research**

No	Class	Male	Female	Total
1	SK 1	5	25	30
2	AK 2	12	18	30
Total		17	42	60

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## **E. Technique of Collecting Data**

In order to get the data which were needed to support this research, the writer used the technique as follows:

### **1. Observation**

Observation was used to know whether this method had been applied as well as procedures or not. Besides, it was used to collect data about the implementation of using Comic. The writer had a list of observational item to be observed in experimental class during teaching and learning process.

### **2. Test**

In this research, the writer used test to measure the students' Vocabulary through Reading Comic. The writer used pre-test and post-test. Pre-test was used to know the students' Vocabulary before doing treatment to experimental and control classes. Post-test was done at the end of the research to know the improvment of using Comic or treatment for experimental class and also to know the differences between experimental and control classes. The type of the test was multiple choices test. The blue print of the test is as follows:

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

No	Indicator	Number of items
1.	Students' ability to find Prefixes	3,4
2.	Students' ability to find Suffixes	1,2
3.	Students' ability to find Word Classes	5,6
4.	Students' ability to find Word Information	7,8,9
5.	Students' ability to find Multi-Word Unit	10,11
6.	Students' ability to find Collocation	12
7.	Students' ability to Spell the Word	13,14,15
8.	Students ability to find the Antonym of the Word	19,20
9.	Students' ability to find the Synonym of the Word	16,17
10.	Students' ability to find the Hamonym	18
	Total	20

After doing the tests, the writer then analyzed the total score from the result of the test. According to Arikunto (2007:245) score of students can be analyzed through a table of classified score. So, the score of students was classified as follows:

**Table III.5**  
**The classified of score**

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

### 3. Validity of the Test

Before the test was given to the sample of this research, the writer tried out the test item. The test given to the students was considered not too difficult or not too easy. The purpose of the try out was to obtain validity



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and reliability of the test. According to Hughes (1989:22), the test is said to be valid if it measures accurately what is intended to measure. In this research, the writer used content validity. Furthermore, Hughes 1989:22) said that 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. 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.

Arikunto (2009:208) said that the easy or difficult level of each item can be determined by following formula

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

Where:

P : Index of difficulty

B : The number of correct answer

JS : The number of students taking test

Furthermore, Arikunto (2007:210) stated that the standard level of difficulty used is  $> 0.30$  and  $< 0.70$ . 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:

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**Table III. 6**  
**Students' ability to find prefixes**

Variable	Students' ability to find prefixes.				N
Item no.	3	4	-	-	30
Correct	12	20	-	-	
P	0.4	0.67	-	-	
Q	0.6	0.33	-	-	

Based on the table above, the proportion of correct answers for item number 3 obtained the proportion of correct 0.4, item number 4 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 Students' ability to find prefixes were accepted.

**Table III. 7**  
**Students' ability to find Suffixes**

Variable	Ability to find Suffixes				N
Item no.	1	2	-	-	30
Correct	19	16	-	-	
P	0.63	0.53			
Q	0.37	0.47			

Based on the table above, the proportion of correct answers for item number 1 obtained the proportion of correct 0.63, item number 2 obtained the proportion of correct 0.53. Based on level of difficulty "p" > 0.30 and "q" < 0.70, it was pointed out that the items for students' ability to find suffixes were accepted.

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**Table III. 8**  
**Students' ability to find Word Classes**

Variable	Students' ability to find Word Classes				N
Item no.	5	6	-	-	30
Correct	17	18	-	-	
P	0.57	0.6	-	-	
Q	0.43	0.4	-	-	

Based on the table above, the proportion of correct answers for item number 5 obtained the proportion of correct 0.57, item number 6 obtained the proportion of correct 0.6. Based on level of difficulty "p" > 0.30 and "q" < 0.70, it was pointed out that the items for students' ability to find word calsses were accepted.

**Table III. 9**  
**Students ability to find Word formation**

Variable	Students' ability to find Word Formation				N
Item no.	7	8	9	-	30
Correct	16	19	19	-	
P	0.53	0.63	0.63	-	
Q	0.47	0.37	0.37	-	

Based on the table above, the proportion of correct answers for item number 7 obtained the proportion of correct 0.53, item number 8 obtained the proportion of correct 0.63, item number 9 obtained the proportion of correct 0.63. Based on level of difficulty "p" > 0.30 and "q" < 0.70. It was pointed out that the items for students' ability to find Word Formation were accepted.



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**Table III. 10**  
**Students' ability to find Multi-word Unit**

Variable	Multi-Word Unit				N
Item no.	10	11	-	-	30
Correct	17	19	-	-	
P	0.6	0.63	-	-	
Q	0.4	0.37	-	-	

Based on the table above, the proportion of correct answers for item number 10 obtained the proportion of correct 0.6, item number 11 obtained the proportion of correct 0.63. Based on level of difficulty “p” > 0.30 and “q” < 0.70, it was pointed out that the items for students' ability to find Multi-Word Unit were accepted.

**Table III. 11**  
**Students' ability to Collocation**

Variable	Collocation				N
Item no.	12	-	-	-	30
Correct	16	-	-	-	
P	0.53	-	-	-	
Q	0.47	-	-	-	

Based on the table above, the proportion of correct answers for item number 12 obtained the proportion of correct 0.53. Based on level of difficulty “p” > 0.30 and “q” < 0.70, it was pointed out that the items for students' ability to find Collocation were accepted.

**Table III. 12**  
**Students' ability to Spell the Word Well**

Variable	Spell the word well				N
Item no.	13	14	15	-	30
Correct	15	16	12	-	
P	0.5	0.5	0.4	-	
Q	0.5	0.5	0.6	-	

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Based on the table above, the proportion of correct answers for item number 13 obtained the proportion of correct 0.5, item number 14 obtained the proportion of correct 0.5, item number 15 obtained the proportion of correct 0.4. Based on level of difficulty “p” > 0.30 and “q” < 0.70. It was pointed out that the items for students’ ability to Spell the Word Well were accepted.

**Table III. 13**  
**Students’ ability to find the Antonym of the Word**

Variable	Antonym of the Word				N
Item no.	19	20	-	-	30
Correct	16	18	-	-	
P	0.53	0.6	-	-	
Q	0.47	0.4	-	-	

Based on the table above, the proportion of correct answers for item number 19 obtained the proportion of correct 0.53, item number 20 obtained the proportion of correct 0.6. Based on level of difficulty “p” > 0.30 and “q” < 0.70, it was pointed out that the items for students’ ability to find Antonym were accepted.

**Table III. 14**  
**Students’ ability to find the Synonym of the Word**

Variable	Synonym of the word				N
Item no.	16	17	-	-	30
Correct	17	16	-	-	
P	0.57	0.53	-	-	
Q	0.43	0.47	-	-	

Based on the table above, the proportion of correct answers for item number 16 obtained the proportion of correct 0.57, item number 17 obtained the proportion of correct 0.53. Based on level of difficulty “p” > 0.30 and

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“q” < 0.70, it was pointed out that the items for students’ ability to find Synonym were accepted.

**Table III. 15**  
**Students’ ability to find Homonym of the Word**

Variable	Homonym of the word				N
Item no.	18	-	-	-	30
Correct	17	-	-	-	
P	0.57	-	-	-	
Q	0.43	-	-	-	

Based on the table above, the proportion of correct answers for item number 18 obtained the proportion of correct 0.57. Based on level of difficulty “p” > 0.30 and “q” < 0.70, it was pointed out that the items for students’ ability to find Homonym were accepted.

#### 4. Reliability of the Test

A test must first be reliable as measuring instrument. Brown (2003:20) defined that a realible test is a test which is consistet and dependable. It means that we can say the test is reliable if the test has similar result or consistency.

Reliability is a necessary characteristic of any good test. The Reliability coefficients for good identified kinds of text, structure text, and reading comprehension test were expected to exceed 0.0 and closed 1.00.

According Timbunan in Zelly (2011:53) the reliability of the test is considered as follows:

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- |    |                    |                                    |
|----|--------------------|------------------------------------|
| 1. | <b>0.0 – 0.20</b>  | <b>: Reliability is Low</b>        |
| 2. | <b>0.21 – 0.40</b> | <b>: Reliability is Sufficient</b> |
| 3. | <b>0.41 – 0.70</b> | <b>: Reliability is High</b>       |
| 4. | <b>0.71 – 1.0</b>  | <b>: Reliability is Very high</b>  |

Sugiyono (2015:359) stated that to obtain the reliability of the test, we can use kr-20 formula. So, the researcher used kr-20 formula as follows:

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

Where:

- k : number of items in the instrument  
 P : proportion of students who answered the item correctly  
 Q : proportion of students who answered the wrong item (1-pi)  
 $\sum PQ$  : the multiplication result between p and q  
 $St^2$  : total variance

Firstly, the writer calculated the total variance:

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

Where:

- n : number of respondents

$$\begin{aligned}
 x^2 &= \sum xt^2 - \frac{(\sum xt)^2}{n} \\
 &= 4077 - \frac{(335)^2}{30} \\
 &= 4077 - \frac{112225}{30} \\
 &= 4077 - 3740.8 \\
 &= 336.2
 \end{aligned}$$

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

$$st^2 = \frac{336.2}{30}$$

$$= 11.21$$

$$ri = \frac{k}{k-1} \left\{ \frac{S_{t^2} - \sum P_i q_i}{S_{t^2}} \right\}$$

$$ri = \frac{30}{(30-1)} \left\{ \frac{11.21 - 4.60}{11.21} \right\}$$

$$ri = \frac{30}{29} \left\{ \frac{6.61}{11.21} \right\}$$

$$ri = 1.03 \times 0.59$$

$$ri = 0.61$$

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

## F. Technique of Data Analysis

In analyzing the Students' Vocabulary Mastery, the writer used minimum passing grade of the Tenth Grade Students of Vocational High School Ibnu Taimiyah Pekanbaru. It was 75 for the students' Vocabulary through Reading Comic. It means that for those who get score > 75, they get the passing grade; while those get score < 75 they don't get the passing grade.



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## 1. Normality of the Data

Before analyzing the data by using t-test formula, the writer had to find out the normality test of the data. According to Priyatno (2012:33), the normality of the data test can be analyzed by using lilliefors and One Sample Kolmogorov Smirnov. In this research, the writer used liliefors through SPSS.16 version. Priyatno (2012:36) said that:

If the probability  $> 0.05$  Ho is accepted  
If the probability  $< 0.05$  Ho is rejected

Test of normality in pre-requisite test is used to find out whether the data of experimental class and control class have been collected from post-test score or from normal distribution or not.

The result computation of normality through SPSS.16 can be seen in the following table:

**Table III.16**  
**Test of Normality**

Tests of Normality			
Group	Kolmogorov-Smirnov <sup>a</sup>		
	Statistic	Df	Sig.
post-test experiment 1	.145	30	.106
and control-class 2	.151	30	.078

a. Lilliefors Significance Correction

According to Priyatno (2012:36), If the "Sig" column of either test is higher than 0.05, the data are normally distributed.

From the table above, the significance value of post-test experimental and control classes was 0.106 and 0.078 Because of  $sig > 0.05$  ( $0.106 > 0.05$ )

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and  $(0.078 > 0.05)$ . So, the initial data of experimental and control class were normally distributed.

## 2. Homogeneity of the Data

According to Siregar (2013:167), the purpose of homogeneity test is to know whether the object of the research has the same variance or not. The method used in this test was comparing the biggest variance with the smallest one.

Test of homogeneity was done to know whether the sample in the research came from population that had same variance or not. In this research, the homogeneity of the test was measured for post-test scores of experimental class and control class through SPSS.16.0 version. The result computation of homogeneity through SPSS.16.0 version can be seen in the following table.

**Table III.17**  
**Test of Homogeneity of Variances**

		Levene Statistic	df1	df2	Sig.
post-test experiment and control- class	Based on Mean	.549	1	58	.462
	Based on Median	.436	1	58	.512
	Based on Median and with adjusted df	.436	1	57.303	.512
	Based on trimmed mean	.523	1	58	.473

Based on the table test of homogeneity of variances, the value of significance was 0.473. This value showed that value of  $sig > \alpha = 0.473 >$

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0.05, it can be concluded that both classes were similar variants or homogenous.

### 3. Analysis Data

In analyzing the data, the writer used students' post-test score in experimental and control classes. This score was analyzed statistically. In this writer the researcher used these formulas:

#### a. Independent sample t-test

Hartono (2009: 208) said that 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 (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-test was used to know whether there is a significant difference between students' Vocabulary through reading comic by using and without using comic.

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 scores in both experimental and control classes. Statistical hypothesis are in the following:

1.  $H_0 = \text{sig. (2 tailed)} > 0.05$
2.  $H_a = \text{sig. (2 tailed)} < 0.05$

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1. Dilarang mengutip sebagian atau seluruh karya tulis ini tanpa mencantumkan dan menyebutkan sumber:
  - a. Pengutipan hanya untuk kepentingan pendidikan, penelitian, penulisan karya ilmiah, penyusunan laporan, penulisan kritik atau tinjauan suatu masalah.
  - b. Pengutipan tidak merugikan kepentingan yang wajar UIN Suska Riau.
2. Dilarang mengumumkan dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin UIN Suska Riau.

#### b. Effect Size

According to Pallant (2005:199), effect size is the strength of the difference between groups or the influence of independent variable. There are a number of different effect size statistics, the most commonly used is eta squared. Eta squared can range from 0 to 1 and represents the proportion of variance in the dependent variable that is explained by the independent (group) variable. The formula for eta squared is as follows

$$\eta^2 = \frac{t^2}{t^2 + (N_1 + N_2 - 2)}$$

Where :

- $\eta^2$  = eta squared
- $t^2$  = t o
- $N_1$  = Number of students