III. RESEARCH METHODS

This chapter discusses research design, population and sample, research procedure, data collecting technique, try out, scoring system, and hypothesis test as elaborated in the following section.

3.1. Research Design

In conducting this research, the researcher has used a co-relational study of ex post facto design. According to Setiyadi (2006:144) ex post facto design is the design to search the cause-effect correlation, moreover, the researcher does not carry out of a treatment nor an experiment of any kind to subjects, but the data is collected after the fact.

There are two types of ex post facto research design, "co-relational study involves one group and casual comparative study involve two groups" (Setiyadi. 2006:144). Since this research involved one class only, co-relational study was used with the formula as follows :

T1 ——— T2

T1 : Questionnaire of learning strategies (Setiyadi, 2006:145)

T2 : Reading comprehension test

Whereby, in collecting the data, the researcher has given reading comprehension test in two types of text (T2) to see the students' reading comprehension ability. After that, she distribute the questionnaire (T1) in order to know the students' learning strategies employed by the language learners in comprehending reading text. Then, the data from questionnaire (T1) is correlated with the data from reading comprehension (T2).

3.2. Population and Sample

3.2.1. Population

The population of this research is the second grade of SMP Negeri 1 Batanghari in 2012-2013 academic year. There are six classes of the second grade in that school with the total of students in second grade are 167 students. The number of the students of each class are about 30 until 25 students.

3.2.2. Sample

Based on the population above, the researcher has determined the sample by using simple random sampling where every individual in population has probability to be chosen as a sample. She chooses one class by using lottery. VIII.B class has been selected which consists of 30 students. It is applied based on that consideration that every class in the population has the same chance to be chosen and in order to avoid the subjectivity in the research.

3.3. Research Procedure

This passage has concerned more about the ways or steps the data are collected beginning from the preparation to analyzing the data.

3.3.1. Determining the Research Problem

Based on the researcher's background of problem in the first chapter, it is formulated that is there any correlation between students' learning strategies and text types in students' reading comprehension; and which learning strategy is mostly applied by the students in reading.

3.3.2. Determining the Population and then Selecting the Sample

The populations of this research is the second year of SMPN 1 Batanghari and for the sample just one class has been chosen randomly.

3.3.3. Administering the Try-Out Test

The researcher has prepared the try out materials and give the try out test to another class which has the same characteristic as the samples that has been chosen. The try-out has been conducted before the test is administered. This has been expected to measure the validity and reliability of the test. The test is reading comprehension test and has been conducted in 90 minutes. There are two text types, descriptive and recount text. Each text has been 30 items of multiple choices, the test items have been reduced or kept depends on its reliability and

validity. The aim of try-out is to determine the quality of the test used as the instrument of the research, and to determine which item should be revised for the test.

3.3.4. Administering the Test

The research has been held in two meeting. The first has been used in conducting reading comprehension test 1 and test 2, the second has been used in conducting questionnaire of learning strategies.

3.3.5. Analyzing the Data

The results of reading comprehension tests have been analyzed by using Pearson Product Moment Correlation of SPSS for Window version 16.0 to find out whether there is correlation between the two groups and determining the strategy which is mostly applied by the students in reading.

3.4. Data Collecting Technique

The instruments of the research are reading comprehension test and questionnaire.

3.4.1. Reading Comprehension Test

Reading comprehension test is used to get the data of learner's reading comprehension ability. In reading comprehension test, there are two text types - descriptive and recount text. The aim of the researcher in giving two text types is

to correlate the students' learning strategy and text types in students' reading comprehension. Each text type consists of 20 multiple choices: a, b, c, and d.

3.4.2. Questionnaire

Questionnaire of reading strategy is used to gather information about the students' opinion in the strategy that are used by students' in reading.

The questionnaire which has been given for the students was modified from "Language Learning Strategy Questionnaire" (Setiyadi, 2006) which was modeled specially to search learning strategies employed by learners per skill. The researcher used Language Learning Strategy Questionnaire for reading skill only.

The researcher gave a set of questionnaire in order to know the students' learning strategies in studying English especially in reading. She has modified Setiyadi's questionnaire (2006) and arranged the questionnaire which classified into three learning strategies: metacognitive, cognitive, and social. The questionnaire consisted of 30 items that has been prepared based on the indicators of metacognitive, cognitive, and social strategies, which has determined which items designed to measure the three strategies. Each item has a numerical value, for example:

1 = I never do it

2 = I almost never do it

3 = I sometimes do it

4 = I often do it

5 = I always do it

3.5. Try Out

Before administering the reading comprehension test to the subject class, the researcher has conducted reading comprehension try out tests in VIII.E which consisted of 38 students. The instrument contained 30 questions of reading comprehension with four optional alternative answers for each (A, B, C, and D), one was the correct answer and the rest were distracters. The highest score in reading comprehension test 1 (descriptive text) is 93 and the lowest score is 27 with the mean score is 56,62. While, the highest score in reading comprehension test 2 (recount text) is 87 and the lowest score is 30 with the mean is 57,92. Furthermore, the medians are 51,50 in reading comprehension test 1 and 57,00 in reading comprehension test 2. (See Appendices 10 & 11)

The reading comprehension try out test is very important since a good test should meet the criteria in the term of level of difficulty, discrimination power, reliability as well as validity, as they will be elaborated in the following section:

3.5.1. Validity

A. Validity of Reading Comprehension

"A test can be said valid if the test measure the object to be measured and suitable with the criteria" (Hatch and Farhady, 1982:250). There are four types of validity: face validity, content validity, construct validity, and empirical validity or criterion-related validity. Therefore, the test uses in this research should meet at least construct and content validity.

Face validity will not be used because it only concerns with the layout of the test while the criterio-related validity is concerned with measuring the success in the future, as in replacement test (Hatch and Farhady. 1982:251).

a. Content Validity

Content validity is the extent to which a test measure a representative sample of subject matter content, the focus of content validity is on the adequacy of sample and not simply on the appearance of the test (Hatch and Farhady, 1982:251). This means, the items of the test should represent the material that have been taught. The test has based on the guideline of teaching English for the second year student of Junior High School and the learners' handbook.

b. Construct Validity

Construct validity is concerned with whether the test is actually in line with the theory of what it means to know the language (Shohamy, 1985:74). It means that the test items should really test the students or test items should really measure the students' ability in reading comprehension.

Therefore, the researcher used the table of specification of reading comprehension test to judge the validity of the test in order to know whether the test represent five types of reading specification, they are: determining main idea, finding detail information, references, inferences, and understanding vocabularies.

Table 1. Table Specification of Reading Comprehension Test 1 (Descriptive Text)

No.	Reading Specification	Item Number	Percentage
1	Determining main idea	1,3,8,11,16,23,30	23%
2	Finding detail information	2,4,9,10,12,17,18,20,26,28,29	37%
3	Finding references	7,14,24	10%
4	Finding inferences	6,15,21,22,27	17%
5	Understanding vocabularies	5,13,19,25	13%
Total		30	100%

Table 2. Table Specification of Reading Comprehension Test 2 (Recount Text)

No.	Reading Specification	Item Number	Percentage
1	Determining main idea	1,7,9,13,19,21,25	23,33%
2	Finding detail information	2,5,11,14,20,24,26,30	26,67%
3	Finding references	6,8,15,23	13,33%
4	Finding inferences	3,4,12,16,17,28,29	23,33%
5	Understanding vocabularies	10,18,22,27	13,33%
Total		30	100%

B. Validity of Questionnaire

The validity of questionnaire is also measured to find if the componets were proportionally suitable and related to the relevant theories of learning strategies. According to Hatch and Farhady (1978), there are least two validity should be fulfilled; content and construct validity. Since the questionnaire has modified from “Language Learning Strategy Questionnaire” (Setiyadi, 2006) which was modeled specially to search learning strategies employed by learners per skill. The researcher used Language Learning Strategy Questionnaire for reading skill only. The following table describes the aspects of learning strategies in questionnaire.

Table 3. Table Strategy Classification of The LLSQ

Strategies	Reading
Cognitive	Item no. 1-10
Metacognitive	Item no. 11-20
Social	Item no. 21-30

(Setiyadi, 2006: 80)

The student's choices or preferences on the item selected will indicate their group, whether they belong to cognitive, metacognitive, and social groups. For example: item 1-10 belong to cognitive, item 11-20 belong to metacognitive, and item 21-30 belong to social. The result of the questionnaire validity can be seen on Appendix 23.

3.5.2. Reliability

A. Reliability of Reading Comprehension

Reliability is simple consistency of a test. In other words, how far it can measure the subject at separated time, but it shows the same result relatively (Setiyadi.2006:113). Reliability can be defined as the extent to which a test produce consistent results when administered under similar condition (Hatch and Farhady.1982:244). Reliability of the tests is estimated by using split-half method. To measure the coefficient of the reliability between odd and even group, this research used the person product moment formula as follows:

$$r_{xy} = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{\{N\sum x^2 - (\sum x)^2\}\{N\sum y^2 - (\sum y)^2\}}}$$

Where :

r_{xy} : coeficient of reliability between X variable and Y variable (Product Moment Correlation formula)

N : numbers of the students

x : total score of odd number

y : total score of even number

x^2 : square of X

y^2 : square of Y

Then, the researcher has used "Spearmen Bown's Prophecy formula" (Hatch and Farhady,1982; 247) to know the coefficient correlation of whole items. The formula as follows:

$$r^k = \frac{2rl}{1 + rl}$$

Where:

rk : the realiability of the test

r1 : the reliability of half test (Hatch and Farhady.1982:247)

The criterian of reliability are:

0.80 – 1.00 : very high

0.60 – 0.79 : high

0.40 – 0.59 : average

0.20 – 0.39 : low

0.0 – 0.19 : very low

The researcher found that the reliability both of reading comprehension try out tests were very high reliability, 0.83 (on descriptive text) and 0.80 (on recount text). (See Appendices 8 and 9)

B. Reliability of Questionnaire

The researcher has collected the data by using the quantitative one. First of all, the result of the questionnaire was scored based on Likert Scale. The score ranged from 1-5. To make sure that the data gathers from the questionnaire had been reliable, she used reliability analysis based on Cronbach Alpha Coefficient of SPSS for window. Cronbach Alpha Coefficient is the most common used to measure the consistency among indicators in the questionnaire which was counted based on the correlation between each items. The Alpha ranged from 0 to 1. The higher alpha, the more reliable the items of the questionnaire (Setiyadi,2006). The result shows that the reliability of questionnaire were very high reliability, 0.930. (See Appendix 22)

3.5.3. Level of Difficulty

Level of difficulty relates to "how easy of difficult the item is from the point of view of the students who took the test. It is important since test items which are too easy (that all students get right) can tell us nothing about differences within the test population" (Shohamy, 1985:79). Moreover, Heaton (1975:182) states that the difficulty level of an item shows how easy or difficult that particular item done by the participants. Level of difficulty is generally expressed as the fraction (or percentage) of the students who answered the item correctly. It is calculated by the following formula:

$$\text{LD} = \frac{U + L}{N}$$

Where:

LD : level of difficulty

U : the number of upper group students who are answer correctly

L : the number of lower group students who are answer correctly

N : the total number of students who take the test

The criteria are:

<0.30 : difficult

0.30-0.70 : good

>0.70 : easy (Shohamy, 1985; 79)

The researcher has found that there were 4 items (13%) were difficult, 20 items (67%) were good, and the rest 6 items (20%) were easy in reading comprehension test 1. Then in reading comprehension test 2, the researcher has found that there were 1 item (3%) was difficult, 20 items (67%) were good, and the rest 9 items (30%) were easy. However, the researcher did not omit all the difficult and easy items, but only omit some items which were very difficult and very easy items.

In this case, there were 3 items needed revising on reading comprehension test 1 since 1 item, item number 2, was too easy; and 2 items, items number 21 and 24, were too difficult (see Appendix 6). While on reading comprehension test 2, there was not revision (see Appendix 7).

3.5.4. Discrimination Power of the Test

Discrimination power refers to "the extent to which the item differentiates between high and low level students on that test. A good item according to his criterion is one in which good students did well and bad students failed" (Shohamy, 1985:81).

The formula is used :

$$DP = \frac{Upper - Lower}{\frac{1}{2}(N)}$$

Where:

DP = discrimination power

Upper = proportion of "high group" students getting the item correct

Lower = proportion of "low group" students getting the item correct

N = total number of students (Shohamy, 1985:82)

The criteria are:

0.00-0.20 = Poor

0.21-0.40 = Satisfied

0.41-0.70 = Good

0.71-1.00 = Excellent

(Negative)= bad items (should be omitted) (Heaton,1975: 182)

Based on the table and criteria on Appendix 6 of reading comprehension test 1, the researcher concluded that 4 items (13%) were no discrimination and the rests were possitive discrimination 26 items (87%) where 9 items were poor, 10 items were satisfactory, 10 items were good, and 1 item was bad. Meanwhile, based on

the table and criteria on Appendix 7 of reading comprehension test 2, the researcher concluded that 6 items (20%) were no discrimination and the rests were possitive discrimination 24 items (80%) where 9 items were poor, 15 items were satisfactory, 5 items were good, and 1 item was bad.

After counting the level of difficulty and discrimination power of each item, the researcher found that 10 of 30 items could not meet the criteria of good test and should be dropped in both of reading test. The items of reading comprehension test 1 were numbers 1, 4, 9, 10, 12, 16, 19, 22, 23, and 25, while in reading comprehension test 2 were numbers 1, 2, 8, 10, 12, 14, 20, 25, 26, and 29. (See Appendices 6 and 7)

3.6. Scoring System

In scoring the result of students' test, the researcher has used Percentage Correct (Lyman, 1971:95). The percentage correct score was used in reporting the result of classroom achievement tests. The researcher has calculated the result of the test by using this formula:

$$X\%c = 100\,\frac{R}{T}$$

(Lyman, 1971:95)

Where :

$X_{\%c}$ = percentage of correct score

R = number of right answers

T = total number of the items on test

3.7. Hypothesis Test

To conclude a possible correlation between learning strategies and text types in students' reading comprehension, the researcher has used the criterion of the hypothesis acceptance. To determine whether the first hypothesis is accepted or rejected, the following criteria for acceptance:

$H_0 = r_{value} < r_{table}$

$H_1 = r_{value} > r_{table}$

Notes:

H_0 : There is no correlation between students' learning strategies and text types in students' reading comprehension. We can accept this hypothesis if r_{value} is lower than r_{table}.

H_1 : There is a correlation between students' learning strategies and text types in students' reading comprehension. We can accept this hypothesis if r_{value} is higher than r_{table}.

Setiyadi (2006: 167) states that coefficient correlation is always between -1 up to +1. The coefficient correlation can be seen as follow:

0.800 – 1.00 = very high

0.600 – 0.800 = high

0.400 – 0.600 = moderate

0.200 – 0.400 = low

0.000 – 0.200 = very low