CHAPTER III

METHODOLOGY

Methodology of a study is essential to get the appropriate result. Therefore, a careful procedure must be considered. For this instance, this chapter describes the procedures in conducting the study. It covers the argument of selecting the research method, population and samples, as well as the instrument employed. This chapter also describes the process of collecting the data and how it was analyzed.

A. Research Method

In order to answer the research questions, an appropriate research method should be selected. In line with the purpose of this study, a method used in this study is descriptive. Gay (1990:189) states that descriptive research involves collecting data in order to test hypotheses or to answer questions concerning the current status of the subject of the study. He also adds that correlational research is sometimes treated as a type of descriptive research, since it does describe an existing condition (1990:229).

This study attempts to describe the use of language learning strategies of vocational school students and further to see whether there is a significant relationship between these strategies and their English proficiency. The data of the students' language learning strategies as independent variable and its' correlation with their English proficiency as shown by the TOEIC scores as dependent variable were the problems to be analyzed in this study.

B. Population and Samples

Selection of a sample is one of the most important steps in conducting a research study since the appropriate sample become the representative of the population from which it was selected. The individuals selected comprise a sample and the larger group is referred to as population.

Gay (1990:102) states that the population is the group of interest to the researcher. The defined population has at least one characteristic that differentiates it from other groups. There are various programs which are offered by vocational schools, such as Trade and Industry, Agriculture, Health, Technology, and so forth. In this study the population were the third grade students of Business and Tourism Vocational School (SMK Negeri 3 Bandung) who have taken the TOEIC.

The third grade students of SMK Negeri 3 Bandung were chosen as the population since SMK Negeri 3 Bandung is one among several vocational schools in Bandung which has the legal right from Directorate of Vocational School Development to conduct TOEIC examination. However, the school does not implement the TOEIC program by adding extra hour to 'teach' TOEIC material. The TOEIC material is introduced to third grade students during regular English lesson. This is due to the fact that the students have already had eight hour lessons a day. Furthermore, there are three other foreign languages which are taught: German, France and Mandarin languages. In addition, SMK Negeri 3 Bandung is a Business and Tourism Vocational School which offers four major departments: Accounting, Office Administration, Marketing, and Tourism. It adopts Competency-based

Curriculum and put a lot of consideration on the mastery of language skills related to students' work field.

Furthermore, the sampling technique used in this study was cluster sampling. Gay (1990:110) describes this sampling technique as a sampling in which groups, not individuals, are randomly selected. All the members of selected groups have similar characteristics. Therefore, the subjects of this study were four classes of third grade students who have taken TOEIC. Each class was the representative of each department and 135 girl students participated in this study. This amount was determined based on the formula proposed by Surakhmad (1994, cited in Riduwan, 2005:65) who states that if the amount of the population is more than or equal to 100, then the desired sample would be at least 15% of the population. In this study, the amount of the population was 385 students. Therefore, 135 students would be considered sufficient as the sample of the study. As Gay (1990:115) states that correlational studies need at least 30 subjects to establish the existence or nonexistence of a relationship.

C. Instruments of the Study

Since there were two variables observed in this study, namely the students' language learning strategies and students' TOEIC scores, there were two main sets of instruments that identified and measured these variables: SILL questionnaire and TOEIC scores. Further, to verify the result of the questionnaire, interview technique

was also applied. Research instruments used in collecting the data for this research were divided into three kinds as follow.

1. Questionnaire

This study used Strategy Inventory for Language Learning (SILL) version 7.0 (Oxford, 1990:293) as the tool to collect the students' responses on their strategies in learning English language. SILL is a self-reporting questionnaire for students of English as a second or foreign language by requiring students to answer 50-item questions on their language-strategy use which cover the four language skills: reading, listening, speaking and writing. Each item has a five Likert-type scale ranging from never or almost never true (1) to always or almost always true (5). The participants should choose one of the following options: Never or almost never true of me, Usually not true of me, Somewhat true of me, Usually true of me, and Always or almost always true of me. Furthermore, the responses to these options were classified based on the criteria for evaluating the level of strategy use frequency formulated by Oxford as follow:

- Low   : 1.00 – 2.49 (Generally not used and never or almost never used)
- Medium   : 2.50 – 3.49 (Sometimes used)
- High   : 3.50 – 5.00 (Usually used and always or almost always used)

Oxford developed this Strategy Inventory for Language Learning, which contains six categories:

Table 3.1 the Categories and Example of Item for Each Category in the SILL

	Category	Item Number	Sample Item
A	Memory Strategies for storing and retrieving new information	1 to 9	I review English lesson often
B	Cognitive Strategies for manipulating and transforming learning materials	10 to 23	I practice the sound of English
C	Compensation Strategies for overcoming deficiencies of knowledge in language	24 to 29	I read English without looking up every new word.
D	Metacognitive Strategies for directing the learning process	30 to 38	I think about my progress in learning English.
E	Affective Strategies for regulating emotions	39 to 44	I try to relax whenever I feel afraid of using English.
F	Social Strategies for increasing learning experience with other people	45 to 50	I practice English with other students.

SILL has been used by groups of foreign language in high schools and universities around the world. It means that its validity and reliability are not questionable (Oxford, 1990:255). However, since SILL used in this study was a modified one which was translated into Indonesian language and fitted the Indonesian contexts, it was tried out to the population of non sample to know its readability, validity and reliability.

2. Documentary Analysis Format

This instrument was intended to collect the information about the students' English proficiency as indicated by their TOEIC scores. TOEIC has been used internationally as a standard assessment of English-language proficiency. It has been developed by linguist, language experts, and staff at The Chauncey Group

International Ltd. to evaluate language skills of nonnative speakers of English in the field of business. Therefore, as an internationally standardized test, the validity and reliability of the TOEIC are not questionable. The test consists of two sections: Listening Comprehension (100 multiple-choice questions) and Reading (100 multiple-choice questions). An audiotape was used to test Listening comprehension. Each correct answer is scored five points.

3. Interview

Generally, in this study the interview was intended to gain sufficient data that support the questionnaire result and to affirm that the participants truly employed the strategies in language learning, which were proposed in SILL. In order to gain the purpose, semi structured interview was used in this study. Borg and Gall (1979:319) state that semi structured interview provides a desirable combination of objectivity and depth and often permits gathering valuable data. This approach permits the interviewer to ask series of structured questions and then probes more deeply, using open-ended questions in order to obtain more complete data.

After the respondents gave their initial reaction to the structured questions, the resulted information could be used to probe deeper for additional insight to the interview's central concern, namely relationship between students' strategies use and their English proficiency.

In this study, the interviewed subjects were three students and an English teacher. Each student represented each level of language learning strategies frequency

employed by the students. Student A employed high frequency of language learning strategies, student B employed moderate frequency and student C employed low frequency of language learning strategies. Further, the English teacher was interviewed to verify the students' responses in accordance to their language learning strategies.

D. Data Collection

Some procedures have been conducted in order to obtain the result of the study. The procedures taken to conduct this research were as follow.

1. Selecting the appropriate population and sample. SMK Negeri 3 Bandung was chosen as the population of the study for the sake of practicality, beside it is one of vocational schools in Bandung which has the legal right from Directorate of Vocational School Development to conduct TOEIC examination.

2. Asking the school administrator's permission and students' cooperation to conduct the research.

3. Distributing the SILL questionnaire which consists of 50 statements to ten students of non-participants in order to test the readability, validity, and reliability of the items. Ten students of Marketing program became the participants of this try out test, which was conducted in the third week of February 2007. However, the students seemed to have some difficulties in understanding the statements in the questionnaire. This might be happened since the SILL was translated literally,

out of context. This also resulted in the validity of the SILL. Many of the statement were invalid.

4. Redistributing the modified SILL questionnaire to 30 students of non-participants in order to test the readability, validity, and reliability of the items. The modified SILL was designed based on the students' previous responses and by giving a contextual example on the questionnaire. Thirty students of Accounting program became the participants of the second try out test. As the result, one item was not taken into account out of 50 items.

5. After having the validity and reliability of the SILL questionnaire, the instrument was applied to the samples of the study. Here, the participants were required to respond the statement suit to their condition, which described their strategies in learning English. One hundred and thirty five students participated in this study which came from Accounting, Marketing, Office Administration and Tourism program. It took about 25 to 35 minutes for the students to complete the questionnaire. This process was conducted a week after the students took the TOEIC test. The TOEIC test was conducted at 21st of March 2007. The paper of TOEIC questions was directly burn out after the students finished their TOEIC test.

6. Asking the students' TOEIC score from English Testing Center (ETC) of SMK Negeri 3 Bandung. This was intended to analyze the students' proficiency in English language. The students' TOEIC score was gained in the fourth week of April 2007.

7. Interviewing the students and the teacher. In implementing the interview, tape recorder was used in order to record the students and teacher's responses. This process was conducted at the end of May and early of June 2007.

8. Wrote the data analysis and interpretation according to what has been found in data collection.

E. Data Analysis

Before analyzing the data gathered from the research, some requirements needed to be fulfilled in order to get the result. The degree of validity and reliability of SILL questionnaire need to be resolved. Moreover, some requirements underlying the Pearson product-moment to find out the correlation coefficient also required to be fulfilled. They were the test of normality, transforming the data into interval scale, and the relationship between the two sets of scores is linear (Brown, 1988:136).

1. Validity of the Questionnaire

Gay (1990:128) states that the most simplistic definition of validity is that it is the degree to which a test measures what it is supposed to measure. The validity of each item is tested using the Pearson-Product Moment (Arikunto, 2002:146). The formula stated as follows:

$$r_{xy} = \frac{n(\sum XY) - (\sum X).(\sum Y)}{\sqrt{(n.\sum X^2 - (\sum X)^2.(n.\sum y^2 - (\sum y)^2}}$$

r_{xy} is the correlation coefficient between the total score per item and the total score per respondent. n is the total number of respondents. x^2 is the square of the total score per item. y^2 is the square of total score per respondent. XY is the sum of x and y.

The result is interpreted using criteria as follow.

0.00-0.20   :   Very poor

0.21-0.40   :   Poor

0.41-0.60   :   Satisfactory

0.61-0.80   :   Good

0.81-1.00   :   Excellent

(Arikunto, 2002:245)

The instrument was tried out to 30 third grade students of non-sample in order to find the validity of the items. An item is valid if the Corrected Item-Total Correlation is higher than r_{table}. In this study, r_{table} in α 0.05 with df = n-2 (28) was 0.374. The result of the validity testing can be shown in Table 3.2.

Table 3.2 The validity of SILL questionnaire

Item Number	Correlation Coefficient	r_{table}	Result
1.	0,417	0.374	Valid
2.	0,484	0.374	Valid
3.	0,386	0.374	Valid
4.	0,427	0.374	Valid
5.	0,412	0.374	Valid
6.	0,397	0.374	Valid
7.	0,391	0.374	Valid
8.	0,546	0.374	Valid
9.	0,597	0.374	Valid
10.	0,472	0.374	Valid
11.	0,650	0.374	Valid
12.	0,689	0.374	Valid
13.	0,547	0.374	Valid
14.	0,645	0.374	Valid
15.	0,421	0.374	Valid
16.	0,418	0.374	Valid
17.	0,663	0.374	Valid
18.	0,659	0.374	Valid
19.	0,440	0.374	Valid
20.	0,445	0.374	Valid
21.	0,668	0.374	Valid
22.	0,471	0.374	Valid
23.	0,517	0.374	Valid
24.	0,424	0.374	Valid
25.	0,452	0.374	Valid
26.	0,659	0.374	Valid
27.	0,402	0.374	Valid
28.	0,619	0.374	Valid
29.	0,411	0.374	Valid
30.	0,514	0.374	Valid
31.	0,423	0.374	Valid
32.	0,381	0.374	Valid
33.	0,406	0.374	Valid
34.	0,418	0.374	Valid
35.	0,398	0.374	Valid
36.	0,571	0.374	Valid
37.	0,612	0.374	Valid
38.	0,380	0.374	Valid
39.	0,477	0.374	Valid
40.	0,714	0.374	Valid
41.	0,462	0.374	Valid
42.	0,126	0.374	invalid
43.	0,536	0.374	Valid
44.	0,388	0.374	Valid
45.	0,532	0.374	Valid

Item Number	Correlation Coefficient	r$_{table}$	Result
46.	0,677	0.374	Valid
47.	0,483	0.374	Valid
48.	0,516	0.374	Valid
49.	0.528	0.374	Valid
50.	0,492	0.374	Valid

From 50 items of statements in the questionnaire, there was one item which, was not taken into account, i.e. item number 42. Thus, the composition of SILL distributed to the students were 49 items with the description of strategy as follow.

Table 3.3 Description of Strategy in Each Item

Item	Strategy Group	Strategy
1	Memory	Associating
2	Memory	Placing new words into a context
3	Memory	Using imagery
4	Memory	Using imagery
5	Memory	Representing sounds in memory
6	Memory	Using mechanical techniques
7	Memory	Using physical response
8	Memory	Reviewing well
9	Memory	Using imagery
10	Cognitive	Repeating
11	Cognitive	Repeating
12	Cognitive	Formally practicing with sounds
13	Cognitive	Practicing naturalistically
14	Cognitive	Practicing naturalistically
15	Cognitive	Practicing naturalistically
16	Cognitive	Practicing naturalistically
17	Cognitive	Practicing naturalistically
18	Cognitive	Getting the idea quickly
19	Cognitive	Analyzing contrastively
20	Cognitive	Recognizing and using formulas and patterns
21	Cognitive	Analyzing expressions
22	Cognitive	Translating
23	Cognitive	Summarizing
24	Compensation	Guessing intelligently by using linguistic clues
25	Compensation	Getting help
26	Compensation	Coining words

Item	Strategy Group	Strategy
27	Compensation	Guessing intelligently by using linguistic clues
28	Compensation	Guessing intelligently by using other clues
29	Compensation	Using synonym
30	Metacognitive	Seeking practice opportunities
31	Metacognitive	Self monitoring
32	Metacognitive	Delaying speech production
33	Metacognitive	Finding out about language learning
34	Metacgnitive	Organizing
35	Metacognitive	Seeking practice opportunities
36	Metacognitive	Seeking practice opportunities
37	Metacognitive	Setting goal and objectives
38	Meatcognitive	Self evaluating
39	Affective	Using deep breathing
40	Affective	Taking risk wisely
41	Affective	Rewarding oneself
42	Affective	Writing a language learning diary
43	Affective	Discussing he feeling with someone else
44	Affective	Asking question for verification
45	Social	Asking for correction
46	Social	Cooperating with peers
47	Social	Cooperating with proficient user
48	Social	Asking question for clarification
49	Social	Developing cultural understanding

2. Reliability of the Questionnaire

Gay (1990:135) says that reliability is the degree to which a test consistently measures whatever it measures. Furthermore, Arikunto (2002:171) states that Alpha formula is used to find out reliability of instrument that the score is not 1 or 0. It is usually used toward score with range of several values. The formula is stated below:

$$r_{11} = (\frac{K}{K-1}) - (1 - \frac{\sum \sigma_b^2}{\sigma_1^2})$$

(Riduwan, 2005:115)

r_{11} = reliability of the questionnaire, k is number of items, $\sum \sigma_b^2$ = variance number of all items, and σ_1^2 is the total variance.

The result of r_{11} is reliable, if it is bigger than r_{table}, but if r_{11} is lower than r_{table} then it is unreliable (Riduwan, 2004:118). After being calculated by using SPSS version 12.0, the value of coefficient Alpha reliability of r_{11} was 0.936. Since it was bigger than r_{table} for df=30-1 with 5% of significant i.e. 0.367, the instrument was reliable.

3. Required Tests for Data Analysis

a. Test of Normality

Before trying to find the correlation between the two variables, the data should be normally distributed. If both of variables are normally distributed, the calculation for testing the correlation will use Pearson Product Moment. Whereas, if the variables are not normally distributed, the calculation can be done by applying non-parametric statistic correlation.

Test of normality is meant to determine whether or not the samples were taken from the same population. Galton (cited in Subana, 2001:149) states that if the ability of a group of students in a class is measured, the result of the measurement will form a normal curve. Furthermore, the criteria for determining whether the data come from normally distributed population or not can be decided by looking at its probability. If the probability is less than 0.05, the data population is not normally distributed.

However, if the probability is more than 0.05, the data population is normally distributed. Above all, the normality of data can bee seen from skewness value. Skewness value is the inclination value of a curve. The data is normally distributed if the skewness value is around 0 (zero). Thus, the curve has a balance inclination.

Table 3.4 The Result of Data Normality Test

Descriptive Statistics

	N	Mean	Std.	Skewness	
	Statistic	Statistic	Statistic	Statistic	Std. Error
Strategies	135	50.00	10.027	.137	.209
TOEICScores	135	249.85	67.193	.497	.209
Valid N (listwise)	135				

Table 3.4 shows that the value of skewness for strategies data is 0.137 and TOEIC scores is 0.497. Furthermore, both of these data are normally distributed as it could be seen in the histogram which display normal curve (see the appendix on page 114).

b. Converting the Ordinal Scale into Interval Scale

One of the assumptions underlying the Pearson product-moment correlation coefficient is that each of the two variables involved is measured on an interval scale (Brown, 1988:137). One of the variables in this study, i.e. students' strategies as

measured by SILL used ordinal scale. Therefore, this scale should be transformed into interval data by using the following formula:

$$Ti = 50 + 10 \cdot \frac{(x_i - \bar{x})}{S}$$

(Riduwan, 2005:131)

Ti is the interval scale. X_i is the frequency of interval class multiplied by the median values of each interval class. s is the standard deviation of the ordinal scale.

c. **Test of Linearity**

Brown (1988:138) states that the relationship of the variables must be linear. This is as seen in a straight regression line through the points on the scatter plot which does not form a curvilinear relationship. Furthermore he adds that the linear relationship could not be analyzed with a Pearson r. Therefore, the test of linearity was conducted by using simple regression analysis with the help of SPSS version 12.0 for windows.

Table 3.5 The Result of Linearity Test

R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
.173(a)	.030	.023	66.42407	.030	4.120	1	133	.044

a Predictors: (Constant), Overall Strategies

The variables are considered to have linear relationship when the value of $F_{count} \geq F_{table}$. The value of F_{table} by using the function of finv with df=135-2 in Microsoft Excel 97 is 3,912. Further, Table 3.4 shows that the value of F_{count} at df=135-2 is 4.120. Thus, it could be assumed that the relationship between the language learning strategy scores and TOEIC scores were linear since the value of F_{count}= 4,120 is bigger than F_{table}=3,912, and the significant was at 0.044 which was smaller than the probability of 0.05.

4. Analyzing the Data

a. Searching for Correlation

After all the requirements underlying the Pearson product-moment were fulfilled, the next step was to find out the strength of correlation between the language learning strategies and English proficiency as indicated by the students' TOEIC scores. The Pearson product-moment formula was once again used for this purpose. Further, the analysis was conducted with the help of SPSS version 12.0 for windows.

b. Calculating the Contribution

This calculation was aimed to know the contribution of language learning strategies variable to TOEIC scores variable. For this purpose, Coefficient Determinant formula was employed as stated follows:

$$CD = r^2 \times 100\%$$

(Riduwan, 2005:139)

CD is coefficient determinant. r^2 is the square of correlation value.

c. Predicting the Proficiency

Simple linear regression analysis is used to predict the influence of students' strategies use (X variable) to their English proficiency (Y variable) or to know whether the correlation between both variables is linear. The equation of linearity regression is:

$$Y = a + bX$$

Where Y is the score of predicted subject in dependent variable, X is the score of certain subject (predictor) in independent variable, a is Y coefficient when X=0, and b is regression coefficient that lead to the increase or decrease of dependent variable based on independent variable.