III. RESEARCH METHOD

This chapter provides an overview of research design, population and sample, data collecting techniques, steps in collecting data, research instruments, validity and reliability, data analysis, and hypotheses testing 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 researcher used one group and took the data in one time without giving treatment (Setiyadi, 2006: 133). Whereby, in collecting data, the researcher gave two kinds of questionnaires. The first questionnaire (T1) was about learning styles. This was conducted to find out the learners’ style whether they belonged to visual, auditory, and kinesthetic. After that, the second questionnaire was about learning strategies in reading (T2) in order to know which learning strategies used by the learners in learning reading, whether they used cognitive, metacognitive, or social strategy. The design of this research is illustrated as follows:

\[
\begin{array}{c|c}
T_1 & T_2 \\
\hline
\end{array}
\]

T₁ : Learning styles

T₂ : Learning strategies in reading

(Setiyadi, 2006:132)
3.2. Population and Sample

The population of this research was the first grade of SMAN 3 Bandar Lampung in academic year 2014/2015. There were seven classes of the first grade in that school. The number of the learners of each class was about 32 learners. In determining the sample, the researcher used simple random sampling by using lottery. Then, the researcher chose one class as the sample. So those all the first grade classes had the same chance to be the sample. Since the first grade learner in SMAN 3 Bandar Lampung was not stratified class, there was no priority class. 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.

3.3. Data Collecting Techniques

In collecting the data, the researcher used two kinds of questionnaires. There were lists of statements and questions to be answered by learners to measure the learners’ learning styles and the learner’s used of learning strategies in learning English reading as EFL. The questionnaires used were close-ended questionnaires where the answer was limited (Setiyadi, 2006: 54).

3.4. Steps in Collecting the Data

In collecting the data, the researcher used following steps:

3.4.1. Determining the Sample of the Research

In determining the sample, the researcher used simple random sampling by using lottery. Then, the researcher chose one class as the sample.
3.4.2. Conducting the Questionnaire

There were two kinds of questionnaire given to the learners. The first questionnaire was given to learners in an attempt to investigate learners’ learning style. The learners’ answer classified into three types of learning styles such as visual, auditory, and kinesthetic. The second questionnaire was given to get data about the learning strategies used by learners in reading, whether they used cognitive, metacognitive, or social strategy.

3.4.3. Analyzing the Data

After distributing questionnaire tests, the researcher analyzed the answers of the tests. In analyzing the data, the researcher used One way ANOVA. There were three kinds of learning styles, visual, auditory, and kinesthetic style. The styles were compared with the means of the three kinds of learning strategies, cognitive, metacognitive, and social strategies in order to determine whether each main effect and the interaction effect were statically significant. Furthermore, the researcher classified the learners into three types of learning styles, visual, auditory and kinesthetic. After that, the researcher identified which learning strategies in learning English reading of EFL used by the visual learners, auditory learners, and kinesthetic learners.

3.4.4. Making a Report and Discussion of Findings

After having gained all the data, the researcher made a report and discussion on findings of the learning style used by the student in learning English as foreign
language and the way of learners with different learning styles used learning strategies in learning English reading as EFL.

3.5. Research Instrument

It was lists of some statements which were answered by the learners to find out learners’ learning strategies. The research used close-ended questionnaire where the answer was limited (Setiyadi, 2006: 54).

3.5.1. The Questionnaire of Learning Styles

The researcher used Learning Styles Self-Assessment Questionnaire. The questionnaire was conducted in which the learners’ answers were classified into three types of learning styles, visual, auditory, and kinesthetic. It was translated and answered into Indonesian in order to facilitate the learners in understanding the questionnaire. The questionnaire consisted of 30 items. Each item consisted of three possible answers. They had to answer the questions by selecting they thought best describe themselves. Then, after answering the questionnaire the learners added up how many A’s, B’s, and C’s they selected. The researcher classified the learners into three kinds of learning styles best on their highest score of questionnaire answers. The visual learners were measured with the most selected items of A, the auditory learners were measured with the most selected items of B, and kinesthetic learners were measured with the most selected items of C (Victoria and Alan, 2012).
Moreover, the learners were classified into visual learner if they had the characteristics such as preferred information to be presented by using visual aids, required explanations of diagram, graphs, or visual directions, could better understand a news article by reading about it in the paper than by listening to the radio, tended to say “I see what you mean” and “watch how I do it”, took numerous detailed notes, usually neat and clean, when met an old friend tended to say “it was great to see you!”, and remembered things best by writing notes or keeping printed details (DePorter and Hernacky, 1999).

Besides, the learners were classified into auditory learner if they had the characteristics such as could remember more about a subject through the lecture method with information, explanation, and discussion, did better at academic subject by listening to lectures and tapes as opposed to reading textbook, followed oral directions better than written ones, tended to say “listen to, I will explain” and “I hear what you were saying”, when met an old friend tended to say “it was great to hear from you!”, remembered things best by saying them aloud or repeating words and key points, preferred to listen what they were learning, and acquired knowledge by verbalizing lessons to themselves (DePorter and Hernacky, 1999).

Furthermore, the learners were classified into kinesthetic learner if they had the characteristics such as liked to write down or to take notes for visual review, preferred to make posters, physical models, or actual practice and some activities in class, remembered best by writing things down several times, felt very comfortable touching others, hugging, or handshaking, tended to say “you had a
go” or “I know how you feel”, when concentrating most often moved around a lot, fiddled with pens and pencils and touched things, most of the free time was doing physical activity or making things, spoke with their hands and with gestures, and needed to be active and took frequent breaks (DePorter and Hernacky, 1999).

However, if the learners had the equal score of two or three kinds of styles they belonged to the learners who had multiple learning styles. It meant that the learners had two or more dominant characteristics in learning and gaining the information (Victoria and Alan, 2012). For example, if the learners used visual style and auditory style, they had both of visual and auditory characteristics such as preferred information to be presented by using visual aids and could remember more about a subject through the lecture method with information, explanation, and discussion, did better at academic subject by listening to lectures. Moreover, if the learners used visual style and kinesthetic style, they had both of visual and kinesthetic characteristics such as preferred information to be presented by using visual aids and liked to write down or to take notes for visual review, preferred to make posters, physical models, or actual practice and some activities in class. Furthermore, if the learners used auditory style and kinesthetic style, they had both of auditory and kinesthetic characteristics such as could remember more about a subject through the lecture method with information, explanation, and discussion, did better at academic subject by listening to lectures and liked to write down or to take notes for visual review, preferred to make posters, physical models, or actual practice and some activities in class.
3.5.2. The Questionnaire of Learning Strategies

In accordance with Setiyadi (2011), the questionnaire was given to the learners adapted from “Language Learning Strategy Questionnaire”. The researcher used Language Learning Strategy Questionnaire or the LLSQ to find out learners’ learning strategies in reading. It was translated and answered into Indonesian in order to facilitate the learners in understanding the questionnaire. In the LLSQ learners were provided with 20 items. There were three kinds of strategies in LLSQ, namely: cognitive strategy, metacognitive strategy, and social strategy. Cognitive strategies in reading were measured with item nos. 1-11, metacognitive strategies were measured with item nos. 12-17, and social strategies were measured with item nos. 18-20.

In the questionnaire learners were given instruction; learners were asked to write their response to statements in the LLSQ on the separate answer sheet attached to the questionnaire. They should write their response (1, 2, 3, 4, or 5) that told how true of them that statement was. Number 1 meant that it was never or almost never true of them, number 2 was usually not true of them, number 3 was somewhat true of them, number 4 was usually true of them, and number 5 was 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. Besides, the learner who belonged to the cognitive category might include all activities that take place in the brain in order to acquire a foreign language. That
category might include intelligent guessing, looking for patterns from sentences, inferencing, association, summarizing, grouping in the mind, deducting, imagery, and other mental processes.

Then, the learner who belonged to metacognitive category might include all activities such as planning for learning, thinking about the learning process as it was taking place, monitoring of one’s production or comprehension, evaluating learning after an activity was completed, and using a graphic organizer, such as a concept map to identify the main concepts and link them together using lines or similar to a spider web.

Furthermore, the learner who belonged to social category might include all activities which were related to social-mediating activity and transacting with others, cooperation and question for clarification, joining a group, giving the impressions- with a few well- chosen words- that you could speak the language, and counting on friends in learning process.

3.6. Validity and Reliability

3.6.1. Validity

One of criteria that determined the quality of a good instrument was its validity. According to Fraenkel and Wallen (1991: 151), validity was “the appropriateness, meaningfulness, correctness, and usefulness of the inferences a researcher makes”. It meant 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 at least two validity should be fulfilled; content and construct validity.

The first questionnaire was Learning Styles Self-Assessment Questionnaire. To investigate the validity of the questionnaire items, the researcher used interator validity developed by Setiyadi (2006). It referred to the method of judging the level of the validity by three reviewers in topics discussed and having strong backgrounds of either Teaching English as Foreign Language or research. There were three majors point on where the questionnaire was going to be validated. There were Face validity, Content Validity, and Construct Validity. In the questionnaire, Face Validity referred to how well the questionnaire was comprehended by the respondents. Then, Content Validity represented the level of representativeness of each item proposed in the questionnaire. It also represented the level of the appropriateness of the questionnaire toward students in their level of comprehension. On the other hand, Construct Validity referred to the formation of the questionnaire proposed. It also made students easier to understand each items orderly arranged in three variables investigated.

The validity of the questionnaire could be seen from content validity. It meant that between the items of the questionnaire and the theory of the expert must be the same. The questionnaire consists of 30 items in multiple choice questions. The questionnaire items were related to the theory proposed by DePorter and Hernacky (1999) about learning styles. The questionnaire items contain of the characteristics
of visual, auditory, and kinesthetic learners. The content validity of this questionnaire can be seen as follow:

<table>
<thead>
<tr>
<th>No</th>
<th>Aspect of Questionnaire</th>
<th>Number Items (1-30)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Visual style</td>
<td>Items selected of A</td>
</tr>
<tr>
<td>2.</td>
<td>Auditory style</td>
<td>Items selected of B</td>
</tr>
<tr>
<td>3.</td>
<td>Kinesthetic style</td>
<td>Items selected of C</td>
</tr>
</tbody>
</table>

Besides that the researcher used *inter-rater* to prove that the content, face, and construct were suitable with the questionnaire items. The reviewers were two lectures of University of Lampung and an English teacher of SMAN 3 Bandar Lampung. The reviewers were asked to rate the 30 survey items on a 2-point rating scale ranging from 1 (important) to 2 (not important); to internally validated and examined the item assembled and its relevance to the research literature.

Based on the result of validity judgment (see Appendix 7), the item questionnaires were modified according to the feedback acknowledged by the experts to make the items simpler and shorter in order to make the research participants to comprehend well. For examples, the direction was “*Lingkari atau beri tanda silang pada salah satu jawaban yang benar-benar mewakili diri anda*”. Then, the researcher changed the direction into “*Kuesioner ini bertujuan untuk mengetahui apakah anda termasuk dalam orang visual, orang auditory, atau orang kinestetik. Jawablah dengan jujur seberapa benar pernyataan tersebut mendeskripsikan anda. Lingkari atau beri tanda silang pada salah satu jawaban yang benar-benar mewakili diri anda. Jangan menjawab apa yang anda pikir harus anda jawab, atau apa yang orang lain jawab. Tidak ada jawaban yang benar dan salah pada*”.
pernyataan ini”. After that, the reviewers agreed if the questionnaire had good contain validity. The contents already related to the purpose of the questionnaire, but there were some statements revised, for example on number 2 option C, it was “mengikuti penciuman atau dengan menggunakan kompas”. Then, it was changed into “mengikuti naluri atau dengan menggunakan kompas”. Besides, the question number 4 should be revised. It was “jika mengajarkan sesuatu yang baru kepada orang, saya cenderung untuk”. Then, it was revised into “jika menjelaskan sesuatu yang baru kepada orang, saya cenderung untuk”. Overall, there were no deleted items. It assumes that the questionnaire test is valid.

Besides, the second questionnaire that was employed in the research was Language Learning Strategy Questionnaire or the LLSQ to find out learners’ learning strategies in reading. The Questionnaire used was LLSQ developed by Setiyadi (2011), it had been standardized so it had good validity. The content validity of the LLSQ was partly determined by professional judgment. There were five language teaching experts matched the LLSQ items, with agreement 94%, against entries in three language learning category (Setiyadi, 2011).

3.6.2. Reliability

Reliability refers to whether the test gives us an indication of how accurate the test score were (Shohamy, 1985: 70). However, every item in learning styles questionnaire was analyzed to make sure that the items consists of good unity. Learning styles score was made up of 30 items that refer to visual, auditory, and kinesthetic style. To find whether the test was reliable or not, the writer used
Cronbach Alpha. The alpha ranges between 0 and 1. The higher the alpha, the more reliable the questionnaire would be (Setiyadi, 2006:167). And for knowing the classification of reliability, the following scale was used:

- Between 0.800 to 1.00 = very high reliability
- Between 0.600 to 0.800 = high reliability
- Between 0.400 to 0.600 = moderate reliability
- Between 0.200 to 0.400 = low reliability
- Between 0.000 to 0.200 = very low reliability

The result of the computation was .633 (see Tabel 2). It meant that the questionnaire has high reliability.

**Tabel 2: Results of Cronbach’s Alpha**

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>Cronbach's Alpha Based on Standardized Items</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.633</td>
<td>.602</td>
<td>30</td>
</tr>
</tbody>
</table>

Moreover, 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 analyzed of metacognitive, deep level cognitive, and surface level cognitive categories in speaking, listening, reading, and writing showed that the items of the subcategories were highly correlated (Setiyadi, 2011).
3.7. Data Analysis

In analyzing the data, the researcher used One way ANOVA. Setiyadi (2006) stated that One way ANOVA could be used to compare the mean of three data in the same time. One way ANOVA was used to compare three data or more and they were from the same sample. There were three kinds of learning styles, visual, auditory, and kinesthetic style. The mean of each style was compared with the means of the three kinds of learning strategies, cognitive, metacognitive, and social strategies in order to determine whether each main effect and the interaction effect were statistically significant.

Moreover, from the first questionnaire test, the researcher got three kinds of data, the learners which belonged to visual learners, auditory learners, and kinesthetic learner. Then, from the second questionnaire test, the researcher got three kinds of data, the learners which used cognitive strategy, metacognitive strategy, and social strategy in learning reading. The learners were classified into both those three kinds of learning styles and learning strategies in reading based on their highest score of questionnaire answers.

After getting the data, the researcher compared each mean of the data. Then, the researcher analyzed which of learning strategies in reading that the learners belonged to, whether they belonged to the visual learners, auditory learners, or kinesthetic learners. To determine whether each main effect and the interaction effect were statically significant, the researcher compared the p-value for each term to the significant level to assess the hypothesis. A significant level of 0.05
works well. If the p-value was larger than the significant level selected, the effect was not statistically significant, but if the p-value was less than or equal to the significant level selected, the effect for the term was statistically significant.

3.8. Hypotheses Testing

The hypothesis testing was used to prove whether the hypotheses proposed in this research were 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 meant 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).

1. Ho: There are no fixed types of learners’ learning styles at the first grade of SMAN 3 Bandar Lampung.
   Ha: There are types of learners’ learning styles at the first grade of SMAN 3 Bandar Lampung.

2. Ho: There are no fixed types of reading learning strategies used by learners with visual learning style, auditory learning style, and kinesthetic learning style at the first grade of SMAN 3 Bandar Lampung.
   Ha: There are types of reading learning strategies used by learners with visual learning style, auditory learning style, and kinesthetic learning style at the first grade of SMAN 3 Bandar Lampung.
The criteria for accepting the hypothesis were as follows:

If \( P_{\text{value}} > P_{\text{table}} \) \( Ha \) is accepted

If \( P_{\text{value}} < P_{\text{table}} \) \( Ho \) is accepted

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