I.   RESEARCH METHODS

1.1 Research Design

The design of this research was a inferensial statistic analysis, a quantitative study. In collecting the data, the researcher did not carry out a treatment nor an experiment of any kind to subjects. In conducting this research, the researcher used a co-relational design of ex post facto designs.

As Setiyadi (2006:144-146) states that there are two types of ex post facto research design, "co-relational study involves one group and causal comparative study involves two groups." Since this research involves one class only, co-relational study was used with the formula as follows:

X   Y

    X : Learning strategies as the Independent variable

    Y : Reading comprehension as the Dependent variable

Whereby, in collecting the data, the writer gave a reading test (Y) to see the students' reading achievement . Prior to that, the researcher distributed a questionnaire (X) in order to know the learning strategies employed by the learners in comprehending the reading text. Then, the score from questionnaire (X) was correlated with the score from reading test (Y).

1.2 Population and Sample of the Research

The population of this research was the students of SMAN 8 Bandar Lampung in the academic period 2011/2012. The researcher used simple random sampling technique. So, the researcher take one class from the population as the sample, that is class XI IA 2 consisting of 40 students. The reason of choosing the second year students as the sample because they have learned English for many years and it is assumed that they have better performance compared with the first year students.

1.3 Data Collecting Technique

In collecting the data the researcher used the following technique:

1. Questionnaire

   It is a list of statements and questions to be answered by the students to measure students uses of learning strategies. The questionnaire used is close-ended questionnaire where the answer is limited (Setiyadi, 2006:54).

   The questionnaire given to the students was adapted from "Language Learning Strategy Questionnaire" (Setiyadi, 1999) which is modeled especially 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. The researcher used Setyadi's questionnaire (1999) because he has arranged the questionnaire which classified into three learning strategies: metacognitive, cognitive, and social. The questionnaire consist of 20 items that have 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, As we can see the table below:

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

Table 1. Strategy Classification of the LLSQ

Strategies	Reading
Cognitive	Items no. 1 – 11
Metacognitive	Items no. 12 – 17
Social	Items no. 18 – 20

(Setiyadi, 1999:70)

The student's choices or preferences on the item selected indicated their group, whether they belong to cognitive, metacognitive, or social groups. For example: items 1 – 11 belong to cognitive, and then the total scores on the group divided into 11. Items 12 – 17 belong to metacognitive, then the total scores on the group divided into 6. Items 18 – 20 belong to social, then the total scores on the group divided into 3. The data gathered from questionnaire is used to analyze the most frequent strategies employed by the learners. To make sure that the data gathered from the questionnaire

was reliable, the researcher used reliability analysis based on Cronbach's alpha. The higher alpha, the more reliable the items of the questionnaire (Setyadi, 2001).

Moreover, the researcher analyzed the correlation between questionnaire of learning strategies and students' reading comprehension test by using Pearson Product Moment.

2. Reading Test

It is a set of question and problems of objective test to measure students' reading comprehension. Reading test was given in order to know students' reading achievement in comprehending reading text. The researcher used multiple choice of reading test. A test can be said valid if the test measure the object to be measured and suitable with the criteria (Hatch & Farhady, 1982:250). The researcher used quantitative research in analyzing all the data gathered from the reading test. The tests are as follows:

a. Validity of the Test

A good test can be seen from its validity. In relation to the validity of the test, Anderson, et al (1975) in Arikunto (1997) mentions that a test is valid if it measures what it purposes to measure.

According to Hatch and Farhady (1982: 251), there are four basic types of validity: face validity, content validity, construct validity and empirical or criterion-related validity. To measure whether the test has good validity, the researcher used content and construct validity since the other two are considered

to be less needed. Face validity only concerns with the layout of the test. Criterion-related validity concerns with measuring the success in the future, as in replacement test.

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). Regarding the construct validity, it measures whether the construction had already in line with the objective of the learning (Hatch and Farhady, 1982: 251). To know whether the test is good reflection of the knowledge which the teacher wants the students to know, the researcher compares this test with table of specification. If the table represents the material that the researcher wants to test, then it is valid from that point of view. A table of specification is an instrument that helps the test constructor planned the test.

Table 2. Table of Specification of Reading Comprehension

NO	Objective	Number of items	Percentage
1	Determining main idea	1., 17., 26.	10%
2	Identifying specific Information	4., 7., 8., 10., 12., 16., 19., 22., 27., 29., 30.	36,7%
3	Inference	2., 3., 6., 11., 15., 23., 24., 25.	26,7%
4	Reference	13., 18.	6,6%
5	Vocabulary	5., 9., 14., 20., 21., 28.	20 %
Total		30	100%

Basically, the construct and content validity are overlap. It is a representative of the material from the subject. In line with Nuttal (1985) the relation validity of the instrument refers to construct validity in which the question represents five reading skills, i.e. determining main idea, identifying specific information,

reference, inference, and vocabulary. Skills of reading in the test are a part of the construct validity and the item numbers are a part of the content validity.

Beside the construct validity, the researcher used inter rater analysis. The researcher used 4 inter rater to make the reading test more valid. They are Dra. Herna Andayani, Martha Sinaga, S.Pd., Martalinda, S.Pd., and Parmin, S.Pd. They are English teachers at SMAN 8 Bandar Lampung. Since who have been teaching more than 10 years it is understood they have a lot of experience in this field.

Table 3. Inter-rater Judgment

No	Item Number	Skill of Reading	Inter-rater Judgment				Total percentage
			R1	R2	R3	R4	
1	1	Determining main idea	25%	25%	25%		75%
	17		25%	25%	25%	25%	100%
	26			25%	25%	25%	75%
2	4	Finding Specific Information	25%	25%	25%	25%	100%
	7			25%	25%		50%
	8		25%		25%	25%	75%
	10		25%	25%			50%
	12		25%		25%	25%	75%
	16			25%	25%	25%	75%
	19		25%		25%		50%
	22		25%	25%		25%	75%
	27			25%	25%	25%	75%
	29		25%		25%		50%
	30		25%	25%		25%	75%
3	2	Inference	25%	25%	25%		75%
	3		25%	25%	25%	25%	100%
	6				25%	25%	50%
	11		25%	25%		25%	75%
	15			25%	25%	25%	75%
	23		25%	25%	25%	25%	100%
	24		25%	25%	25%		75%
	25		25%		25%	25%	75%
4	13	Reference		25%	25%	25%	75%
	18		25%	25%		25%	75%
5	5	Vocabulary	25%	25%	25%	25%	100%
	9		25%		25%	25%	75%
	14			25%	25%		50%
	20			25%		25%	50%
	21		25%		25%	25%	75%
	28			25%	25%	25%	75%

b. Reliability of the Test

A test is called reliable if the score gained by the examiner is constant whenever and by whomever the test is conducted. A test will not be a good parameter unless the test is suitable or constant. To measure the reliability of the test, the researcher used Spearman Brown formula. The formula is as follows:

$$rk = \frac{2.rl}{1 + rl}$$

rk = The reliability of the test

rl = The reliability of half the test

The criteria are:

0.00 – 0.19	Very low reliability
0.20 – 0.39	Low reliability
0.40 – 0.59	Average reliability
0.60 – 0.79	High reliability
0.80 – 1.00	Very high reliability

c. Level of Difficulty

Level of difficulty relates to "how easy or 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).

Level of difficulty is calculated by using the following formula:

$$LD = \frac{R}{N}$$

LD = Level of difficulty

R = Number of students who answers it right

N = Total number of students

The criteria are:

LD < 0.30   = difficult

LD = 0.31 – 0.70 = satisfied

LD > 0.71 – 1.00 = easy

(Arikunto, 1997:214)

d. 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 this criterion, is one in which good students did well, and bad students failed."

(Shohamy, 1985:81)

The formula is used:

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

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

The criteria are follows:

LD   = 0.00 – 0.20 = poor

LD   = 0.21 – 0.40 = satisfactory

LD   = 0.41 – 0.70 = good

LD   = 0.71 – 1.00 = excellent

(Arikunto, 1997:223)

1.4 Scoring System

In scoring the students' result of the test, the researcher used Arikunto's formula (1989:271). The highest score will be 100.

$$S = \frac{R}{N} \times 100$$

Where:

S is the score of the test

R is the right answer

N is the total of the items

1.5 Research Procedures

In conducting the research, the writer used some procedures as follows:

1. Determining the sample of the research

   The sample of the research was the students of class XI IPA 2 SMAN 8 Bandar Lampung.

2. Administering reading test

   Reading test was used to get the data of learners' reading ability.

3. Administering questionnaire of learning strategies

Questionnaire of learning strategy was used to analyze the most frequent learning strategy employed by the learners and its effect toward their reading comprehension.

4.   Analyzing the data

Determining the most frequent learning strategies used and its effect to learners' reading comprehension.

5.   Drawing conclusions from the data.

1.6 Data Analysis

In this research the researcher used co-relational study. It is used to measure whether there is relationship between two variables. In this case X is questionnaire of learning strategies as the first variable and Y is reading comprehension test as the second variable. The writer tried to analyze the current data taken from the students. Having collected the data, the researcher analyzed the data by using the quantitative description. First the students are asked to fill in questionnaire which classified into three learning strategies: metacognitive, cognitive, and social. The result of questionnaire was scored based on Likert Scale (Setiyadi, 2006:58). The score ranges from 1 to 5. After that, it analyzed by using the "Cronbach Alpha Coefficient". "The Cronbach Alpha is the most common used to measure the consistency of the items of the questionnaire. The alpha ranges between 0 and 1. The higher the alpha, the more reliable is the questionnaire" (Setiyadi, 1999:77).

Meanwhile, to answer research question number 1 the researcher analyzed the data from the questionnaire of learning strategies. The student's choices or preferences on the item selected indicated their group, whether they belong to cognitive, metacognitive, or social

groups. The item 1 – 11 belong to cognitive, and then the total scores on the group were divided into 11. Item 12 – 17 belong to metacognitive, then the total scores on the group were divided into 6. Item 18 – 20 belong to social, then the total scores on the group were divided into 3. The data gathered from questionnaire used to analyze the most frequent strategies employed by the learners in learning reading, it was analyzed by comparing the mean score of the three learning strategies.

At the end, to answer research question number 2 the researcher analyzed the data both from questionnaire and reading test to see the correlation between the students' learning strategies and reading achievement by using "*pearson product moment* correlation" (SPSS for window version 16.0). "Pearson product moment is common used in social science and usually intended to see the correlation between two continuous variables, between one ordinal variable and one interval variable, or between two ordinal variables" (Setiyadi, 2000:10).

The researcher used co-relational study to get some empirical data about the effect of questionnaire of learning strategies and reading comprehension test.

1.7 Hypothesis Testing

In order to prove the hypothesis regression linear was used. Regression was used to predict the influence of independent variable toward dependent variable. Regression linear cannot be separated from correlation analysis. Coefficient that we got ba correlation analysis was squared to look for the regression value (r^2).