CHAPTER III

RESEARCH METHOD

In this chapter, the writer presented research type, research design, research population, research instrument, data collection procedures, research instruments try out, research instrument reliability, research instrument validity, and data analysis procedure.

A. Research Type of the study

This studyused quantitative approach. It used quantitative approach because quantitative was the data that from of number using statistic data. The type of this study was using quasi-experimental research. This study was comparing with two ways and the writer wants to measure the effect of hyponymy games in vocabulary size.

B. Research Design of the study

The design of this study was experimental design because the writer wanted to measure the effect of using hyponymy in teaching learning English vocabulary process. According to Arikunto, the Experimental study was a study which aimed to know there was or not the effect of the variable studied [37]. An experiment involved the comparison of the effects of a particular treatment with that of a different treatment or without treatment. A quasi-experimental design was similar randomized experimental design in they involved manipulation

[37]Suharsimi Arikonto, manajemen penelitianjakarta :PT Rineka Cipta,2002,p.272,

of an independent variable but different in that subjects were not randomly assigned to treatment group. The writer used the quasi-Experimental design in this study. Because this study compared with two ways, the writer want to measure the effectiveness of teaching vocabulary using those ways.

Although true experiments were preferred, quasi-experimental designs were considered worthwhile because they permitted writer to reachareasonable conclusion even though full control was not possible. The types of this study were Quasi-Experimental study by the nonrandomized control group :pretest-posttest design was one of the most widely used quasi-experimental design in educational research.[38]

The nonrandomized control group,the pretest-posttest design was one of the most widely used quasi-experimental designs in educational research. Moreover, the design is drawn in the following scheme below:

Table 3.1

Scheme of quasi-experimental design

Nonrandomized control group, pretest- posttest design

Subject	Pre- test	Treatment	Post- test
E	Y1	X	Y2
C	Y2	-	Y2

Where :

E : Experimental group

C : control group

[38]Alison Mackey and susan M.Gass , Second Language Research Methodology and design, London 2005,p.146

X : Treatment

Y1 : Pre-test

Y2 : Post-test

C. Population and Sample of the study

1. Population

According to arikunto,thepopulation is the whole oftheresearch subject, if someone wants to research all of the elements in research area his research is called population research on survey study.[39]

In this study, the writer tookthe students from the MA MUSLIMAT NU PALANGKA RAYA.The population of the study was all ofthe tenth-grade students of MA MUSLIMAT NU Palangka Raya.

Table 3.2

The Number of Population

No	GRADES	THE NUMBER OF THE STUDENTS
1	X-A	36
2	X-B	39
THE TOTAL NUMBER		75

2. Sample

The sample is a subject of individuals ofthecase from within a population.[40] The writer used two classes,they were X-A (Science)

[39]Ibid,Arikuntop107
[40]Ibid, Arikunto, p109

astheexperimental group and X-B (Social) asacontrol group. The number of students consisted of 75 students.

Table 3.3

The Number of samples

No	GRADES	THE NUMBER OF THE STUDENTS
1	X-A	36
2	X-B	39
THE TOTAL NUMBER		75

D. Instrument of the Study

The writer used the test as aninstrument. The test is a short examination of knowledge or ability, consisting of questions that must be answered.[41] The test used to know the students'scores about their vocabulary size. The main of the study was a test constructed in the multiple choice test (a, b , c, and d). The test consisted of 50 items. The items were about describing people, shaping, and adjective.

Related to the study, testgotfor measuring the students' ability in vocabulary size. The major data in the study were the data of the students' English score which taken pre-test and post-test. The test constructed in the multiple choicetests (a, b , c, and d). The test consisted of 40 items. The items were about describing people, shaping, and adjective.

[41]Ibid Norhayati,p24

E. Instrument Try Out of the Study

In order to prove the test suitableto the students who were the sample of this study, the writer conducted a tryouttest. Then the writer chose astudent in the different school and adifferent class to try out the test. The tryout test conducted to X-class of SMA MUHAMMADIYAH Palangka Raya. It was chosen, because in MA Muslimat NU Palangka Raya had two classes only that used as experiment class and control class for X-A and X-B. That is why the writer used the other schools for tryout, it wasSMA MUHAMMADIYAH Palangka Raya. The test consisted of 50 items elaborate as follows:

Here, the result of tryout:

Total Score	1854
Mean	47.53846
Higher	66
Lowers	28

From the result, the total score was 1854. The mean was 47.53846. The higher score was 66. The lowers score was 28.

If the result was valid, it meant that the test item as the instrumentation of this study is suitable given**.**The number of invalid was 19, 24, 30 37 and 39. Meanwhile, the number of valid was : (more detail in Appendices 6)

Table 3.4 specification of vocabulary try out test items.

No	Indicators	Total	Number
1	Synonym	6	1,2,3,4,5,6

2	Context	16	7,8,9,10,11,12,13,14,15,16,17,18,,20,21 22
3	Hyphonymy	28	23,25,26,27,28,29,31,32,33,34,35,36,38,40,41, 42,43,44,45,46,47,48,49,50

In this study, the writer used50 items. Multiple-choice that consisted of 50itemstocheck students' vocabulary size. If the result was valid, it meant that the test item as the instrumentation of this study wassuitable given. In order found out the description of how easy the individual student hadsizeofthe vocabulary, the final scores related to the following qualification :

Table 3.5

The Standard of valuation

Score	**Criteria**
70-100	**Mastery**
<69	**Fall**

From the result try out, found the instrument of validity, reliability and index difficulty.

F. Instrument Reliability

The good instrument in a study was not only the instrument valid but also reliable to measure what suppose measured. The analysis used several formulas that used to measure the reliability.[42]

[42]Sugiyono , Metode Penilitian Pendidikan Pendekatan Kuantitatif, Kualitatif dan R&D,p. 131.

To measure the reliability test, the writer used the Kuder Richardson (KR20) and the formula as follow :

The formula to be used :

$$r = \frac{k}{k-1} \times \left\{1 - \frac{\sum pq}{s2}\right\}$$

Notes

R : Reliability of test

K : Number of test items

P : Mean of the correct answer

Q : Mean of the wrong answer

S^2 : Variance

Statistics

tryout

N	Valid	39
	Missing	0
Variance		118.413

$$r = \frac{k}{k-1} \times \left\{1 - \frac{\sum pq}{s2}\right\}$$

$$r = \frac{50}{50-1} \times \left\{1 - \frac{594{,}641}{(118.413)2}\right\}$$

$$r = \frac{50}{49} \times \left\{1 - \frac{594{,}641}{14021.6386}\right\}$$

$$r = \frac{50}{49} \times \{1 - 0.4240881\}$$

$$r = 1.02040816 \times \{0.5759119\}$$

$$r = 0.5876652$$

From the result above, 0.5876652 indicate that the reliability test was fair reliability.

According to Suharto, the result of the calculation above connected to the following criteria :

0.800-1.000 = Very High Reliability

0.600-0,799 = High Reliability

0.400-0,599 = Fair Reliability

0.200-0.399 = Poor Reliability

0.000-0.199 = Very Poor Reliability[43]

G. Instrument Validity

The validity of a test was the extent to which it measured what supposed to measure and nothing else.[44] An instrumentconsidered being a good one if it meets some requirement. One of them was validity. Every test, whether it was short, informal classroom test or a public examination, was valid the constructor can make it. The test must aim provided a true measures external knowledge and other

[43]Suharto , Educational Research, Second Edition, p.88.
[44]Ibid, Norhayati p.34

skills at the same time, it was not a valid test. Validity of this study was distinguished into some kinds as follows[45] :

1. Construct validity

Construct validity was thetype of validity which assumes the existence of certain learning theories or construct underlying the acquisition of abilities and skills.[46] Each pre-test and post-testgave 40 items of students grade tenth of MA MUSLIMAT NU Palangka Raya.

2. Content Validity

The test item in this study measured the students 'English vocabulary size and based on the English teaching learning curriculum applied in MA MUSLIMAT NU Palangka Raya. In making the test, the writer tried to match each of item test with the curriculum that was used by MA MUSLIMAT NU Palangka Raya.

3. Face Validity

The test item in this study measured the students 'English vocabulary size and based on the English teaching learning about 40 items of vocabulary to class A dan B in MA Muslimat NU Palangka Raya. The test constructed in the multiple choicetests (a, b , c, and d). The test consisted of 40 items. The items were about describing people, shaping, and adjective.

[45]Ibid, Norhayati, p34
[46]Ibid, Norhayati, p35

To measure the validity of the instrument, the writer used the formulation of product moment by person as follows[47] :

$$r_{xy} = \frac{N\sum xy - (\sum x)(\sum y}{\sqrt{\{N\sum \ _{x^2} - (\sum x)2\}\,[N\sum y^2 - (\sum y)2\,]}}$$

Where :

r_{xy} : Index Correlation Number "r" Product Moment.

N : Number of Cases

∑XY : Multiplication Result between score X and score Y.

∑X : Total Value of score X.

∑Y : Total Value of score Y.

Intepretation :

$r_{xy} > r_t$ = Valid

$r_{xy} < r_t$ = Invalid

the criteria of interpretation the validity [48]:

0.800 – 1.000 = Very High Validity

0.600 – 0.799 = High Validity

0.400 – 0.599 = Fair Validity

0.200 – 0.399 = Poor Validity

0.00 –0.199 = Very Poor Validity

[47]Riduan ,Metode dan teknik menyusun tesis, Bandung : alfabeta,2004, p110
[48]Ibid, SuharsimiArikunto.p,274.

$$r_{xy} = \frac{N\sum xy - (\sum x)(\sum y}{\sqrt{\{N\sum \quad x^2} - (\sum x)2\}\,[N\sum y^2 - (\sum y)2\,]}$$

$$r_{xy} = \frac{39.\ 107840 - (1932)(2084)}{\sqrt{\{39.103472} - (1932)2\,[39.117968 - (2084)\quad ^2}$$

$$r_{xy} = \frac{4205760 - 4026288}{\sqrt{\{4035408 - 3732624}}$$

$$r_{xy} = \frac{179472}{\sqrt{\{302784 - 4343056}}$$

$$r_{xy} = \frac{179472}{\sqrt{1315007867904}}$$

$$r_{xy} = \frac{179472}{\sqrt{1146737.92}}$$

r_{xy} =0,45650655

In this study, using manual calculation the result of tryout rxy was 0.45650655. r observed was 0.45650655 than r table 5% the value was 0.316 and 1% was 0.408. so, the interpretation was r_{xy}> r_t = Valid. 0.316 <0.45650655> 0.408= Valid. The criteria of interpretation the validity [49]: 0.45650655 was fair Validity.

Using SPSS program, the result of number one was valid. The result using SPSS calculation, the result of tryout rxyfor number one was 0.549r observed was 0.549than r table 5% the value was 0.316 and 1% was 0.408. So, the interpretation was r_{xy}> r_t = Valid. 0.316 <0.549>0.408= Valid. The criteria of interpretation the validity [50]: 0.549was Fair Validity. Example, the result of tryout rxyfor number threewas0.541 observed was 0.541than r table 5% the value was 0.316

[49]Ibid, Suharsimi Arikunto.p,274.
[50]Ibid,Suharsimi Arikunto.p275

and 1% was 0.408. So, the interpretation was r_{xy}> r_t = Valid. 0.316 < 0.541> 0.408= Valid. The criteria of interpretation the validity 0.541was Fair Validity. To conclude, the result was valid. (see Appendix 6 more details)

H. Data Collection Procedure

In this study, the writerusedsome procedures tocollect the data. The procedures consists some steps as follows :

1. Gave the try out test to the students of tenth grade at SMA Muhammadiyah. The test was conducted by multiple choicetests (a, b, c, and d). The test consisted of 50 items. The items were about describing people, shaping, and adjective.
2. The writer told the students how they must do with the test of tryout.The tryout constructed in the multiple choicetests (a, b, c, and d). The test consisted of 50 items. The items were about describing people, shaping, and adjective.
3. The writer gave pre-test on Monday, 12 September 2016 at 08.00- 09-30 WIB in class control group and on Monday, 12 September 2016 at 09.15- 10-35 WIB in class experiment group.The pretest constructed in the multiple choicetests (a, b , c, and d). The test consisted of 40 items. The items were about describing people, shaping, and adjective. The items of pretest was the result of valid in tryout.
4. The writer taught the experiment and control classes where experiment students taught by using hyponymy game and the control students taught by using direct method. In the experiment class, the writer taught using

hyphonymy games about three times. Meanwhile in control class, the writer taught using convensional method (direct method) in three times.

5. The writer gave post-test on Monday, 04 October 2016 at 08.00- 09-30 WIBin control class and Monday, 04 October 2016 at 09.15- 10-35 WIB in experiment class. The postest constructed in the multiple choicetests (a, b , c, and d). The test consisted of 40 items. The items were about describing people, shaping, and adjective. The items of postest was the random by the result of pretest.
6. The writer concluded the activity of the study whether the use of hyponymy game in teaching vocabulary. There was effect or not to students.

I. Data Analysis Procedures

Data analysis was the last step in the procedure of experiment, in this case, processing the data. Data processing was the first step known the result of both the experiment class and control class and also their difference.

Found out the differences between students' score in using hyponymy games in learning English vocabulary the writer used the formula that is as follow:

1. The writer gave thetest to the tenth-gradestudents at MA MUSLIMAT NU Palangka Raya.The writer gave40items of vocabulary to class A dan B in MA Muslimat NU Palangka Raya. The test constructed in the multiple choicetests(a, b, c, and d). The test consisted of 40 items. The items were about describing people, shaping, and adjective.

2. The writer collected the data of the student's test results.To collect the data, the writer corrected40items of vocabulary to class A dan B in MA Muslimat NU Palangka Raya. The test constructed in the multiple choicetests (a, b , c, and d). The test consisted of 50 items. The items were about describing people, shaping, and adjective.
3. The writer gave score the student's test results by used the scoring system.
4. The writer gave score for each item by using formula :

$$\frac{score\ acquisition}{total\ score} \times 100$$

5. The writer discussed and concluded the result of data analysis. To discuss the data, the writer measured mean, median, and modus. To compare between control and experiment class, the writer used t-test formula by manual calculation and SPSS 16 program.