CHAPTER III

RESEARCH METHOD

This chapter discusses research design, time and place of the study, population and sample, research instrument, research instrument try out, research instrument validity, research instrument reliability, data collection procedure and data analysis procedures.

A.   Research design

The design of this study was experimental design. Experimental design is a plan for an experiment that specifies what independent variables will be applied, the number of levels of each, how subjects are assigned to groups, and the dependent variable.[1] The writer used the experimental design because the writer wanted to measure the effectiveness of using English song on students' vocabulary score.

The type of this study was quasi-experimental study. Quasi-Experimental design are similar to randomized experimental designs in that they involved manipulation of an independent variable but differ in those subjects in that they involve manipulation of an independent variable but differ in that subjects are not randomly assigned to treatment groups. [2] The writer used quasi experiment because it is not random assignment of subjects to experiment and control group.

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[1] Donal Ary, *Introduction to Research in Education (Eight edition)*, United State: Wadsworth (engange learning), 2010,p. 641.
[2] Ibid, p. 648.

B.   Time and Place

The place of this study was SMP Islam Nurul Ihsan Palangka Raya. It located at Murjani Street. In this study, the writer conducted study two months to collect the data.

C.   Population and sample

1.   Population of study

A population is defined as all members of any well-defined class of people, events, or objects.[3] The population of this study was seventh grade students at SMP Islam Nurul Ihsan Palangka Raya, there were five classes and the number of students are:

Table 3.1

Population

NO	CLASSES	NUMBER OF STUDENT
1	VII-1	32
2	VII-2	32
3	VII-3	27
4	VII-4	30
	Total	121

[3] Ibid, p.148

2.   **Sample of the study**

A sample is a portion of a population.[4] The writer took two classes to be the sample. The first class was experiment group uses English song media. The second class was control group uses without English song media. The writer took two classes: VII-2 and VII-4 as the sample of the study. The randomized technique was used in the study.

Table 3.2
Number of Sample

NO	Group	Class of student	Number of student
1	E	VII Group B	30
2	C	VII Group A	32
Total			62

E   : Experiment Group

C   : Control

Table 3.3

Design of pre-test and post-test

Group	Pre-test	Treatment	Post-test
Experiment Group	T I	X	Y 2
Control Group	T 1	-	Y 2

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[4] Ibid, p.148

D.   Research Instruments

To get the data, the writer used this media in this study. Here, the writer used test.

a.   Test

A test is a set of stimuli presented to an individual in order to elicit response on the basis of which a numerical score can be assigned.[5] According to H Brown Douglas, test is method of measuring a person's ability or knowledge in a given domain.[6] To get the data, the writer did the test; it consisted of Pre Test and Post Test. To get the data, the writer did the test; it consists of pre test and post test. The function of pre test was to knew how many students' vocabulary before they use English song media. And the function of post test is to know how many students' vocabulary after they uses English song as media.

The writer made test based on the material and be appropriated with syllabus that used by the school. In this study, the writer used multiple-choice to check the students' vocabulary mastery. As Thurnburry suggestion that amultiple choice tests are popular way to testing in that they are easy to score and they are easy to design.[7]

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[5] *Ibid*, p. 201.

[6] H Brown Douglas, *Principle of Language Learning and Teaching 4th Edition*, New York: Longman, 2001, p. 384.

[7] Scoot Thurnburry, *How to Teach Vocabulary*, Oxfordhsire: Pearson Education Limited, 2002, p. 132-136.

The writer chose multiple choice because it is one of the most common formats in proffesionally developed language tests. There are four advantages associated multiple choice, such as:[8]

1) They are very reliable because of written well, there is only one correct answer.

2) They are quick and easy to mark and there by deemed very practical from a teacher's perspective.

3) Versatility, as multiple choice question format can be used to assess knowledge at various levels from beginning to advanced.

The test was constructed in the form of multiple choices which consists of 56 items test, because if there are an invalid items, the writer only select a valid items, so the writer not repeat the try out.

In connection with the score of students' test, the writer used scoring rubric as seen in table 3.4 as follows:

Table 3.4
Scoring Rubric for Students' Vocabulary Score[9]

No	Classification	Score
1	Very Good	90-100
2	Good	70-89
3	Fair	50-69
4	Poor	30-49

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[8] Christine C, *Assessing Vocabulary in The Language Classroom,* Malaysia English Language Teaching Association: Malaysia, p. 116-117.
[9] Puskur, 2006, p.33.

5	Very Poor	10-29

The test constructed in multiple choice form which consisted of 100 items. The test item can be seen in the following table 3.5:

Table 3.5
Specification of Test Item

Vocabulary	Part of Speech	Number of Question
Content Words	Noun Phrase	1, 4, 5, 7, 10, 11, 12, 13, 14, 15, 16, 17, 18, 21, 24, 26, 30, 33, 34, 39.
	Verb Phrase	2, 3, 6, 8, 9, 19, 20, 22, 23, 25, 27, 28, 29, 31, 32, 35, 36, 37, 38, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56.

E.   Research Instruments Try Out

The writer gave test of try out to seventh grade students at SMP Islam Nurul Ihsan Palangka Raya. The writer took one class: VII-4, the number of student is 34 students. These were the procedures that in carrying out this try out as follows:

a.   The writer prepared the instrument try out.

b.   The writer asked the students to do the test of try out.

c.   The writer collected the student's answer.

d.   The writer calculated the result of try out.

e.   The writer analyzed the result of try out to know valid of test try out.

f.   If the results are valid, it means that the test items as the instrument of this study is suitable to give.

F.   Research Instruments Validity

Validity of a test is the extent to which the test measures what is intended to measure.[10] There are two types of validity:

1.   Content Validity

This kind of validity depends on a careful analysis of the language being tested and of the particular course objectives. The test should be so constructed as to contain a representative sample of the course, the relationship between the test items and the course objectives always being apparent.[11] In making the test, the writer tries to match each of the test items with the syllabus that used by SMP Islam Nurul Ihsan Palangka Raya. The writer makes the test content (question) is related with material will teach to the students.

2.   Construct Validity

If a test has construct validity, it is capable of measuring certain specific characteristics in accordance with a theory of language behavior and learning.[12] Type of test is vocabulary test, and the form of test is multiple choices. In this study, the test is written test to measure the students' vocabulary knowledge.

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[10]Norman E. Gronlund, *Measurement And Evaluation In Teaching (Fifth Edition)*, New York: Macmilan Publishing Company, 1985, p. 11.
[11]J. B. Heaton, *Writing English Language Tests*, Longman, 1975, p. 154.
[12]*Ibid*, p. 154.

To measure the validity of the instrument, the writer uses the formulation of product moment by Pearson follows. The criteria of interpretation of the validity:[13]

$$r_{xy} = \frac{N(\sum XY) - (\sum X)(\sum Y)}{\sqrt{\{N.\sum X^2 - (\sum X)^2\}\{N.\sum Y^2 - (\sum Y)^2\}}}$$

Where:

r_{xy} : Numeral of index correlation 'r' product moment

N : Total of sample

$\sum XY$: Amount of the product between X score and Y score

$\sum X$: Amount of the x score

$\sum Y$: Amount of the y score

Furthermore, it was calculated using test t calculation as follow:

$$t\,observe = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$$

Where:

t : The value of t observed

r : The coefficient of correlation of the result of r observed

n : Number of students

The distribution of t table at alpha 5% and degree of freedom (n-2) with the measurement of validity using these criteria:

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[13]Riduan, *Metodedan Teknik Menyusun Proposal Peneletian*, Bandung: Alfaberta, 2010. p. 75.

t observed > t table = valid

t observed < t table = invalid

To know the validity level of the instrument, the result of the test will interprets to the criteria below:[14]

0,80 - 1000   = very high validity

0,60 - 0,799   = high validity

0,40 - 0,599   = fair validity

0,20 - 0,399   = poor validity

0,00 - 0,199   = very poor validity

3.   Index difficulty

The index of difficulty (or the facility value) of an item simply shows how easy or difficulty the particular item proved in the test. The index of difficulty (F.V) is generally expressed as the fraction (or percentage) of the students who answered the item correctly. It is calculated by using the formula:

$$F.V = \frac{R}{N}$$

R is represents the number of correct answer and N is the number of students taking the test.[15] The result of the test was interpreted to the criteria below:[16]

0,00 – 0,30 = Difficult

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[14]*Ibid*, p. 76.

[15] J. B. Heaton, *Writing English Language Test,* Longman, 1975, p. 172.

[16]Suharsimi Arikunto, *Prosedur Penelitian Suatu Pendektan Praktek*, Jakarta: Rineka Cipta, 1999, p. 210.

0,31 – 0,70 = Fair

0,71 – 1,00 = Easy

The result of index difficulty measurement of the try out:

NO	CRITERIA	ITEMS
1	Difficult Items	2, 4, 5, 8, 20, 22, 23, 25, 27, 29, 35, 36, 38, 40, 41, 42, 47, 51, 52, 53, 55, 56, 57, 58, 61, 63, 65, 68, 69, 70, 73, 74, 76, 78, 82, 86, 87, 90, and 91
2	Easy Items	1, 3, 9, 10, 11, 12, 13, 14, and 54
3	Fair Items	6, 7, 15, 16, 17, 18, 19, 21, 24, 26, 28, 30, 31, 32, 33, 34, 37, 39, 43, 44, 45, 46, 48, 49, 50, 59, 60, 62, 64, 66, 67, 71, 72, 75, 77, 80, 81, 83, 84, 85, 88, and 89

G. Research Instruments Reliability

Reliability also means the consistency with which a test measures the same thing all the time. Reliability of a test refers to its consistency with which it yields the same rank for an individual taking the test several times.[17] The reliability of the whole test can be estimated by using the formula:

$$r_{11} = \left(\frac{k}{k-1}\right)\left(\frac{s^2 - \sum pq}{s^2}\right)$$

Where:

k   : Number of items

s   : Standard Deviation

$\sum pq$: Result of square between p and q

The qualification of reliability as follows:[18]

0,800 - 1,000 = very high validity

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[17] Norman E. Gronlund, *Measurement And Evaluation In Teaching (Fifth Edition)*, New York: Macmilan Publishing Company, 1985, p. 14.
[18] Riduwan, *Metode dan Teknik Menyusun Tesis*, Bandung: Alfaberta, 2010.P. 110

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

H. Data Collection Procedure

To get the data, the writer used some ways in this study. Those ways were:

1. The writer chose the place of the study.

2. The writer gave try out for class VII-3on Saturday, 7th November 2015 at 08.05 am. Try out held at SMP Islam Nurul Ihsan Palangka Raya. It consist of 100 items from 7 songs.

3. The writer determined two groups, the first group was experiment group using English song media and the second group was control group without using English song media.

4. The writer gave pre test to both classes are class VII-2 and VII-4 (experiment group and control group). Pre test for VII-2 occured on Thursday 12nd, November 2015. Meanwhile, pre test for VII-4 occured on Saturday 21st, November 2015.

5. The writer checked the result of pre test.

6. The writer gave treatment (teaching) to the experiment group using English song media only three times, because based on the syllabus the allocation of time only 4 x 40 times for teaching. and the control group using without English song media. The research schedule described in appendix 1.

7. The writer gave post test to both classes. It occured on Thursday 19th, November 2015 for control group and on Saturday 28th, November 2015 for experimental group.

8. The writer checked the result of post test.

9. The writer gave score to students' answer (pre test and post test).

I. Data Analaysis Procedure

To analyze the data, the writer used some procedures in this study:

1. The writer gave test to the students of the seventh grade students at SMP Islam Nurul Ihsan Palangka Raya.

2. The writer collected the data of the students' test result.

3. The writer gave score the students' test result by using the formula:

$$Score = \frac{B}{N} \times 100\%$$

Where:

B : Frequency of the correct answer

N : Number of test items

4. The writer tabulated the data into the distribution of frequency of score table, then looking for the mean, median and modus of students' score, standard deviation, and standard error of experiment group and control group.

a. Mean

$$Mx = \frac{\Sigma fx}{N}$$

Where:

Mx : Mean

Fx : Total result product between each score with frequency

N : Number of case

b. Median

$$Mdn = 1 + \frac{\frac{1}{2}N - fkb}{fi} \times i$$

Where:

Mdn : Median

N   : Number of case

Fkb   : Cumulative frequency located in under interval contain median

Fi   : Authentic frequency (frequency of score contain median)

i   : Interval class

c. Modus

$$Mo = 1 + \frac{fa}{fa + fb} \times i$$

Where:

Mo : Modus

Fa : frequencylocated in above interval contain modus

Fb : frequencylocated in under interval contain modus

i   : Interval class[19]

d. Standard Deviation

$$SD = \sqrt{\frac{\sum fx^2}{N}}$$

Where:

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[19] Hartono, *Statistik Untuk Penelitian*, Yogyakarta: Pustaka Belajar, 2011, p. 33.

SD : StandardDeviation

i : Interval

N : Number of students

e. Standard Error

$$Sem = \frac{sd}{\sqrt{n-1}}$$

Where:

Sem : Standard Error

Sd : StandardDeviation

N   : Number of students[20]

5. The writer calculated normality and homogeneity.

a. Normality

It isused to know the normality of the data that is going to be analyzed whether both groups have normal distribution or not.

Chi square is used here:[21]

$$\chi^2 = \sum \left[\frac{(f_o - f_h)^2}{f_h} \right]$$

Where:

χ^2 = Chi square

f_o = frequency from observation

f_h = expected frequency

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[20]*Ibid*, p. 60.
[21] Sudjana, *MetodeStatistika*, Bandung: Tarsito, 1996, p.273.

Calculation result of χ^2 is compared with x table by 5% degree of significance. If χ^2 is lower than x table so the distribution list is normal.

b. Homogenity

It is used to know whether experimental group and control group, that are decided, come from population that has relatively same variantor not. The formula is:[22]

$$F = \frac{\text{Bigger Variant}}{\text{Smaller Variant}}$$

Where:

F : Frequence

The hypotheses in homogeneity:

$F_{value} \leq F_{table}$, means both of variants are homogeneity.

$F_{value} > F_{table}$, both of variants are homogeneity.

If calculation result of Fi slower than F, table by 5% degree of significance so H$_o$ is accepted, it means both groups have same variant.

6. The writer calculated the data by using t-test to test the hypothesis of the study. To examine the hypothesis, the writer uses t-test formula as follows:

$$to = \frac{M1 - M2}{SEm1 - m2}$$

Where:

M1-M2   : The difference of two mean.

SEm1-m2 : The standard error of difference between two mean.

To know the hypothesis is accepted or rejected using the criterion:

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[22] Ibid., p. 280.

If t-test $\geq$ t$_{table}$, it means Ha is accepted and Ho is rejected.

If t-test $\leq$ t$_{table}$, it means Ha isrejected and Hois accepted.[23]

7. The writer interpreted the result of t-test. The writer account degree of freedom (df) with the formula as follows:

$$df = (N1 + N2 - 2)$$

Where:

df : Degree of freedom

N1 : Number of subject group 1

N2 : Number of subject group 2

2   : Number of variable[24]

8. The writer discussed and concluded the result of data analysis.

To analyze the data has been collected; the writer uses some procedures in this study:

9. The writer collected score of test (pre test and post test).

10. The writer arranged it into the table.

11. The writer calculated the mean, median, and modus score with the formula.

12. The writer analyzed the data have been collected.

13. The writer concluded the data.

[23]Anas Sugiono, *Pengantar Statistik Pendidikan*, Jakarta: Rajawali Press, 1978, p. 372.
[24]Ibid, p. 284.