

CHAPTER III

METHODOLOGY

This chapter presents methodology of this study which has been introduced in Chapter I. In detail, this chapter covers the argument of selecting the research method, population and sample, instruments of the study, the process of collecting the data, and data analysis.

3.1 Research Methodology

In line with the purpose of this study, descriptive analysis method and quantitative approach in form of correlational research and ex-post facto design were used in this study. Borg *et al.* (2003) stated that correlational study is determined to find out whether and to what degree a relationship exists between two or more variables.

According to Cresswell (2004), correlational study can be called as descriptive study since the data collection determines to what degree the relationship appears and describes the existing condition of the sample (Fowler 1988 in Cresswell 1994). The degree of relationship is expressed as a correlation coefficient.

Besides, according to Hatch and Farhady (1982:27), correlational study is commonly used in ex-post facto design. This design is used when the writer does not control over the selection and manipulation of independent variable as treated in experimental design.

Thus, this study only investigates the degree of relationship between two variables, students' language learning strategies (SILL scores) as independent variable (X) and their English proficiency (WJEPT scores) as dependent variable (Y) and the type of language learning strategies used by the students.

3.2 Population and Sample

The third grade students of SMK Negeri 2 Baleendah, who enrolled in Academic Year 2009/2010, were chosen as the population in this study since they had taken the WJEPT program. In addition, this school offers 8 classes from four departments: Tata Kecantikan, Tata Busana, Restoran, and Kimia Industri. The writer chose this school because it applied WJEPT program and there was accessibility to conduct the research.

All third grade students have a preparation before taking the WJEPT. First, the students followed Try-out 1 and 2 programs as the exercises. Having got scores from each test, students discussed the material with their teacher during regular English lesson. This activity was taken for a month for the students before taking the WJEPT program.

Borg *et al.* (2003) stated that 30 participants for a correlational study are generally considered to be minimal for getting sample size. Furthermore, sampling technique used in this study is cluster sampling which groups are randomly selected. Three classes, consisted of 62 third grade students from 3 Busana 2, 3 Restoran 2, and 3 Kimia Industri, were chosen as the sample.

3.3 Research Instruments

Three types of instruments were used in this study. The first was the SILL (Strategy Inventory for Language Learning), version 7.0, designed by Oxford (1990). The second instrument, used in determining the proficiency of the samples, was the West Java English Proficiency Test or WJEPT. The third was interview which was used to investigate further the language learning strategies used by the samples.

3.3.1 Questionnaire

In order to measure strategy use, Oxford's (1990) Strategy Inventory for Language Learning (SILL) was used in this study. The SILL was developed by Rebecca Oxford as an instrument which is designed to identify the strategies that employed by students in learning English. There are two versions: one for native speakers of English (80 items) and another for learners of English as a second or foreign language (50 items).

Table 3.1 The Categories and the Sample Item in the SILL

	Categories	Item Number	Sample Item
A	Memory Strategies	1 to 9	I use new English words in a sentence so I can remember them.
B	Cognitive Strategies	10 to 23	I say or write new English words several times.
C	Compensation Strategies	24 to 29	I read English without looking up every new word.
D	Metacognitive Strategies	30 to 38	I pay attention when someone is speaking English.
E	Affective Strategies	39 to 44	I try to relax whenever I feel afraid of using English.
F	Social Strategies	45 to 50	I ask questions in English.

The version of the SILL used in this study was for students who learn second or foreign language. As shown in Table 3.1, it consists of 50 items covered the four language skills: reading, writing, listening, and speaking, which Oxford (1990) divides into six categories.

The SILL uses a 5 Likert-scale for which the learners are asked to show their response, ranging from 1 (Never or almost never true of me) to 5 (Always or almost always true of me), to a strategy description such as "I try to find patterns in English." Furthermore, the responses were classified based on the criteria for evaluating the frequency of strategy use formulated by Oxford as follow:

Table 3.2 The Key to Understanding Students' Averages

Level	Explanation	Average
Very High	Always or almost always used	4.5 to 5.0
High	Usually used	3.5 to 4.4
Medium	Sometimes used	2.5 to 3.4
Low	Generally not used	1.5 to 2.4
Very Low	Never or almost never used	1.0 to 1.4

(Oxford, 1990, p. 300)

The SILL was chosen for this study because it is "perhaps the most comprehensive classification of learning strategies to date" (Ellis, 1994 cited in Griffiths, 2004) and has been widely used. Moreover, it has been checked for reliability and validity in multiple ways (Oxford, 1990:255).

In this study, the questionnaire was translated into Indonesian and fitted into Indonesian context to make it easier for the respondents to answer the questionnaire. Subsequently, it was tried out to the population of non sample to

know its validity and reliability. This was due to the accuracy of determining the type of students' strategies. By using this questionnaire, the type of language learning strategies and the level of frequency used by respondents could be gained.

3.3.2 English Proficiency Documentary

In this study, students' WJEPT scores were chosen to know their English proficiency level. West Java English Proficiency Test (WJEPT) is regional TOEIC test which is sponsored by Regional Office of Education and developed by Vocational English Teachers Association (VETA) in province level.

The WJEPT is on the fourth step of TOEIC-based teaching and learning employed by vocational schools in West Java, which is placed after placement test, performance test, and periodical test. It is aimed to monitor the progress of students' learning achievement, to be a feedback for the effectiveness of teaching program and at the same time it is used to select students to get scholarship for taking international TOEIC test.

Table 3.3 The Set of WJEPT Test Items

PART 1	Listening (Comprehension, pictures)
PART 2	Listening (Comprehension, question – response)
PART 3	Listening (Comprehension, short conversation)
PART 4	Listening (Comprehension, short talks)
PART 5	Reading (Comprehension, incomplete sentences)
PART 6	Reading (Comprehension, error recognition)
PART 7	Reading (Comprehension)

Therefore, WJEPT has the same form with Test of English International Communication (TOEIC). The skills tested are Listening Comprehension and Reading Comprehension, each of them consists of 100 questions. In accordance with the description of test-items, the detail set of items is as shown in Table 3.3.

The score of WJEPT is formed from two sections, Listening and Reading Comprehension. It can be five or ten points for each correct answer and no penalty for incorrect answers. The maximal score is 980, 495 for Listening and 485 for Reading. Furthermore, based on vocational school curriculum, the score is categorized into three levels as follows:

Table 3.4 The Level of English Proficiency

Level of Proficiency	Score
Novice level	(10 – 250)
Elementary level	(255 – 400)
Intermediate level	(405 – 600)

3.3.3 Interview

The interview was used to investigate more information about the language learning strategies used by the students both inside and outside classroom. In order to gain the purpose, semi-structured interview was used in this study. According to Oxford (1990), semi-structured interview are very useful for gathering information on students' strategies. By using open-ended questions, complete and deep data can be gained.

In this study, three students were interviewed by the writer. Each student represented each level of WJEPT score, the highest, the moderate, and the lowest

WJEPT score. They were asked in regard to seek information on their learning strategies. The time and place of interview sessions were determined by the students.

3.4 Data Collection

3.4.1 Administering Try-Out Test

Try-out test was distributed to ten students of non-sample in order to test the validity and reliability of the SILL. The data was conducted in the fourth week of April 2009. During test, some students asked for clarification of several statements. This may be happened because there were confusing statements or several incomplete statements appear. The writer clarified those statements directly. As a result, the incomplete statements do not influence on the validity and reliability of the SILL.

3.4.2 Administering the SILL (Strategy Inventory for Language Learning)

The data on the SILL questionnaire were conducted after the students had taken the UAS (Ujian Akhir Sekolah) on 4th until 6th of May 2009. Therefore, 4 from 71 samples that would be the respondent could not attend the test because they went home soon after the UAS. Thus, the revised questionnaire was administered only to 67 respondents which came from 3 Busana 2, 3 Restoran 2, and 3 Kimia Industri. A brief explanation of the purpose of the study was given. The respondents were informed that their responses to the questionnaires would have no effect on their grades. The questionnaires were collected after they had completed them.

Of the 67 questionnaires, 5 were discarded: three had no name and two were incomplete. As a result, only 62 questionnaires were subjected to statistical analysis.

3.4.3 Collecting English Proficiency Level Documentary

Since SMK Negeri 2 Baleendah was chosen as head of South of Bandung district, the students' language learning strategies scores were obtained from English teachers of the school. The data was gained in May 13th, 2009.

3.4.4 Conducting the Interview

In order to gain more information about the language learning strategies use of the three students' responses, the interview were implemented by using recorder in cellular phone. The interview sessions were held on June 15th, 2009.

3.5 Data Analysis Techniques

In a study, selecting an appropriate research method and appropriate statistical procedure are important before analyzing the data. In this study, some requirements have to be fulfilled both in using the questionnaire and the Pearson Product Moment Correlation test which is used to find out the correlation coefficient between the variables.

3.5.1 Testing the Validity and Reliability of Questionnaire

3.5.1.1 Testing the Validity

To have a questionnaire valid to the research, there should be a validity test treated. According to Hatch and Farhady (1982), the validity test is conducted to test the accuracy of each item of the statements in the questionnaire. Moreover,

the Pearson Product Moment Correlation can be used to analyze the validity of each item in the instrument. The formula is stated as follows:

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

(Hatch & Farhady, 1982)

Where:

- r_{xy} : correlation coefficient between x and y variables
- n : the total number of the respondents
- x : the item tested
- y : the total score per respondent.
- xy : is the sum of x and y.

The item is valid if the r_{xy} value is higher than r critical (Coolidge, 2000).

The examples of item validity calculation are shown in Appendix.

SPSS version 17 for windows was used to compute the validity of the questionnaire items in this study. The critical value for r at 0.05 level with the degree of freedom N-2 (18) was 0.468. The result of the validity testing can be seen in Appendix.

3.5.1.2 Testing the Reliability

The degree of reliability of an educational measure is usually expressed by a correlation coefficient (Hatch and Farhady, 1982). Furthermore, a measure is considered reliable and practical for most research if its reliability coefficient is .80 or higher with the score is at least 1. According to Hatch and Farhady (1982),

Kuder-Richardson formula 20 (Cronbach's α coefficient) can be used to calculate the reliability of the instrument. The formula is stated below:

$$KR - 20 r_k = \frac{K r_{ii}}{1 + (K - 1) r_{ii}}$$

(Sugiyono, 2003)

Where:

- r_k : (Cronbach's α coefficient) reliability of the full test
 K : number of items
 r_i : the mean item correlation

In order to know the reliability level, the result of the calculation is positioned based on the table below:

Table 3.5 The Reliability Level Based on the Alpha Value

No	Alpha	Reliability level
1	0.00 – 0.20	very low
2	0.20 – 0.40	low
3	0.40 – 0.60	moderate
4	0.60 – 0.80	high
5	0.80 – 1.00	very high

(Sugiyono, 2003)

Having been calculated by using SPSS version 17 for windows, the value of coefficient alpha was equal to 0.961. While the critical value for r at 0.05 level with the degree of freedom $N-2$ (18) was 0.374. It indicated that the instrument was considered reliable since $r_{observed}$ is greater than r_{table} . Moreover, since it was higher than 0.80, the instrument could be regarded as highly reliable. The detailed data can be seen in Appendix.

3.5.2 Required Tests for Data Analysis

In this study, Pearson Product Moment Correlation was used to find the correlation between students' SILL scores and WJEPT scores. However, some requirements had to be fulfilled to employ Pearson correlation. After having continuous variables, the data gained from the two variables must be normally distributed and the relationship must be linear between them. The results of the analyses are explained below.

3.5.2.1 Test of Normality

In correlational study, test of normality is used to determine whether or not the data is normally distributed (Hatch and Farhady, 1982). If the data is normally distributed, Pearson Product Moment can be used for testing the correlation. Additionally, normal distribution is the evidence for generalizing the data from the sample into a population.

To see whether the scores of both SILL and WJEPT scores are normally distributed or not, the writer utilized the Kolmogorov-Smirnov formula using SPSS version 17 for windows. If the data is normally distributed, it means that the sample represent the whole population. On the contrary, if it is not, it only works at the sample. The hypotheses for SILL and WJEPT normal distribution scores are as follows:

Ho: the SILL and WJEPT scores are normally distributed

Ha: the SILL and WJEPT scores are not normally distributed

Still, SPSS version 17 for Windows was used to observe the normal distribution of the SILL and the WJEPT data. It was found out that both of the values of the two variables are higher than 0.05; the probability (Asymp Sig.) of the SILL scores is 0.302 and the WJEPT scores is 0.641. Hence, these indicate that the null hypothesis is accepted; the two variables are normally distributed. The result of the test is presented in the Appendix.

After having a normal distribution, the next step was analyzing the linearity of the two variables.

3.5.2.2 Test of Linearity

Test of linearity is used for describing and measuring the relationship between two variables (Creswell, 2004). A linear relationship shows a straight regression line through the points on the scatter plot. Furthermore, if both variables are linear, the Pearson Product Moment can be used to find the correlation.

In order to find whether the correlation between two variables is linear or not, regression analysis was conducted based on the functional or causal relationship of one independent and one dependent variable. In this study, the formula used to find the regression equation is:

$$Y' = a + bX$$

Where:

- Y' : dependent variable
- a : fix coefficient
- b : coefficient regression

The result of the computation by SPSS version 17 for Windows can be estimated that the equation for the regression analysis is $Y' = -64.186 + 111.705X$. It indicates that the regression of WJEPT scores to SILL scores is considered linear. The complete calculation of the linearity of regression can be seen in the Appendix.

3.5.3 Investigating the Correlation

Having fulfilled the requirements for using Pearson Product Moment Correlation, the next step was to find out the relationship between the students' SILL scores and the WJEPT scores with help SPSS version 17 for windows. The steps are as follows.

3.5.3.1 Finding out the Value of Correlation Coefficient between the Two Variables

When the distribution of the data is normal, a parametric statistics using Pearson Product Moment Correlation is used to calculate the data. The formula is:

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

(Hatch & Farhady, 1982)

Where:

r_{xy} : correlation coefficient between x and y variables

n : the total number of the respondents

x : the item tested

y : the total score per respondent.

xy : is the sum of x and y .

Furthermore, the next step is consulting the degree of relationship to the r coefficient interpretation as follows:

Table 3.6 The r Coefficient Correlation

No	Alpha	Classification	Correlation
1	0.00 – 0.199	slight	correlation so small as to be negligible
2	0.20 – 0.399	low	weak
3	0.40 – 0.599	moderate	substantial
4	0.60 – 0.799	high	marked
5	0.80 – 1.00	very high	very strong

(Sugiyono, 2003)

After getting the value of r , testing hypothesis is conducted to determine whether the correlation coefficient is significant or not whenever:

$r_{counted} > r_{table}$; H_a is accepted and H_o is rejected

$r_{counted} < r_{table}$; H_a is rejected and H_o is accepted

To test the proposed hypothesis, the $r_{counted}$ is compared to the level of r_{table} at the level of significance = 0.05 and the degrees of freedom = $N-2$. If the $r_{counted}$ is greater than r_{table} , the null hypothesis can be rejected and the positive hypothesis is accepted.

3.5.3.2 Calculating the Contribution of Language Learning Strategies

This calculation is aimed to know the contribution of language learning strategies scores to English proficiency scores variable. For this purpose, the percentage is determined by using the formula below:

$$CD = r^2_{xy} \times 100\%$$

Where:

CD : Coefficient of Determination

r^2_{xy} : squared coefficient of correlation

3.5.4 Categorizing Students' Language Learning Strategies

The SILL data were analyzed by using Likert-scaled formula. Firstly, the 50-items on the SILL were classified into six categories: memory (Part A), cognitive (Part B), compensation (Part C), metacognitive (Part D), affective (Part E) and social strategies (Part F). The students' responses were then counted by changing their answer into the basis of five-point Likert scale. Subjects who chose "never true of me" gained 1, "usually not" gained 2, "sometimes" gained 3, "usually" gained 4, and "always" gained 5.

Subsequently, each item score of samples were tabulated based on categories by using the Microsoft Office Excel 2003. Following this, both of the average score of each part on the SILL and the overall average were calculated. Finally, both of the average scores of each part on the SILL and the overall average were interpreted based on the types and the frequency of strategies use. The average score of each part described student's strategies that were frequently used, while the overall average described the frequency of strategies use in learning English. The following key help to interpret the averages: 3.5 to 5.0, high use; 2.5 to 3.4, medium use; and 1.0 to 2.4, low use (Oxford, 1990). (See Table 3.2)

Having found the type of language learning strategies of each student, the next step is finding out the type of language learning strategies which is mostly used by the students. By comparing the mean of each students using SPSS version 17 for windows, the highest mean of certain strategy is considered as the most frequently strategy used by students.

3.5.5 Interview Data Analysis

Data collected from interview were analyzed by using descriptive qualitative analysis. Three respondents participated in the interview consist of students who had the highest, the average, and the lowest WJEPT score. This analysis was meant to find their language learning strategies deeper.

By combining descriptive method and quantitative approach, valid and sufficient data which were required in answering the research questions and accomplishing the purpose of the study could be gained.

Furthermore, the findings and discussion of the data is elaborated and discussed in Chapter IV.