## III. METHOD

A. Research Design

This research was a quantitative descriptive research. Ex post facto research design was used here, since there was no treatment done, but the data were collected to see the influence of students' motivation and attitude altogether toward their English learning achievement. This research had three variables; they were motivation (X_1) and attitude (X_2) as independent variables and English learning achievement (Y) as dependent variable. The design was as follow:
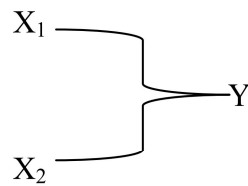
There was only one group of students to be analyzed in this research. They were given questionnaires and also an achievement test to be answered, after that the data were analyzed to find out the influence of their motivation and attitudes toward their English learning achievement.

B. Population and Sample

The population of this research was the students of the first year of SMAN 10 Bandar Lampung. There were seven classes of the first year students. Purposive random sampling technique was used in choosing the sample. It was used in order

to make all class had same chance to be the sample class. To apply the purposive random sampling, the researcher used lottery.

There were five classes that were used in this research. One class was used as questionnaires' try-out class, it was X.1 chosen for this part. One class was used as achievement test's try out class, it wasX.6.Three classes was used as sample class, those classes were X.2, X.4, and X.5. Even though there were three classes chosen as sample class, in analyzing the data, the researcher did not threat them as 3 groups but merged them into one group. The table of the class distribution as follows:

Table 3.1 Table of Class Distribution

No	Class	Explanation
1	X.1	Questionnaire Try Out
2	X.6	Achievement test try out
3	X.2, X.4, X.5	Sample class

C. Research Procedure

To make this research ran well, the writer made research procedures. They were:

a. Determining the subject

There were 7 classes of the first year students at SMA Negeri 10 Bandar Lampung. The researcher took five classes to take part in this research. Three classes became the subject of the research and two classes became the try out class. The classes were selected randomly by using lottery.

b. Trying Out the instruments

There were 2 tryout classes. One of the classes was given questionnaires and the other class was given achievement test.

c. Analyzing the try out result.

After the try out classes finished answering the test and questionnaire, an analysis was done in this step to find out the validity and reliability of the instruments.

d. Distributing the questionnaire to the subject

When the reliability and validity of the test has been met, the next step was distributing the questionnaires to the students. There were two kinds of questionnaires. The first one is a questionnaire to measure students' motivation; the second one is a questionnaire to measure students' attitude.

e. Conducting achievement test

The next step, the researcher administered an achievement test to the subject in order to measure their achievement. The achievement that was tested was receptive skill test.

f. Tabulating the data

The data gained from both questionnaires and achievement test that had been done by the experimental class were tabulated to be analyzed.

g. Analyzing the data

The data that has been tabulated was analyzed. The writer analyzed the influence of motivation and attitudes toward English learning achievement by using One Way Anova and Univariate Analysis of Variance. The analysis was done by using SPSS computer program.

h. Making conclusion

The researcher made conclusions by considering the result of the data analysis.

D. Data Collecting Technique

In collecting data, the researcher used the following procedures which can be described as follows:

1. Questionnaire, it is a set of question and statement to be answered by the students to measure the students' motivation and attitude in learning English (Variable X_1 and X_2).

2. Students' achievement test, it is a set of questions which is made and administered by the researcher (variable Y).

E. Research Instrument

In collecting the data, the researcher distributed questionnaires and also administered an achievement test.

1. Questionnaire

The researcher distributed the questionnaire in order to estimate the students' motivation and attitude toward English. There were two parts of questionnaires in this research. The first one (Questionnaire A) is used to measure students' motivation, and the second one (Questionnaire B) is used to measure students' attitude. Both of the questionnaires were taken, translated into Bahasa Indonesia, and also modified from Setiyadi (2006).

The first questionnaire (Questionnaire A) consisted of 20 items and has 3 options. It was taken from Setiyadi (2006, 83 -86). It consisted of positive and negative statements. The positive statements were written in bold form. For this questionnaire, the score were:

        Positive statements   : a = 3, b = 2, c = 1

        Negative statements   : a = 1, b = 2, c = 3

The second questionnaire (Questionnaire B), had 5 options, had positive and negative statements and consisted of 30 items. It was also taken from Setiyadi (2006, 73-75). The positive statements were written in bold form. For this questionnaire, the score were:

        Positive statements   : a = 5, b = 4, c = 3, d = 2, e = 1

        Negative statements   : a= 1, b = 2, c =3, d =4, e =5

Based on the theories on chapter two, the researcher made the table of specification as follow:

Table 3.2 Table of Specification for the Questionnaires

Num	Motivation	Question number
1	Persistence	4, 5, 6, 8, 17
2	Aspiration	7, 10, 11, 12, 15
3	Devotion	1, 2, 9, 16, 19
4	Perseverance	3, 13, 14, 18, 20

Num	Attitude	Question number
1	Attitude toward English as foreign language (Affective component)	1-10
2	Attitude toward English teaching and learning (cognitive component)	11-20
3	Attitude toward native speaker of English (behavioral component)	21-30

2. Student's achievement test

Achievement is a degree of students' success in learning a lesson, usually in school, which is stated in a score, achieved from a test result. In collecting the data, the researcher made and administered a test; the result of the test was used as their achievement data. Related to the definition above, the researcher composed the achievement test based on what students had been learned by looking at syllabus. Student's achievement test was used because the researcher thought that he had to make sure the validity of any data he would use. The skills that were tested were receptive skills; it consists of listening, vocabulary, grammar and reading. There were 80 items in the test, 24 items for listening test, 25 items vocabulary test, 15 grammar test, and 16 reading test. Those 80 items were tried out first in order to find out the quality of the items and also the reliability of the test. After the researcher found the quality of the items and also the reliability, the test was used to test the experiment class. The data from the experiment class was analyzed along with the questionnaires score in order to measure whether their motivation and attitudes have influence to their English achievement. The entire question on the achievement test was taken from Setiawan, 2010. For table of specification, see Appendix 4.

F. Reliability of the Instrument

1. Reliability of the Questionnaires

Reliability might refer to the tendency toward consistency found in repeated measurement of the same phenomenon. It can also refer to the stability of measurement over time, an approach which was not suited to the current investigation. Since the questionnaires used in this research were scored based on

Likert scale, to measure the consistency the items, the researcher used Cronbach Alpha Coefficient. It was used because it was the most common means to measure the consistency among the indicators of the questionnaire. The alpha ranges between 0 and 1. The higher the alpha, the more reliable the questionnaire will be (Setiyadi, 2006: 167). To examine the reliability level or questionnaire reliability, the researcher uses the following formula:

$$r_{11} = \left(\frac{n}{n-1}\right)\left(\frac{1-\sum \sigma i^2}{\sigma i^2}\right)$$

Explanation

r_{11} = reliability

n = the number of item

$\sum \sigma i^2$ = Total variance of all items

σi^2 = the total of variance

To find the variance, we use the formula as follow:

$$\sigma = \frac{\sum X^2 - \frac{(\sum X)^2}{N}}{N}$$

Explanation:

σ^2 = variance

$\sum X^2$ = the number of data quadrate

$(\sum X)^2$ = the number of data being quadrate

N + the number of data

The classification of reliability was as follow:

a. between 0.800 to 1.00 = very high reliability

b. between 0.600 to 0.800 = high reliability

c. between 0.400 to 0.600 = moderate reliability

d. between 0.200 to 0.400 = low reliability

e. between 0.00 to 0.200 = very low reliability

2. Reliability of the Achievement Test

Reliability refers to the extent to which the text is consistent in its score, and gives us an indication of how accurate the test score are (Hatch and Farhady, 1982: 244). To test the reliability of the instruments, the writer used *split-half* method in which the reading tests were divided into halves (Hatch and Farhady, 1982: 246).

To measure the coefficient of the reliability between the first and the second half, Pearson Product Moment was used, which was formulated as follows:

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

Explanation:

n = number of students

r = coefficient reliability between first and second half

x = total number of first half

y = total number of second half

x^2 = square of x

y^2 = square of y

$\sum x$ = total score of first half items

$\sum y$ = total score of second half items

(Hatch and Farhady, 1982: 222)

Then to know the coefficient correlation of the whole items, Spearman Brown's Pharophecy Formula was used. The formula was as follows:

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

Explanation:

rk = the reliability of full test

rl = the reliability of half test

The criteria of reliability are:

0.90- 1.00 = high

0.50- 0.89 = moderate

0.0- 0.49 = low

(Hatch and Farhady, 1982: 286)

G. Validity of the Instrument

There were three instruments in this research. Those were two questionnaires and one achievement test.

A test can be said valid if the test measures the object to be measured and suitable with the criteria (Hatch and Farhady, 1982: 250). 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 were 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 (Hatch and Farhady, 1982:251). The two types used in this research were:

a. Content validity

Content validity refers to the extent to which a test measures a representative sample the subject matter contents, the focus of the content validity is adequate of the sample and simply on the appearance of the test (Hatch and Farhady, 1982:251). To know whether the test is good reflection of what will be taught and 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 plans the test.

b. Construct Validity

Construct validity is concerned with whether the test is actually in line with the theory of what motivation, attitude and receptive skills means. To know the test was true reflection of the theory in motivation, attitude and receptive skills, the researcher examined whether the test questions actually reflected the means of those aspect or not.

Beside those validities above, for achievement test, there was item analysis needed to be done in order to support the validity of the achievement test. The item analysis was done to find out:

a. Level of Difficulty

To see the index of difficulty, the writer used the following formula:

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

Explanation:

LD   = level of difficulty

R = the number of the students who answer correctly

N = the total number of the students

The criteria are:

< 0.30   = Difficult

0.30- 0.70   = Average

> 0.70   = Easy

(Heaton, 1975: 182)

b. Discrimination Power

The discrimination power (DP) is the proportion of the high group students getting the items correct minus the proportion of the low-level students who getting the items correct. In calculating the discrimination power of each item, the following formula was used:

$$DP = \frac{correctUpper - correctLower}{^1/_2\,N}$$

Explanation:

DP   = Discrimination Power

  U   = Number of upper group who answer correctly

  L   = Number of lower group who answer correctly

  N   = Total number of the students.

The criteria are:

DP: 0.00-0.19   = Poor

DP: 0.20-0.39   = Satisfactory

DP: 0.40-0.69   = Good

DP: 0.70-1.00   = Excellent

DP: - (negative)   = Bad items, should be omitted

(Heaton, 1975: 182)

c.   Scoring System

The scoring system that was used in this research is dividing the right answer by total items timed 100. In scoring the students' result of the pre-test and post-test, the formula by Arikunto (1997:212) was employed:

$$S = \frac{R}{N} \text{x } 100$$

Notes:

S   = score of the test

R   = the right answers

N   = the total item

H. Data Analysis

In order to find out the influence of motivation and attitude toward English learning achievement, the researcher analyzed the data as follow:

a.   Tabulating the score of questionnaires and achievement test.

All students answer were tabulated and scored.

b. Analyze the data

The data that has been tabulated were analyzed. The analyses that were done was analyzing the reliability and validity both the questionnaires and achievement test, level difficulty and discrimination power of the achievement test and finally, analyzing the influence of students' motivation toward English achievement, the influence of students attitude toward English achievement, and motivation and attitude altogether toward their English achievement by using One Way Anova and Univariate Analysis of Variance. In doing this analysis, the researcher used SPSS program and Microsoft Excel program.

c. Drawing conclusion.

The researcher will draw conclusion by looking at and inferring from the result of the One Way Anova and Univariate Analysis of Variance.

I. Hypothesis Testing

In order to test the hypothesis, the writer used One Way Anova and Univariate Analysis of Variance of SPSS since the data came from the same sample. The hypotheses were as follow:

$H1_0$ is accepted if there is no significance difference in the English achievement between students with high motivation and students with low motivation ($H1_0 = F_{value} < F_{table}$ or $P_{value} > \alpha$).

$H1i$ is accepted if there is significance difference in the English achievement between students with high motivation and students with low motivation ($H1i = F_{value} > F_{table}$ or $P_{value} < \alpha$).

$H2_0$ is accepted if there is no significance difference in the English achievement between students with strong attitude and students with weak attitude ($H2_0 = F_{value} < F_{table}$ or $P_{value} > \alpha$).

$H2_i$ is accepted if there is significance difference in the English achievement between students with strong attitude and students with weak attitude ($H2i = F_{value} > F_{table}$ or $P_{value} < \alpha$).

$H3_0$ is accepted if there is no significant interaction between motivation and attitude altogether toward English achievement ($H3_0 = F_{value} < F_{table}$ or $P_{value} > \alpha$).

$H3_i$ is accepted if there is significant interaction between motivation and attitude altogether toward English achievement ($H3_0 = F_{value} > F_{table}$ or $P_{value} < \alpha$).