# III. RESEARCH METHOD

This chapter provides an overview of research design, population and sample, data collecting techniques, steps in collecting data, research instrument, validity and reliability, and data analysis was applied in this research.

3.1. Research Design

This research was a quantitative study. The design of this research was *ex post facto*, since the data were collected after the fact. The writer used one group and took the data in one time without giving treatment (Setiyadi, 2006: 133). The design of this research could be described as follow:

$$\boxed{\textbf{T1 T2}}$$
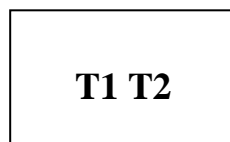
T_1 : Learning strategies in listening

T_2 : Listening achievement

(Setiyadi, 2006:132)

Whereby, in collecting data, the writer distributed a questionnaire of listening learning strategies and a listening tryout test. The questionnaire was about learning strategies in listening (T1) in order to know which learning strategies

used by the learners in learning listening, whether they used cognitive, metacognitive, or social strategy. After that, the tryout listening test was conducted in order to find out students' listening achievement. Then, the data from the questionnaire (T1) associated with the listening achievement from the tryout test (T2) to find out the influence of using learning strategies toward listening achievement.

3.2. Population and Sample

The population of this research was the second grade of MAN 1 Bandar Lampung in academic year 2014/2015. There were eight classes of the second grade in that school. There were 32 students of each class. In determining the sample, the writer used simple random sampling by using lottery (paper with the number on it). Then, the writer chose one class as the sample, so those all the second grade classes had the same chance to be the sample. It was applied based on that consideration that every class in the population had the same chance to be chosen and in order to avoid the subjectivity in this research. The second grade students had to be able to acquire listening ability for their preparation of National Examination, therefore this research was conducted at second grade level.

3.3. Data Collecting Techniques

In collecting the data, the writer used a questionnaire of listening learning strategies and listening tryout test. There were lists of statements and questions to be answered by students to measure the students' use of learning strategies in learning English listening. The questionnaires used were open-ended

questionnaires where the answer is limited (Setiyadi, 2006: 54). Besides, there were lists of questions with four possible answers to be answered by students in the tryout test to measure students' listening achievements. The material was taken from National Examination listening test on 2013 and 2012. It used different materials which were related to listening skills for second grade of senior high school.

3.4. Steps in Collecting the Data

In collecting the data, the writer used the following steps:

3.4.1. Determining the Population of the Research

In determining the sample, the writer used simple random sampling by using lottery. Then, the writer chose one class as the sample.

3.4.2. Conducting the Questionnaire

There was a questionnaire of listening strategies given to the learners. It was given to learners in an attempt to get data about the learning strategies used by learners in listening, whether they use cognitive, metacognitive, or social strategy. The questionnaire used to Language Learning Strategy Questionnaire or LLSQ is based on Setiyadi (2011). The questionnaire was designed particularly to review learning strategies used by learners in listening since the focus of the study was on listening skill.

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3.4.3. Conducting the Tryout Listening Test

The kind of listening test used was objective test. There were lists of questions with five possible answers to be answered by students in the tryout test to find out

the validity, reliability, level of difficulty, and discrimination power of the test. The numbers of the test items were 30 items. Time allocated is 90 minutes. After conducting tryout listening test, it was found that there were eighteen poor items, ten satisfied items, and two good items. Based on the analysis, it was found that there were seven items omitted, eleven items revised, and twelve items administered. Finally, the writer took 23 items as using for listening test.

3.4.4. Conducting Listening Test

The listening test was given to the students after the tryout test was administered. There were 23 items used in the listening test. The writer gave 90 minutes to answer the listening test. This test was conducted to find out student's achievement in listening.

3.4.5. Analyzing the Data

After distributing questionnaire test, the data taken from questionnaire in the form of answers were analized. In analyzing the data, the writer identified what students' learning strategies in listening through looking at the highest score of the questionnaire answers. The highest score classified the students, weather they mostly use cognitive, metacognitive, or social strategy in learning listening. Then, the writer scored the students' listening tryout test to find out their achievements in learning listening. After that, the writer found out the influence of the use of learning strategies toward students' achievements in listening by using one way ANOVA.

3.4.6. Making a Report and Discussion of Findings

After having gaining all data, the writer made a report and discussion on findings of the types of learning strategies used by the students in learning English as foreign language and the influence of the use of learning strategies in learning listening toward the students' achievements in listening.

3.5. Research Instrument

3.5.1. The Questionnaire of Learning Strategies in Listening

It was a list of some statements answered by the students to find out which students' learning strategies use. The research used close-ended questionnaire where the answer was limited (Setiyadi, 2006: 54). In accordance with Setiyadi (2011), the questionnaire was given to the students adapted from "Language Learning Strategy Questionnaire". The writer used Language Learning Strategy Questionnaire or the LLSQ to find out students' learning strategies in listening. It was translated and answered into Indonesian in order to facilitate the learners in understanding the questionnaire. In the LLSQ students were provided with 20 items. There were three kinds of strategies in LLSQ, namely: cognitive strategy, metacognitive strategy, and social strategy. Cognitive strategies in listening were measured with item nos. 1-11, metacognitive strategies were measured with item nos. 12-17, and social strategies with item nos. 18-20.

In the questionnaire students were given instruction; students were asked to write their response to statements in the LLSQ on the separated answer sheet attached to the questionnaire. They should write their response (1, 2, 3, 4, or 5) that tells *how*

true of them that statement is. Number 1 means that it was never or almost never true of them, number 2 usually not true of them, number 3 somewhat true of them, number 4 usually true of them, and number 5 always or almost always true of them (Setiyadi, 2011). After answering the questionnaire, the learners were classified into those three kinds of learning strategies based on their highest score of questionnaire answers.

3.5.2. Listening Test

The kind of listening test used was objective test. There were lists of questions with five possible answers to be answered by students in the try out. The numbers of the test items are 30 items and they had been tested toward XI IPA 3. The result tryout was used to measure level of difficulty, discrimination power, reliability, and validity to achieve good test instrument criteria. Based on the analysis, it was found that there were seven items omitted, eleven items revised, and twelve items administered. Finally, the writer took 23 items as using for listening test.

The material of the test was taken from National Examination listening test on 2013 and 2012. There were lists of questions with five possible answers (A, B, C, D, E) to be answered. The writer used four sections of listening test. Each section had different parts and topics. The first section was about dialogues and question spoken in English. The second section was about incomplete dialogue spoken in English. The third section was about deciding suitable picture based on dialogue and monologues spoken in English. The fourth section was about monologue

spoken in English. It used different materials which were related to listening skills for second grade of senior high school. The time allocation was 90 minutes.

3.6. Validity and Reliability

3.6.1. Validity of Listening Test

One of criteria that determines the quality of a good instrument is its validity. Validity was "the appropriateness, meaningfulness, correctness, and usefulness of the inferences a writer makes". It means that the instrument should be designed fitted to the determined criteria so the writer could obtain the desired data in order to draw correct conclusions for his/her research. Moreover, according to Hatch and Fahrady (1982) there were least two validity should be fulfilled; content and construct validity.

The listening test in this research had a good content and contruct validity. This test was already standardized because the material was taken from National Examination listening test on 2013 and 2012. There were 30 items in listening test. The kind of listening test used is objective test. There were four sections of listening ability test. Each section consisted of have different part and topic. The first section was about dialogues and question spoken in English. The second section was about incomplete dialogue spoken in English. The third section was about deciding suitable picture based on dialogue and monologues spoken in English. The fourth section was about monologue spoken in English.

3.6.2. Reliability

1. Reliability of Questionnaire

Reliability refers to whether the test was consistent in its score and gave an indication of how accurate the test score were (Shohamy, 1983: 70). Since the LLSQ was a questionnaire for language learning strategies that had been developed using a Likert scale, a Cronbach alpha was used to measure the internal consistency of the items of the questionnaire. The reliability of the LLSQ was determined for each individual category of language learning strategy. With 79 participants from an Indonesian university, the Cronbach Alpha of sub-scales of the LLSQ were .89, .82, and .75 for metacognitive, deep-level, and surface-level categories respectively. The result of reliability analyzes of metacognitive, deep level cognitive, and surface level cognitive categories in speaking, listening, reading, and writing show that the items of the subcategories are highly correlated (Setiyadi, 2011).

2. Reliability of Listening Test

Reliability refers to whether the test was consistent in its score and gave us an indication of how accurate the test score are (Shohamy, 1985: 70). A test was called reliable if the score gained by the examiners was constant whenever and by whomever the test was conducted. A test did not be a good parameter unless the test was suitable or constant. The test was determined by using Pearson Product Moment which measures the correlation coefficient of the reliability between odd and even number (reliability of half test) in the following formula:

$$r_{xy} = \frac{\sum xy}{\sqrt{(\sum x2)(\sum y2)}}$$

Where:

r_{xy} : coefficient of reliability between odd and even numbers item

x : odd number

y : even number

$\sum x^2$: total score of odd number items

$\sum y^2$: total score of even number items

$\sum xy$: total score of odd and even number

After getting the reliability of half test, the writer used Spearman Bowns Prophecy formula (Hatch and Farhady, 1982247) to determine the reliability of the whole tests, as follows:

$$r_k = \frac{2\,rxy}{1+rxy}$$

Where :

r_k : the reliability of the whole tests

r_{xy} : the reliability of half tests

The criteria of reliability as follows:

0.90 – 1.00   = high

0.50 – 0.89   = moderate

0.00– 0.49   = low

(Hatch and Farhady, 1982: 127)

The listening test was analyzed bu using Spearman Brown Formula to measure its reliability. From the analysis, the result of the computation was 0,98 (see Appendix 4). By considering the criteria of a reliable test, it was concluded that criteria of the test is high. It means that the criteria of the test had a very high reliability.

3.6.3. Level of Difficulty

Level of difficulty related to "how easy or difficult the item was form the point of view of the students who took the test. It was important since test items which were too easy (that all students get right) could tell us nothing about differences within the test population." (Shohamy, 1985: 79).

Level of difficulty was calculated by using the following formula:

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

LD = level 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)

From the result of level difficulty (Appendix 5), the writer found out that four items which were easy. They were items number 3, 4, 15, and 19. Then, there were twenty six items which were satisfied. There were items number 1, 2, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30. The easy items were revised, while the satisfied items were aministered in listening test.

3.6.4. Discrimination power of the Test

Discrimination power refered to "the extent to which the item differenciates between high and how level students on that test. A good item according to this criterion, was one in which good students did well, and bad students failed." (Shohamy, 1985:81)

The formula was:

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

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:

DP   = 0.00-0.20 = poor

DP   = 0.21-0.40 = satisfied

DP   = 0.41-0.70 = good

DP   = 0.71-1.00 = excellent   (Arikunto, 1997:223)

From the result of discrimination power (Appendix 5), it was shown that there were eighteen poor items, ten satisfied items, and two good items. Based on the analysis, it was found that there were seven items omitted (2, 4, 7, 12, 14, 20, 21), eleven items revised (1, 6, 9, 10, 11, 13, 17, 22, 23, 26, 27), and twelve items administered (3, 5, 8, 15, 16, 18, 19, 24, 25, 28, 29, 30). At last, there was 7% of items omitted, 11% of items revised, and 12% of items administered from 30 items. Finally, the writer took 23 items as using for listening test.

3.7. Data Analysis

3.7.1. Questionnaire Scoring System

In analyzing the data from the questionnaire test, the writer got three kinds of data, the learners which used cognitive strategy, metacognitive strategy, and social strategy in learning listening. To find the classification, the writer counted the score of each catagories and found the mean of each category's score; Questions 1-11 were cognitive strategy, question 12-17 were metacognitive strategy, and questions 18-20 were social strategy. After finding each mean score of catagories, the writer classified students in to three kind of strategies by looking at the highest mean of these three catagories.

For example, in the appendix 2 there were some students who had been classified based on their mean score. Student number 1 got the score in questionnaire number 1-11 37 point, and it was devided by 11 and the mean was 3.36. Beside that, the questionnaire number 12-17 he got 14 point, and it was devided by 6 and the mean was 2.33. For questionnaire number 18-20 he got 8 point, and it was devided by 3 and the mean was 2,67. Based on the highest mean from the questionnaire, the writer classified this student into cognitive student.

3.7.2. Listening Scoring System

To find out students listening achievement from the listening test, the writer uses Arikunto's formula in scoring the students' result of the test. The higher score would 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

For example, in appendix 2 there were some results of the listening test. Student number 1 got 17 true items of the test and 6 wrong items of the test. Based on the formula, the writer devided 17 true items with the total of the items 23 and times by 100 and the writer got the score 73,9. Then, from the listening test, the writer got the students' listening achievements. After the learners were classified into

those three kinds of learning strategies in listening based on their highest score of questionnaire answers, then the writer matched the listening achievements of the students with their strategies used in listening in order to find out the influence of the use of learning strategies toward students' achievements in listening

3.8. Hypotheses Testing

The hypothesis testing was used to prove whether the hypothesis propose in this research accepted or not. The hypothesis was analyzed by using *One way ANOVA* of Statistic Package for Social Science (SPSS) windows version 16. The writer used the level of significance 0.05 in which the hypothesis was approved if sign <p. It means that if the p-value was less than or equal to the significant level selected, the effect for the term was statistically significant (Setiyadi, 2006).

Concerning to the concept and theoretical assumption above, the writer decided to formulate a hypotheses as follow: There were fix strategies used by students in listening which influence their listening achievement.

The criteria for accepting the hypothesis were as follows:

If $P_{value} > P_{table}$ The hypothesis is accepted

If $P_{value} < P_{table}$ The hypothesis is rejected

The writer used SPSS to calculate the result whether it was significant or not based on the hypothesis.