CHAPTER III

METHODOLOGY

This chapter discusses the research methodology. It provides the argument of selecting research methodology, population and samples, research instruments, the process of collecting data, and the data analysis.

3.1. Research Methodology

This study applied a descriptive method with quantitative approach. The descriptive method is one of the research methods which deals with describing the real phenomena. It is supported by the opinion of Sudjana and Ibrahim (1989) as cited by Siswanto (1996). He said that descriptive study is the study which tries to investigate and describe the existing phenomena, events, condition, and so forth. It means descriptive study raises factual issues.

Arikunto (2002) affirmed that a study which attempts to explain or describe what happen in the present and in the past is called descriptive study. He puts the types of the descriptive study such as causal-comparative study, case study, and correlation study. This statement informs that correlation study is categorized as a descriptive one. Since this study attempts to find the correlation between the students' language learning strategies and the students' West Java English Proficiency (WJEPT) scores, and also explains the language learning strategy used by the students, this study belongs to descriptive study.

Furthermore, the research design used in this study is ex-post facto design. Syamsudin et al (2007) stated ex-post facto design is generally employed in correlation and causal-comparative study. He further explained that ex-facto design is a research design in which the variables observed in a research do not have any researcher's treatment and manipulation since the observed variables have happened before the research is conducted. Since there is no treatment and manipulation given to the variables observed in this study, the ex-facto design is eligible to apply in this study.

3.2. Population and Sample

Population is the total number of subjects or objects that are studied in a research (Sugiyono, 2005). The population in this study is the twelfth grade students who enrolled in Academic Year 2010/2011 in a state vocational school in Bandung. The number of the population was 420 students who were spread in four majors: welding engineering, machinery design engineering, computer network engineering, and machine engineering. They were selected as the population of this study since they had taken West Java English Proficiency Test (WJEPT) and also they were accessible to be chosen as the population for this study.

Sample is a part of population. Nugroho (2005) stated that the minimum sample of correlation study is thirty subjects or objects. Furthermore, Arikunto (2002) added that the minimum sample for correlation study is between 20% up to 25% of the population. Thus, the number sample used in this study is 105 students

which means 25% of 420 students. The sample came from four different classes. Each class represented each major in the school where this research was conducted. The selected sample in this study was based on cluster sampling technique. The cluster sampling technique is the technique for taking a research sample in which groups, not individuals, are randomly selected.

3.3. Research Instruments

This study employed three kinds of instrument as the tool for collecting the needed data. Those instruments are questionnaire, WJEPT scores document, and interview. Each instrument is explained as follow.

3.3.1. Questionnaire

The questionnaire used in this study was Strategy Inventory for Language Learning (SILL) version 7.0 which was constructed by Oxford (1990). The SILL version 7.0 is self-reporting questionnaire which is designed for the learners who learn English as a second or foreign language. It contains 50 questions which cover four language skills: listening, reading, speaking and writing. Those questions are intended to identify the strategies which are employed in learning English language.

The SILL questionnaire was firstly translated into Indonesian language and adjusted to Indonesian context for avoiding misconception when the respondents answered the questions since English is a foreign language for the respondents of this research. The translation of the SILL questionnaire was necessary because the fact shows that mostly vocational students are predicted in

the elementary and novice level of English proficiency (see the background of this study in Chapter 1). The questions provided in the questionnaire are divided into six categories: memory strategies, cognitive strategies, compensation strategies, metacognitive strategies, affective strategies, and social strategies. The sample questions of each strategy are displayed in the table below.

Table 3.1. The Categories and the Sample Question Provided in the SILL

Categories		Item Numbers	Sample Questions
A	Memory Strategies	1 to 9	I use rhyme to remember new English words. (*Saya menggunakan ritme/alunan musik untuk mengingat kata baru dalam bahasa Inggris*.)
B	Cognitive Strategies	10 to 23	I use the English words that I know in different ways. (*Saya menggunakan kata-kata berbahasa Inggris dalam berbagai macam situasi*.)
C	Compensation Strategies	24 to 29	To understand unfamiliar English words, I make guesses. (*Saya berusaha menebak arti kata-kata bahasa Inggris yang masih asing bagi saya dari konteks atau situasinya. Misalnya saya tidak mengetahui arti kata* autumn, *tetapi saat membaca kalimat* Japan has four seasons: summer, autumn, winter, spring. *Lalu saya menebak kalau* autumn *adalah nama salah satu musim*.)
D	Metacognitive Strategies	30 to 38	I notice my English mistakes and use that information to help me do better. (*Saya belajar dari kesalahan yang saya lakukan ketika mempelajari bahasa Inggris dan menjadikannya pendorong untuk belajar lebih baik lagi*.)
E	Affective Strategies	39 to 44	I talk to someone else about how I feel when I am learning English. (*Saya mengungkapkan perasaan saya pada orang lain jika mempelajari bahasa Inggris. Misalnya pada guru, teman, orang tua, atau yang lainnya.*)
F	Social Strategies	45 to 50	I practice English with other students. (*Saya mempraktekkan bahasa Inggris saya dengan teman-teman yang lain*.)

Each question in the SILL questionnaire uses 5 Likert-scale ranging from 1 (never or almost never use the strategy) to 5 (always or almost always use the strategy). The scale represents the frequency of the language learning strategies which are employed by the language learners. Then, the students' responses were classified based on the criteria proposed by Oxford (1990) to know the frequency level of the employment of language learning strategies.

Table 3.2. The Frequency Level of the Use of Language Learning Strategies

Level	Explanation	Average
High	Usually used and always or almost always used	3.50 – 5.00
Medium	Sometimes used	2.50 – 3.49
Low	Generally not used and never or almost never used	1.00 – 2.49

(Oxford, 1990)

The SILL questionnaire was used in this study since its reliability and its validity had been tested in multiple ways by Oxford (1990). It is also acknowledged by Ellis (1994) as the most comprehensive classification of language learning strategies to date. Thus, it is not a queer fact if the SILL questionnaire is often used by the language scholars as one of their research instruments.

3.3.2. English Proficiency Documentary

This instrument is aimed to gain the data about the students' level of their English proficiency which is shown by their WJEPT scores. WJEPT is a regional English proficiency test which is designed by Vocational English Teacher Association (VETA) and has been approved by Education Department of West

Java since 2006. Thus, WJEPT is regionally standardized test for measuring the vocational students' English proficiency in West Java province.

WJEPT has similar format to the format of Test of English as International Communication (TOEIC). It provides 100 questions which are divided into two main sections: listening and reading section. The listening section has four parts namely pictures, questions-response, short conversation, and short talk. Meanwhile, the reading section has three parts namely incomplete sentence, error recognition, and reading comprehension.

The students' WJEPT scores were categorized based on the criteria which were established by the Vocational English Teacher Association (VETA) to determine the students' English proficiency level. The level of English proficiency is classified into three levels as shown in the table below.

Table 3.3. The Category of Level of English Proficiency

Level of Proficiency	Score
Novice Level	250 - 305
Elementary Level	306 - 450
Intermediate	451 - 690

(Document of MGMP, 2010)

3.3.3. Interview

The interview is purposed to seek the deeper information about the language learning strategies which are employed by the students both inside and outside the classroom. Semi-structured interview was applied in this research since it provided large probability to get more detailed data. It is in line with the

statement of Arikunto (2002) who said that semi-structured interview enables the researcher to gain complete and deep information of the studied variables.

Three respondents were asked to be interviewees. Each of the interviewees placed different levels of their WJEPT score: novice, elementary and intermediate level. The interview process was held on January 18 and 19, 2011.

3.4. Data Collection

To collect the needed data, some research procedures had been taken. Those research procedures were administering try-out test, administering SILL (Strategy Inventory for Language Learning), collecting English proficiency level documentary, and conducting the interview. Each of the research procedures is explained shortly as follow.

3.4.1. Administering Try-Out Test

The try-out test was given to thirty students of non-respondent for examining the validity and the reliability of the SILL questionnaire. It was also intended to know whether or not the statements provided in the questionnaire were easy to understand by the students. The try-out process was conducted on December 2th 2010.

3.4.2. Administering SILL (Strategy Inventory for Language Learning)

After the validity and the reliability of the SILL questionnaire had been tested, the fixed SILL questionnaire was distributed to the respondents of this research. 105 students who were spread in the major of welding engineering,

machine engineering, machinery design engineering, and computer network engineering participated in the process of collecting the data about the frequency of the employment of language learning strategies. Those students were asked to response each statement in the questionnaire based on what they had experienced during they learned English language. It was conducted after the students had finished their class. The process of this data collection happened on December 17 and 18, 2010.

3.4.3. Collecting English Proficiency Level Documentary

The data of the students' English proficiency level were obtained from the English teachers who teach the twelfth grade in the school where this study took place. The document of the students' English proficiency level was completely collected four weeks after the WJEPT test was held (December 20, 2010). The data of the students' English proficiency level can be seen in appendix.

3.4.4. Conducting the Interview

Conducting the interview was intended to dig more detail information about the use of language learning strategies which were employed by the students both inside and outside the classroom. The interview process was conducted after the students finished their class. Three selected students who had different English proficiency level participated in the interview session. All the students' answers in the interview process were recorded by using camera. The result of the interview can be seen in appendix.

3.5. Data Analysis Techniques

In conducting a research, some statistical steps are naturalistically required to take for examining the validity and the reliability of the instruments used in the study. It is absolutely intended to have accurate data which are needed in this research. Thus, testing the validity and the reliability of the questionnaire, one of the instruments used in this study, was done for getting trustable data. It was purely done for having accurate data analysis. All these statistical procedures were computed using SPSS 16.0.

3.5.1. Testing the Validity of the Questionnaire

Testing the validity of the questionnaire means examining the accuracy of each statement provided in the questionnaire (Sugiyono, 2006). It is needed to conduct since the validity of the questionnaire will determine the validity of the expected data in this research. The validity of the questionnaire can be tested by employing the formula of Pearson Product Moment Correlation. The formula is served as follow.

$$r = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{N\sum X^2 - (\sum X)^2}\sqrt{N\sum Y^2 - (\sum Y)^2}}$$

(Sugiyono, 2007)

Where:

r = correlation coefficient

x = score of each item

y = total score of each respondent

n = number of respondent

The statements in the questionnaire can be said as valid statements if the value of r_{xy} is higher than r_{table} (Sugiyono, 2006; Nugroho, 2005). In this study, the value of r_{table} in α 0.05 with degree of freedom N-2 was 0.361. The result of the questionnaire validity testing is displayed in table 3.4.

Table 3.4. The Questionnaire Validity

Question No.	**r_{xy}**	**r_{table}**	**Result**
1	0.472	0.361	Valid
2	0.528	0.361	Valid
3	0.373	0.361	Valid
4	0.469	0.361	Valid
5	0.403	0.361	Valid
6	0.332	0.361	Valid
7	0.444	0.361	Valid
8	0.491	0.361	Valid
9	0.650	0.361	Valid
10	0.449	0.361	Valid
11	0.561	0.361	Valid
12	0.512	0.361	Valid
13	0.395	0.361	Valid
14	0.434	0.361	Valid
15	0.511	0.361	Valid
16	0.461	0.361	Valid
17	0.381	0.361	Valid
18	0.459	0.361	Valid
19	0.513	0.361	Valid
20	0.526	0.361	Valid
21	0.533	0.361	Valid
22	0.349	0.361	Valid
23	0.503	0.361	Valid
24	0.463	0.361	Valid
25	0.407	0.361	Valid
26	0.455	0.361	Valid
27	0.559	0.361	Valid
28	0.483	0.361	Valid
29	0.545	0.361	Valid
30	0.420	0.361	Valid
31	0.570	0.361	Valid
32	0.404	0.361	Valid
33	0.412	0.361	Valid
34	0.382	0.361	Valid
35	0.558	0.361	Valid
36	0.518	0.361	Valid
37	0.449	0.361	Valid
38	0.404	0.361	Valid
39	0.506	0.361	Valid
40	0.447	0.361	Valid
41	0.381	0.361	Valid
42	0.371	0.361	Valid
43	0.402	0.361	Valid
44	0.391	0.361	Valid
45	0.415	0.361	Valid
46	0.447	0.361	Valid
47	0.533	0.361	Valid
48	0.419	0.361	Valid
49	0.437	0.361	Valid
50	0.369	0.361	Valid

The table above shows that the value of r_{xy} in each item is bigger than the value of r_{table}. It means all the items in the questionnaire were considered valid. Thus, it could be used as the research instrument in this study.

3.5.2. Testing the Reliability of Questionnaire

Reliability refers to the consistency of the instrument. An instrument is considered reliable if it provides consistent result when it is applied more than once (Arikunto, 2002). The reliability of the instrument can be measured by using the *Alpha Cronbach* formula. The formula is stated below:

$$\alpha = \frac{K}{K-1}\left(1 - \frac{\sum_{i=1}^{K} \sigma_{Y_i}^2}{\sigma_X^2}\right)$$

(Arikunto, 2002)

Where:

α = alpha coefficient of reliability

K = number of components or items

σ_X^2 = Variance of the observed total test scores

$\sigma_{Y_i}^2$ = the variance of component

i = the current sample of persons

The instrument can be said as reliable instrument if it has *Cronbach* coefficient (α) which is higher than 0.60 (Nugroho, 2005). The result of reliability testing is shown in Table 3.5.

Table 3.5. Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.904	.907	50

Table 3.5 informs that the *Cornbach* coefficient of the questionnaire used in this study was 0.904. The point 0.904 is higher than 0.60 which means the questionnaire used in this study has trustable reliability.

3.5.3. Required Tests for Data Analysis

The main goal of this study is investigating the correlation between two variables namely students' language learning strategies (variable X) and WJEPT scores (variable Y). To attend this goal, the formula of Pearson Product Moment Correlation can be used for finding the correlation coefficient. However, the Pearson Product Moment Correlation formula can only be employed if the data of the two variables are normally distributed and have linearity between the two variables. Thus, testing the data normality and the data linearity was conducted to fulfill the purpose of this research.

3.5.3.1. Test of Normality

The normality testing is intended to know the data distribution in the variables which are investigated in the research. A good and proper data to be used in the research is the data which has normal distribution. The normal distribution of the data can be seen from the value of *Skewness*. *Skewness* value is the inclination value of a curve. The data is normally distributed if the *Skewness*

value is closer to zero so that it has balance inclination when it is displayed in a curve.

Table 3.6. Normality Statistics

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
SILL	105	-.243	.236	-.444	.467
WJEPT SCORES	105	-.026	.236	.472	.467
Valid N (listwise)	105				

The table above shows that the *Skewness* value of the SILL data is -0.243, and the *Skewness* value of the data WJEPT scores is -026. Those values are closer to zero. Thus, both the data SILL and WJEPT scores are distributed normally. Furthermore, the data normality can be proved by the balance curve in the histogram.

Fig. 3.1. Normality of SILL Variable

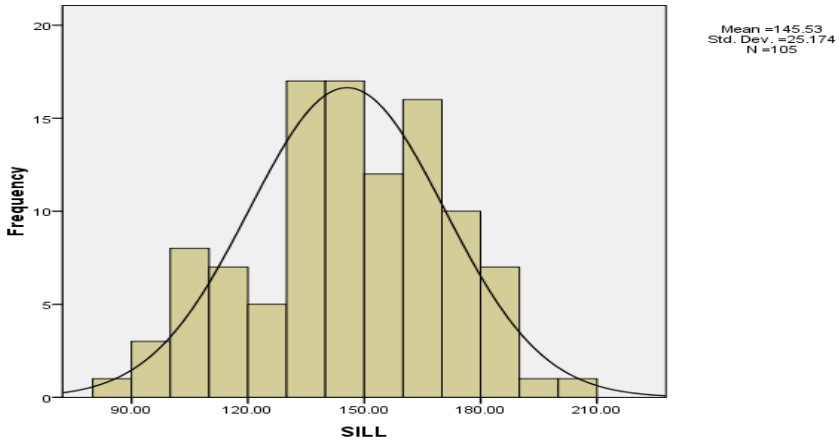
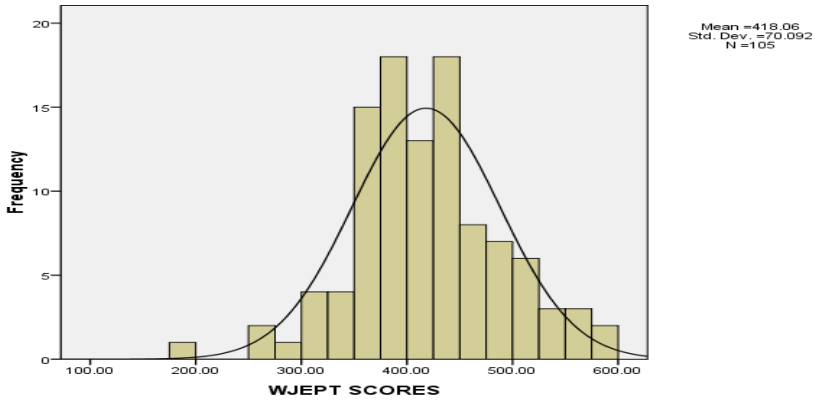


Fig. 3.2. Normality of WJEPT Scores Variable



3.5.3.2. Test of Linearity

Test of linearity is intended to examine the significance of the relationship of the variables observed in this study. Since the variables observed in this study are only two variables namely variable X (LLS) as independent variable and variable Y (WJEPT scores) as dependent variable, the calculation of linearity testing was based on simple regression formula which is stated as follow.

$$\mathbf{Y' = a + bX}$$

(Kranzler, 1999)

Where:

Y’ : dependent variable

a : fix coefficient

b : coefficient regression

Using SPSS 16.0 for Windows, the result of the calculation is displayed in table 3.7.

Table 3.7. The Result of Linearity Testing

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
WJEPT SCORES * SILL	Between Groups	(Combined)	509914.657	62	8224.430	334.391	.000
		Linearity	489170.057	1	489170.057	1.989E4	.000
		Deviation from Linearity	20744.601	61	340.075	13.827	.000
	Within Groups		1033.000	42	24.595		
	Total		510947.657	104			

The variables can be said having linear relationship if the value of F_{count} is bigger than the value of F_{table} ($F_{count} \geq F_{table}$) or the value of *p-value* (Sig. value) is smaller than the value of level significant (α=0.05). The value of F_{table} of the variables studied in this study with df=105-2 is 8.56. The table 3.7 shows that the value of F_{count} is 13.827. This point indicates that the value of F_{count} is bigger than the value of F_{table} (13.827>8.56). The table 3.7 also informs that the value of *p-value* is 0.000 which means smaller than 0.05. This result indicates that the variables observed in this study are linear.

To convince that the variables observed have linearity, Nugroho (2005) added that linear variables when it is depicted in a scatter plot show a straight regression line through the point on the scatter plot. The linearity scatter plot of the variables investigated in this study is shown in figure 3.3.

Fig. 3.3. Scatter Plot of Variables Linearity

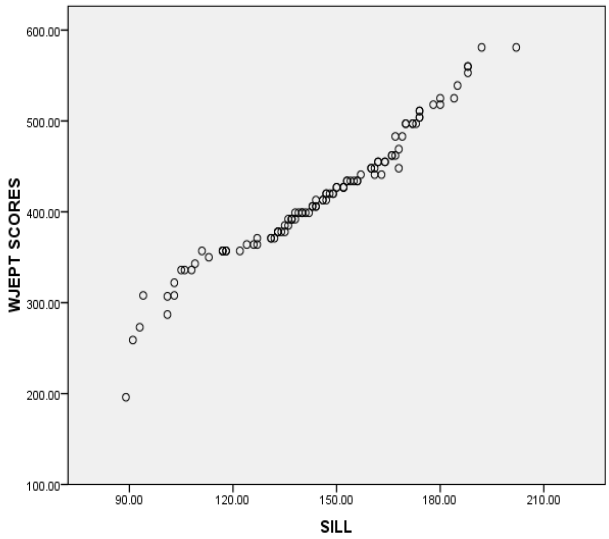


Figure 3.3. indicates that each variable studied in this research is disseminated following straight line. It means the linearity of the variables employed in this study is fully acceptable.

3.5.4. Investigating the Correlation

After all the requirements of employing Pearson Product Moment correlation had been completed, the further step is investigating the strength of correlation between students' language learning strategies and the students' WJEPT score. The calculation process of investigating the correlation coefficient was conducted by using SPSS 16.0 for windows. The procedures are mentioned as follow.

3.5.4.1. Finding out the Value of Correlation Coefficient between the Two Variables

The value of correlation coefficient can be got through the use of Pearson Product moment formula. The formula is stated below.

$$r = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{N\sum X^2 - \left(\sum X\right)^2}\sqrt{N\sum Y^2 - \left(\sum Y\right)^2}}$$

(Sugiyono, 2007)

Where:

r = correlation coefficient

x = score of each item

y = total score of each respondent

n = number of respondent

After the value of *r* had been found, the next step was interpreting the degree of correlation between the two investigated variables by consulting the value of *r* to the table *r* coefficient.

Table 3.8. The Category of Correlation Coefficient

No.	*r* Coefficient	Correlation
1.	0.00 – 0.199	Very weak
2.	0.20 – 0.399	Weak
3.	0.40 – 0.599	Moderate
4.	0.60 – 0.799	Strong
5.	0.80 – 1.00	Very strong

(Arikunto, 2002)

3.5.4.2. Calculating the Contribution of Language Learning Strategies

This computation is intended to see the percentage of the contribution of language learning strategies variable toward WJEPT scores variable. The percentage was calculated based on the formula stated below.

$$\mathbf{CD = r^2 X\ 100\%}$$

(Coolidge, 1997)

Where:

CD : Coefficient Determinant

r^2 : squared correlation coefficient

3.5.5. Comparing the Mean of Each Type of Language Learning Strategies

The process of comparing the mean of each type of language learning strategies is meant to discover the frequency of language learning strategies which are employed by the students in learning English language. To meet this purpose, the mean of each strategy was compared one another. The strategy which has the highest mean is categorized as the strategy which is often employed by the students.

3.5.6. Interview Data Analysis

Interview data analysis is conducted to dig more detail information about the language learning strategies which are employed by the students in learning English language. Furthermore, the answers of the interviewee are expected

supporting the data obtained from SILL questionnaire. The data gained from the interview was analyzed by using descriptive qualitative analysis method.