

CHAPTER III

RESEARCH METHODOLOGY

In this part, the writer will describe about research method that is used in conducting the research. It is purpose to answer the problem of the study. This chapter consists of research design, population and sample, instruments of the study, validity, reliability, data collection procedures, and data analysis.

A. Research Design

In the study, the writer investigated the role of the students' learning motivation toward the students' reading comprehension. Thus, it applied correlational design to understand relationships among learning motivation and the students' reading comprehension where it was traditionally classified as relationship study or prediction study.¹⁰³ Correlational approach was nonexperimental research which employs data derived from preexisting variables with the purpose to assess or understand the relationships among two or more variables in a single group.¹⁰⁴ It also produced indexes or a correlation coefficient that show the direction and the strength of relationships among variables, taking into account the entire range of these variables.¹⁰⁵ Therefore, the writer used correlational approach in the study to measure the strength of relationship between learning motivation and reading comprehension of the freshman students of English Study Program of STAIN Palangkaraya.

¹⁰³ Donna M. Johnson, *Approaches to Research*, p. 51.

¹⁰⁴ Donald Ary and Lucy Cheser Jacobs, Chris Sorensen, and Asghar Razavieh, *Introduction to Research*, p. 349.

¹⁰⁵ *Ibid.*, p. 350.

The writer explored the students learning motivation based on Gardner's theory of motivation in the social dimension, integrative and instrumental motivation which refers to the students' goal of learning English. Then, the writer explored the students' reading comprehension through some texts which had to answer in multiple choices. Furthermore, the result of exploring the students' learning motivation and the students' reading comprehension would be presented in numerical result which based the statement that correlational approach was by nature quantitative.¹⁰⁶ So, it used quantitative as the research approach.

B. Population and Sample

The population of the study was all of the freshman students of English Study Program of STAIN Palangka Raya in academic years of 2012/2013 who lived in Islamic Boarding College 'Ma'had Al Jami'ah' of STAIN Palangka Raya. The number of population is about 101 students. Then, the sample of the study would be taken from all of the population because the writer considered that all of students had similar in learning of English for at least six years and they had to passed the national exam in 12th grade as a requirement of graduation which need enough preparation. Moreover, the taking of population as the sample of the study was to decrease the opportunity of error in generalization. It bases on the statement that the more the number of samples close to the population, the smaller the chance of generalization error and conversely the smaller the number of

¹⁰⁶ Donna M. Johnson, *Approaches to Research in Second Language Learning*, New York: Longman, 1992, p. 53.

samples away from the population, the more the generalization error.¹⁰⁷ But, in process of study, the writer just took 94 students as participants of study because some of students were hindered to follow the test.

C. Research Instruments

1. Questionnaire

Questionnaire is list of questions which is given to respondent of study to give their response refer to the questions.¹⁰⁸ The Likert scale format of Gardner's Motivation Test Battery (AMTB) and Clement et al of the integrative and instrumental of motivation which has adapted and used by Zahra Vaezi in his research entitled 'Language Learning Motivation among Iranian Undergraduate Students' will be used to measure the students' motivation in English learning. The scale ranges from 'Strongly Disagree' to 'Strongly Agree' and they are coded as (Strongly Disagree=1, Disagree=2, Neutral=3, Agree=4, Strongly Agree=5).¹⁰⁹ Higher score indicated higher motivation and lower score indicated lower motivation of the students which based on the criteria of score interpretation below¹¹⁰:

| Score | Interpretation |
|----------|----------------|
| 0% - 20% | Very Low |

¹⁰⁷ Sugiyono, *Metode Penelitian Pendidikan: Pendekatan Kuantitatif, Kualitatif, dan R&D*, Bandung: Alfabeta, 2007, p. 126.

¹⁰⁸ Riduwan, *Skala Pengukuran Variabel- Variabel Penelitian*, Bandung: Alfabeta, 2011 (eight edition), p. 25.

¹⁰⁹ Zahra Vaezi, "Language Learning Motivation, p. 55.

¹¹⁰ Riduwan, *Metode dan Teknik*, p. 88.

| | |
|------------|-------------|
| 20% - 40% | Low |
| 40% - 60% | Moderately |
| 60% - 80% | Strong |
| 80% - 100% | Very Strong |

To clarify the instrument, the writer presented the items of integrative motivation and the items of instrumental motivation in the tables below, they were:

Table 1: The Items of Integrative Motivation¹¹¹

| No. | Items: I study English ... |
|-----|---|
| 1. | To be more at ease with other people who speak English |
| 2. | To meet and converse with more and varied people |
| 3. | To better understand and appreciate English art and literature |
| 4. | To participate more freely in the activities of other cultural groups |
| 5. | To know the life of the English-speaking nations |
| 6. | To understand English pop music |
| 7. | The more I get to know native English speakers, the more I like them |
| 8. | To know various cultures and peoples |
| 9. | To keep in touch with foreign friends and acquaintances |
| 10. | To know more about native English speakers |

Table 2: The Items of Instrumental Motivation¹¹²

| No. | Items: I study English ... |
|-----|----------------------------|
|-----|----------------------------|

¹¹¹ Zahra Vaezi, "Language Learning Motivation, p. 56.

¹¹² *Ibid.*

| | |
|-----|---|
| 1. | I'll need it for my future career |
| 2. | It will make me a more knowledgeable person |
| 3. | It will someday be useful in getting a good job |
| 4. | Other people will respect me more if I know English |
| 5. | I will be able to search for information and materials in English on the internet |
| 6. | An educated person is suppose to be able to speak English |
| 7. | I can understand English-speaking films, videos, TV, or radio |
| 8. | I can read English book |
| 9. | Language learning often makes me happy |
| 10. | Without it one cannot be successful in any field |

Then, the writer presented the instrument in the one table as the survey questionnaire of English learning motivation scale in Indonesian language version. The used of Indonesian language in the survey questionnaire was based on the function of likert scale which to measure attitude, opinion, and perspective of an individual or a group about a certain case.¹¹³ So, it needed the student's understanding of the statements of the survey questionnaire to answer appropriately the question. Therefore, the used of Indonesian language would helped the students to understand about the questions.

¹¹³ Riduwan, *Metode dan Teknik*, p. 86.

2. Test

Test was question or examination to measure one's knowledge, intelligence, ability, or attitude.¹¹⁴ In this study, the writer would measure the students' achievement of reading skill. Then, the multiple-choice reading comprehension test would be used to measure the students' comprehension of the text. The multiple-choice reading comprehension tests were used because it was able to evaluate the students' reading comprehension efficiently.¹¹⁵ In the study, the students would answer 50 multiple-choice reading comprehension test items which the material was reading question of the final national exam.¹¹⁶ Then, it served five answer choices for each question which were signed by (A), (B), (C), (D) and (E). The serving five of the answer choices were to decrease the percentage of possibility answering the question truly merely through guessing process where the more value of choice the smaller possibility the answer of guessing process was true.¹¹⁷ In other hand, the multiple choice had some surplus as a test, it had smaller percentage to answer truly through guessing process than The True-False test, the scope of test material was wider than other form of test, the way to answer was simple, the way to check the answer was also simple so it

¹¹⁴ Riduwan, *Skala Pengukuran Variabel*, p. 30.

¹¹⁵ Hui-Ju Wu, "Anxiety and Reading Comprehension Performance in English as a Foreign Language," *ASIAN EFL Journal*, Vol. 13, No. 2, June 2011, p. 284.

¹¹⁶ <http://www.khazanahpustaka.co.cc>, (online Mei 8, 2012).

¹¹⁷ M. Soenardi Djiwandono, *Tes Bahasa: Pegangan Bagi Pengajar Bahasa*, Indonesia: PT Macanan Jaya Cemerlang, 2008, p. 42.

was proper to use as a test in big population of the study, and the analysis of each test item or the whole of test was easier.¹¹⁸

D. Validity

Validity was defined as the extent to which scores on a test enable one to make meaningful and appropriate interpretations.¹¹⁹ In validity of data, a measure was also called valid if it measures what it was intended to measure.¹²⁰ Every test of a research should be as valid as the constructor can make it, whether the test was a short, informal classroom test or a public examination.¹²¹ Then, in this study, validity was classified into three types of validation, content validity, face validity, and construct validity which they exist to find internal validity of instrument. An instrument was called having internal validity if its criteria theoretically reflected what would be measured.¹²²

1. Content Validity

Content validity referred to the representativeness of a measurement regarding the phenomenon about which the writer want to inform.¹²³ An instrument which formed in a test to measure achievement should had content

¹¹⁸ *Ibid.*

¹¹⁹ Donald Ary and Lucy Cheser Jacobs, Chris Sorensen, and Asghar Razavieh, *Introduction to Research*, p. 224.

¹²⁰ Donna M. Johnson, *Approaches to Research*, p. 53.

¹²¹ J. B. Heaton, *Language Testing*, England: Longman, 1987, p. 153.

¹²² Sugiyono, *Metode Penelitian Pendidikan*, p. 174.

¹²³ Alison Mackey and Susan M. Gass, *Second Language Research: Methodology and Design*, London: Lawrence Erlbaum Associates, Inc, 2005, p. 107.

validity.¹²⁴ Then, in this study the writer measured the students' reading comprehension, thus the writer used the multiple-choice reading comprehension test which the material include some of texts that can measure their comprehension of reading English texts.

2. Face Validity

Face validity was closely related to the notion of content validity and referred to the familiarity of an instrument and how easy it used to convince others that there was content validity to it.¹²⁵ In this study, to measure the students' reading comprehension, the writer used the multiple-choice reading comprehension test which the material was taken from reading question of the final national exam. Therefore, the students have studied the material before they are administering to college and they have done the final national exam as requirement of graduation.

3. Construct Validity

Construct validity referred to the degree to which the research adequately captures the construct of interest.¹²⁶ An instrument whether it was formed in a test or formed in a non test, it should contain construct validity. In this study, the writer measured the students' learning motivation for the purpose of correlating it with reading comprehension in the first semester students at college. To measure the students' reading comprehension, the writer used the multiple choice items of

¹²⁴ Sugiyono, *Metode Penelitian Pendidikan*, p. 176.

¹²⁵ Alison Mackey and Susan M. Gass, *Second Language Research*.

¹²⁶ *Ibid.*, p. 108.

National Final Exam which had been put in a test. Therefore, the multiple choice items were valid because the result of the items has been used as consideration to decide the student graduation.¹²⁷ The validity of the National Final Exam items was also supported by Prof Mungin Eddy Wibowo as a member of National Education Standards (Badan Standar Nasional Pendidikan) who said that the items of National Exam had been prepared according to standardization and refer to the principle as valid, credible, and objective.¹²⁸ Then, to measure learning motivation, the writer used the Likert scale format of Gardner's Motivation Test Battery (AMTB) and Clement et al of the integrative and instrumental of motivation which had adapted and used by Zahra Vaezi in his research entitled 'Language Learning Motivation among Iranian Undergraduate Students'. So, it had been put to a test of study. The writer adapted it based on the fact of field, where the subject of the study was the Indonesian students. Therefore, it served in Indonesian language. The purpose of adaptation was to find the external validity of instrument where an instrument considers having external validity if the criteria of instrument arranged based on the existing empirical fact.¹²⁹ Then, to measure the validity of the instrument, the writer used the formulation of Product Moment by Pearson as follows¹³⁰:

¹²⁷ M. Soenardi Djiwandono, *Tes Bahasa: Pegangan*, p. 166.

¹²⁸ Institut Manajemen Telkom. *BSNP: Dibatasi Sesuai Standar Soal UN*. <http://www.intelkom.ac.id/id/component/content/article/4222-20apriledu2.html> (online September 24, 2012).

¹²⁹ Sugiyono, *Metode Penelitian Pendidikan*, p. 174.

¹³⁰ Anas Sudijono, *Pengantar Statistik Pendidikan*, Jakarta: PT Raja Grafindo Persada, 2005, p. 206.

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

Where :

r_{xy} = The coefficient of correlation

$\sum X$ = Total Value of Score X

$\sum Y$ = Total Value of Score Y

$\sum XY$ = Multiplication Result Between Score X and Score Y

N = Number of students

After that, the data was calculated by using Test-t calculation with the formulation below¹³¹:

$$t_{observed} = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$$

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} for $\alpha = 0,05$ and the degree of freedom (n-2) with the measurement of validity using these criteria¹³²:

| |
|--|
| $t_{observed} > t_{table} = \text{Valid}$ $t_{observed} < t_{table} = \text{Invalid}$ |
|--|

¹³¹ Riduwan, *Metode dan Teknik Menyusun Tesis*, Bandung: Alfabeta, 2010 (eight edition), p. 110.

¹³² *Ibid.*

To know the validity level of the instrument, the result of the test was interpreted to the criteria of correlation index (r) as follows¹³³:

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

0,000 – 0,199 = Very Poor Validity (invalid)

From measurement of validity, it was found 20 valid items and 0 invalid items. While, to measure the validity of the test of multiple choices, the writer counted the correlation coefficient of items with formula:¹³⁴

$$r_{pbis} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$$

Where:

r_{pbis} = The coefficient of biserial correlation

M_p = Average of students' correct answers value

M_t = Total value of students' score

SD_t = Total of standard deviation

p = Score proportion of students' correct answer value

q = Score proportion of students' incorrect answer value (1 – p)

From measurement of items validity, it was found that some items are not valid, it was in contradiction with Prof Mungin Eddy Wibowo's declaration as a

¹³³ *Ibid.*

¹³⁴ Anas Sudijono, *Pengantar Evaluasi Pendidikan*, Jakarta: PT Raja Grafindo Persada, 2007, p. 189.

member of National Education Standards (Badan Standar Nasional pendidikan) who said that the items of National Exam had been prepared according to standardization and refer to the principle as valid, credible, and objective.

E. Reliability

The reliability of a measure referred to the accuracy or consistency of measurement.¹³⁵ To find the reliability of data, the writer measured the reliability of the whole test using the formula of Alpha method, which can be applied to examine the reliability of questionnaire as tool in collecting the data. The formula is¹³⁶:

$$r_{11} = \left[\frac{k}{k-1} \right] \left[1 - \frac{\sum S_i}{S_t} \right]$$

Where:

r_{11} = value of reliability

$\sum S_i$ = variance of scores on each item

S_t = total of variance

k = item value

The steps in determining the reliability of the test were:

1. Calculated the score variance for each item with the following formula¹³⁷:

$$S_i = \frac{\sum X_i^2 - \frac{(\sum X_i)^2}{N}}{N}$$

Where:

¹³⁵ Donna M. Johnson, *Approaches to Research*, p. 54.

¹³⁶ Riduwan, *Metode dan Teknik*, p. 125.

¹³⁷ *Ibid.*

S_i = score variance for each item

$\sum X_i^2$ = sum of squares Xi item

$(\sum X_i)^2$ = number of Xi items squared

N = the number of respondents

2. Then sum the variances of all items with the formula : $\sum S_i = S_1 + S_2 + S_3 \dots S_n$

Where:

$\sum S_i$ = the number of variance of all items

$S_1 + S_2 + S_3 \dots S_n$ = variance of 1, 2, 3 ... n of item.

3. Calculated the total variance with the formula:

$$S_t = \frac{\sum X_t^2 - \frac{(\sum X_t)^2}{N}}{N}$$

Where:

S_t = Total Variance

$\sum X_t^2$ = The total number of X square

$(\sum X_t)^2$ = The total number of X squared

N = The number of respondents

4. Calculated the instrument reliability using *Alpha*.

5. The last decision was comparing the value of r_{11} and r_t

| |
|----------------------------------|
| $r_{11} > r_t = \text{Reliable}$ |
|----------------------------------|

The qualification of reliability as follows¹³⁸:

0,800 – 1,00 = 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

From measurement of instrument reliability, it was found that r_{11} value = 0,889 was greater than r_{table} value = 0,207 or $0,889 > 0,207$. It meant that all of the test items had reliability in very high reliability level.

F. Data Collection

Before administering the tests, the writer contacted the chairman of Islamic Boarding College of Ma'had Al Jami'ah and explained the purpose of the writer's study. Then, after getting his or her approval, the writer applied the instruments of the study to the first semester students of English program in Islamic Boarding College of Ma'had Al Jami'ah.

The writer distributed the survey questionnaire about the students' English learning motivation in the form of the Likert scale to answer to the students. Then, the writer explained the purpose and the terms of the questionnaire before distributing it. The writer also helped the students to understand all part of questionnaire in the completion process. The writer informed the students that the information of the students would be kept confidential and be used for research

¹³⁸ Abdul Qodir, *Evaluasi Pembelajaran Bahasa Inggris*, Solo: El Torros, 2009, p. 88.

purpose only. After the students completing the survey questionnaire individually, the writer distributed the reading comprehension test in the form of multiple choices of some reading texts of the final national exam. It was aimed to measure the students' reading comprehension of English text. Then, after finding the students' answer, the writer analyzed and measured the correlation coefficient of the data.

G. Data Analysis

In data analysis of the study, the writer obtained a measure of the amount of students' learning motivation and a measure of students' reading comprehension. To measure the students' learning motivation, the writer counted up the students' score of motivation test in Likert scale. Whereas to measure the students' reading comprehension, the writer summed up the students' value based on Criterion Referenced Evaluation with the formula¹³⁹:

$$Value = \frac{Raw\ Score}{Ideal\ Maximum\ Score} \times 100$$

Then, the writer determined the degree of association of students' learning motivation and students' reading comprehension by calculating a correlational coefficient between the paired scores. A correlational coefficient was a number, a quantitative measure that represented the degree of relationship between the two variables and the direction (positive or negative) of the variables.¹⁴⁰ To calculate the correlational coefficient which determines the degree of learning motivation between reading comprehension of the freshman students of English Study

¹³⁹ Anas Sudijono, *Pengantar Evaluasi Pendidikan*, p. 318.

¹⁴⁰ Donna M. Johnson, *Approaches to Research*, p. 51.

Program of Ma'had Al Jami'ah, the writer used a Pearson product moment correlation. The writer used it because Pearson product moment correlation coefficient (Pearson r) can indicate both the direction and the magnitude of the relationship between two variables.¹⁴¹ It was also appropriate to use when the variables to be correlated are normally distributed and measured on an interval or ratio scale.¹⁴²

The formula of product moment correlation is¹⁴³:

$$r_{xy} = \frac{\frac{\sum x'y'}{N} - (C_x)(C_y)}{(SD_x)(SD_y)}$$

Where :

r_{xy} = The coefficient of correlation

$\sum x'y'$ = Total Value of Product of Moment between cell frequency (f) with x' and y'

N = Number of students

C_x = Correction value for the variable X in the sense of *interval class* as unit,

$$\text{where: } C_x = \frac{\sum f\dot{x}}{N}$$

C_y = Correction value for the variable Y in the sense of *interval class* as unit,

$$\text{where: } C_y = \frac{\sum f\dot{y}}{N}$$

¹⁴¹ Donald Ary, *Introduction to Research in Education*, USA: Wadsworth Cengage Learning, 2010, p. 129.

¹⁴² *Ibid.*, p. 353.

¹⁴³ Anas Sudijono, *Pengantar Statistik Pendidikan*, Jakarta: PT Raja Grafindo Persada, 2005, p. 225.

$SD_{\bar{x}}$ = Standard deviation of variable X, in the sense of *interval class* as a unit,
so $i=1$.

$SD_{\bar{y}}$ = Standard deviation of variable Y, in the sense of *interval class* as a unit,
so $i=1$.

The interpretation of correlation as follows¹⁴⁴:

| The Interval of Correlation | The Degree of Correlation |
|-----------------------------|---------------------------|
| 0,00 – 0,199 | Very Low |
| 0,20 – 0,399 | Low |
| 0,40 – 0,599 | Medium |
| 0,60 – 0,799 | Strong |
| 0,80 – 1,000 | Very Strong |

¹⁴⁴ Sugiyono, *Metode Penelitian Pendidikan*, p. 257.