CHAPTER III

RESEARCH METHODOLOGY

This chapter elaborates some methodological aspects of the study. It includes design of the study, site and respondents, data collection methods, data analysis methods, and it is ended by reliability and validity of the study.

3.1 Design of the Study

The study was set as a mixed method design that employed descriptive approach**.** The mixed method design was applied since the study aimed to describe and understand the nature of an event, in this case is strategies employed by students in learning vocabulary in one of junior high school, and also to investigate the relationship between students' vocabulary learning strategies and their vocabulary mastery.

The study was a descriptive approach in nature as it attempted to describe and "understand social and human problems or particular phenomenon based on building complex, formed with words, reporting detailed views of informants and conducted in natural setting" (Creswell, 1994, p.2). In this study, the phenomenon being studied is a process of vocabulary learning in one junior high school in Bandung which focused on describing strategies employed by students in learning vocabulary.

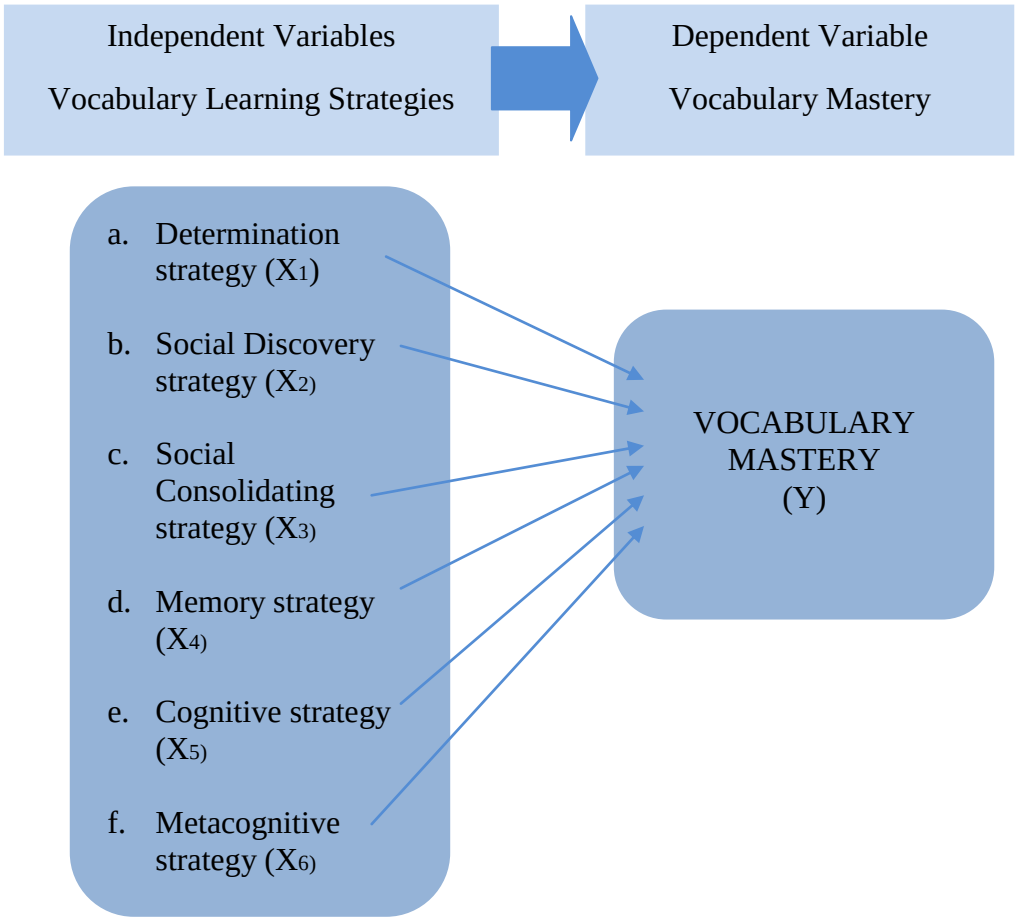
Meanwhile, a convergent parallel mixed method design was particularly employed since the study simultaneously collected both qualitative and quantitative data with same weighing, merged the data, and used the results to understand the research problems, in this case students' vocabulary learning strategies and the relationship between the strategies employed and students' vocabulary mastery. In addition, they study used two data sets which are given equal priority "to provide strengths to offset weaknesses of each other" (Creswell, 2012, p.540). The qualitative data set were gathered through questionnaire, observation, and interview. Meanwhile the quantitative data were collected

through questionnaire and vocabulary size test that was then analyzed using Multiple Correlation test to answer the second research question which deals with the relationship between students' vocabulary learning strategies and their vocabulary mastery.

Multiple correlation test refers to "a statistical procedure for examining the combined relationship of multiple independent variables with a single dependent variable" (Creswell, 2012, p.350). In the present study, the combined relationship that was investigated is the relationship of vocabulary learning strategies which cover six sub-strategies namely determination, social discovery, social consolidating, memory, cognitive, and metacognitive strategies, with a single dependent variable named students' vocabulary mastery. The relationship mapping can be seen in the following figure.

Figure 3.1

Multiple Correlation Mapping



3.2 Site and Respondents

Employing a mixed method design, consequently, the site and respondents of the study were also selected in purpose (Ary, et al., 2010). The study was conducted in one of private junior high schools in Bandung. The school is one well-known private school in Bandung. The respondents of the study involved 30 8^{th} graders in the higher intermediate EFL class of the chosen school. The subjects were purposively chosen after considering their characteristics suiting the need of the study and their willingness and interest to be respondent of the study.

The school was selected since they practice vocabulary teaching within their English classes. Meanwhile, the students were selected because of their higher possibility in learning vocabulary in their English classroom and also their higher ability in terms of vocabulary size that was gained from the preliminary research**.**

3.3 Data Collection

To collect data needed for answering the research questions, four data collection instruments were used in the study namely questionnaire, interview, classroom observation, and receptive vocabulary test, in this case Vocabulary Size Test.

In conducting the research, the procedures that were used in conducting this research were (1) conducting preliminary research, (2) determining the respondents of the research, (3) conducting observation, (4) distributing the questionnaire, (5) conducting teacher and students' interview, (6) administering the try out, (7) administering vocabulary test, (8) analyzing the data, (9) drawing findings and conclusions from the data. In order to find the relationship between vocabulary mastery and vocabulary learning strategies used by students, the hypotheses were analyzed by using Multiple Correlation. After finding the coefficient correlation, the researcher found out the criterion of the hypotheses acceptance. The hypotheses were proposed as H_0 (sig value > .05) and H_a (sig. value < .05).

Each data collection instrument is described as follows.

3.3.1 Questionnaire

The questionnaire instrument was designed to investigate strategies employed by students in vocabulary learning process. The questionnaires were distributed on April 2017 to thirty students and they were also collected in the same time when they were distributed.

The questionnaire was adapted from Smith's questionnaire (1997) so as to find out students' vocabulary learning strategy mostly used by them among two major categories of vocabulary learning strategy offered in the questionnaire namely Discovery Strategy which covers *Determination and Social Discovery strategies,* and Consolidating Strategy which covers *Social Consolidating, Memory, Cognitive, and Meta-cognitive strategies*. The questionnaire consisted of thirty statements in which each vocabulary learning strategy was realized in five statements and their frequency were graded from *always = 5, often = 4, sometimes = 3, seldom = 2, and never = 1* (See Appendix 1).

The findings from questionnaire were validated by having semi structured interview with some of the respondents.

3.3.2 Interview

McKay (2006) very well states that interview is a data collection method that serves different purposes. Through interview, the researchers may investigate participants' background, reported behavior, and also opinions and attitude about various aspects of language learning. In the present study, the instrument was used to investigate students' inner thoughts toward vocabulary and vocabulary learning, strategies being employed in learning vocabulary in the classroom, and also to validate their responses from the questionnaire. The interview was conducted to six out of thirty students to explore their responses from the questionnaire regarding their strategies in learning vocabulary and also relationship between students' vocabulary learning strategies and their vocabulary mastery.

To strengthen data gained from the interview, as suggested by Alwasilah (2002), the current study conducted another method. Observation instrument was

also used by the study to collect data needed and to synchronize the data gained from the questionnaire and interview with the practice of vocabulary learning.

The students' interview was conducted on May 23rd 2017 to six out of thirty students. This was due to time limitation and their willingness to be interviewed. The interview guideline can be viewed in Appendix 3.

3.3.3 Observation

The third data collection instrument employed in the study was classroom observation. Classroom observation instrument was designed to investigate the practice of vocabulary learning which focused more on how vocabulary learning was being conducted in EFL classrooms. This instrument was also employed to confirm the observed respondents' responses from the questionnaire and interview with their actual classroom learning. The observation was conducted five times, they were on April 6th, 12th, 21th, 26th, and 28th. This was aimed to get comprehensive data for answering the research questions.

As previously mentioned, the observation instrument was intended to find out the students' vocabulary learning strategies during the learning process. Thus, so as to find out students' strategies in learning vocabulary, the study completed observation field note that was analyzed based on framework proposed by Schmitt (1997) which can be seen in Appendix 6.

3.3.4 Vocabulary Size Test

The last research instrument namely receptive vocabulary test was employed to answer the last research question of the study that is to investigate the relationship between vocabulary learning strategies employed on students' and their vocabulary mastery.

A receptive vocabulary test namely Vocabulary Size Test was given to assess students' vocabulary mastery in the level of receptive knowledge. The vocabulary size test was adapted from Nation and Beglar's Vocabulary Size Test (2007) so as to discover the vocabulary size of the students and identify which word families they are familiar with by selecting the best definition of each word

from among the four choices. The test consisted of 60 multiple choice questions in which the students have to find the best definition for the word/s in the brackets. The instrument was validated by having expert judgment, in this case judgment from the English teacher who teaches the class.

The instrument tested three dimensions of vocabulary knowledge they are the knowledge of written word form, the form-meaning connection and, to some extent, concept knowledge. The VST test consisted of 20 nouns (10 abstract nouns and 10 concrete nouns), 20 verbs (10 material process and 10 mental process), and 20 adjective (10 predicative objectives and 10 subjective adjective).

The validity and the reliability of the test was tested by using Anates program in which the result is further explained in the part of Reliability and Validity of Data Collection Instruments below.

3.4 Data Analysis

The present study focused on investigating several aspects which cover strategies used by students in vocabulary learning and the relationship between students' vocabulary learning strategies and their vocabulary mastery. To answer these aspects, the study used the following steps.

3.4.1 Analysis of Questionnaire Data

Data gained from questionnaire were analyzed using Microsoft Excel 2013 and SPSS Version 20. After that, descriptive statistics were calculated that cover frequencies, percentages, and means of the responses given by the subjects of the study related to six vocabulary learning strategies namely, determination, social discovery strategies for VLS Discovery, and social consolidating, memory, cognitive, and metacognitive strategies for VLS Consolidating (see Appendix 2). In order to have a clearer description about data questionnaire analysis, each of table analysis of vocabulary learning strategy is presented as follows.

a. Mean of all Vocabulary learning Strategies

VLS Discovery

VLS Strategy	Mean
Determination	
Social	

VLS Consolidating

VLS Strategy	Mean
Social	
Memory	
Cognitive	
Meta-cognitive	

b. Determination Strategy Frequency and Percentage in each item

No.	Item	Degree of Frequency										Mean
		5 Always		4 Often		3 Sometimes		2 Seldom		1 Never		
		F	%	F	%	F	%	F	%	F	%	
1.	I use bilingual English dictionary to help translating English into Indonesian or vice versa.											
2.	I learn meaning of vocabulary by identifying the root of the word and their affixes.											
3.	I use picture and gesture illustrated to find the meaning of the vocabulary.											
4.	I learn meanings of vocabulary by identifying their word class											

5.	I try to understand the meaning of vocabulary from the context I read or I listen to										-	

(N=30)

c. Social Strategy (Discovery) Frequency and Percentage in each item

No.	**Item**	**Degree of Frequency**										**Mean**
		5 Always		**4 Often**		**3 Sometimes**		**2 Seldom**		**1 Never**		
		F	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	
6.	I ask the teacher for the Indonesian translation if I find unfamiliar words											
7.	I ask for the synonym or paraphrase for the unfamiliar words I find											
8.	I ask a friend to find the meaning of an unfamiliar word											
9.	I ask the teacher to put an unknown word into a sentence to help me understand the word meaning											
10.	I know some new words when working in group											

(N=30)

d. Social Strategy (Consolidating) Frequency and Percentage in each item

No.	Item	Degree of Frequency										Mean
		5 Always		4 Often		3 Sometimes		2 Seldom		1 Never		
		F	%	F	%	F	%	F	%	F	%	
11.	I learn words about the culture of English speaking countries											
12.	I ask teacher to check my vocabulary flash card for accuracy											
13.	I ask teacher to check my wordlist for accuracy											
14.	I practice vocabulary when having a group work											
15.	I practice vocabulary by the help of native speaker											

(N=30)

e. Memory Strategy Frequency and Percentage in each item

No.	Item	Degree of Frequency										Mean
		5 Always		4 Often		3 Sometimes		2 Seldom		1 Never		
		F	%	F	%	F	%	F	%	F	%	
16.	I try to remember vocabulary from their spelling											
17.	I put a new word into sentences so I can remember them easier											
18.	I try to remember vocabulary by using											

	physical action and saying them out loud when I learn them											
19.	I try to remember vocabulary by associating them with my personal experience											
20.	I try to remember vocabulary by associating them with their synonym or antonym											

(N=30)

f. Cognitive Strategy Frequency and Percentage in each item

No.	**Item**	**Degree of Frequency**										Mean
		5 Always		**4 Often**		**3 Sometimes**		**2 Seldom**		**1 Never**		
		F	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	
21.	I try to remember vocabulary by mentioning them over and over											
22.	I try to remember vocabulary by writing down them over and over											
23.	I try down vocabulary on a notebook so I can remember them easily											
24.	I try to remember vocabulary by labeling the objects.											
25.	I try to remember vocabulary through CD or records of vocabulary											

(N=30)

g. Metacognitive Strategy Frequency and Percentage in each item

No.	Item	Degree of Frequency										Mean
		5 Always		4 Often		3 Sometimes		2 Seldom		1 Never		
		F	%	F	%	F	%	F	%	F	%	
26.	I try to remember English vocabulary through films											
27.	I try to remember learn English vocabulary through songs											
28.	I try to remember English vocabulary through news											
29.	I test my own vocabulary using vocabulary test, e.g. online vocabulary test											
30.	I don't feel worried when finding out words I don't understand when I read English or listened to English monologue. I just skip them.											

(N=30)

3.4.2 Analysis of Interview Data

The data from interview were analyzed through transcribing, coding, and interpreting the audio taped data to have clear information of students' inner thoughts dealing with how they perceive vocabulary in general, their strategies in learning vocabulary, and the relationship between vocabulary learning strategies and their vocabulary mastery. The analysis of interview data was also conducted to confirm or disconfirm data gained from questionnaire regarding strategies employed by the students in learning vocabulary (Malik and Hamied, 2016). The transcription of the interview can be seen in Appendix 4.

3.4.3 Analysis of Observation Data

Data that are collected through observation were analyzed by following Creswell's step (2012) as follows: data managing, reading/memoing, describing, classifying, interpreting, representing, and visualizing. In this study, the main data collected from questionnaire were managed and classified based on the research questions which cover how students and teacher perceive vocabulary teaching and vocabulary learning, teacher's strategies in vocabulary teaching, and students' strategies in vocabulary learning.

3.4.4 Analysis of Vocabulary Size Test Data

The analysis on vocabulary size test (VST) data was conducted by scoring the test of each student. The scoring was conducted by dividing the total of students' right answers by the total number of item questions multiplied by one hundred.

$$\text{Student's score} : \frac{\sum \text{right answers}}{\sum \text{items}} \times 100$$

After that, as an attempt to answer the last research question that tried to investigate the relationship between students' vocabulary learning strategies and their vocabulary mastery, in this case vocabulary size, the VST score of students was used as the dependent variable in the present study (see Appendix 2).

The last research question was analyzed using Multiple Correlation test of significance. This test, as asserted by (Creswell, 2012, p.350), is suitable "for examining the combined relationship of multiple independent variables with a single dependent variable". The present study examined the combined relationship of multiple independent variables ($X_1 \ldots X_n$) namely vocabulary learning strategies which cover determination, social discovery, social consolidating, memory, cognitive, and metacognitive strategies with a single dependent variable (Y) named students' vocabulary mastery. The vocabulary learning strategies were respectively labeled X_1 (determination), X_2 (social discovery), X_3 (social consolidating), X_4 (memory), X_5 (cognitive), and X_6 (metacognitive). The score of

each independent variable was gained from analysis of the questionnaire that was conducted by calculating score of each student's response to each vocabulary learning strategy.

After gaining the data gained, they were then analyzed using SPSS version 20 to test the hypotheses in finding the relationship between students' vocabulary learning strategies and their vocabulary mastery whose degree relationship can be determined by referring to the following table (Ruseffendi, 1991).

Table 3.1

Degree of Relationship

Scale of coefficient	Interpretation
0.00 – 0.20	No correlation
0.21 – 0.40	Weak correlation
0.41 – 0.60	Moderate correlation
0.61 – 0.80	Strong correlation
0.81 – 1.00	Perfect correlation

After all, the results were presented to answer research questions of the study and they were ready to be visualized and interpreted supporting by related theories.

3.5 Reliability and Validity of the Study

What follows are presented to describe the reliability and validity of the study that cover reliability and validity of instruments and reliability and validity of the data.

3.5.1 Reliability and Validity of Data Collection Instruments

3.5.1.1 Questionnaire

The questionnaire was pilot tested to 10 similar samples on March 3rd 2017 and the result of the reliability can be seen in the following table.

Table 3.2

Reliability Statistic of Questionnaire

Cronbach's Alpha	N of Items
.926	30

As can be seen in the table above, Cronbach Alpha of the questionnaire Part B is .926. r-table of Cronbach Alpha of N = 10 is .632. Since Cronbach Alpha (.926) > r-table (.765) with P = 5%, the items in students' questionnaire instrument can be considered reliable to collect data needed by the present study.

3.5.1.2 Vocabulary Size Test

The vocabulary test given was adapted from Vocabulary Size Test developed by Nation and Berglar (2007). The test consists of 60 multiple choice questions in which students have to find English definition or synonym of each word being asked (See Appendix 5).

As an attempt to find the reliability and validity of vocabulary test instruments, the vocabulary size test was primarily given to another sample with similar characteristics. 20 students of junior high school were asked to do the test within 40 minutes. Students' answers were then analyzed using Anates so as to find the reliability and validity of the instrument as described in the following description.

Reliability is related to the degree to which a test consistently measures whatever it measures (Gay, 1987). Guilford classifies the degree of reliability coefficient and its interpretation as listed in the table below (Ruseffendi, 1991).

Table 3.3

Interpretation of Reliability Scale

Scale of *r*	Interpretation
0.00 – 0.20	Very Low
0.21 – 0.40	Low
0.41 – 0.70	Moderate
0.71 – 0.90	High

0.91 – 1.00	Very High

Data gained were analyzed using Anates and it was discovered that reliability of the vocabulary size test (VST) instrument was in the very high level as can be seen in the table below.

Table 3.4

Reliability of VST Instrument

r	Interpretation
0.90	Very High

As can be evidenced from the table above, *r* coefficient of the test instrument is .90. This means that the test instrument can be considered reliable to be employed to collect data needed for answering the research question, in this case the forth research question.

In addition, the validity of the instrument was also tested using Anates. Validity relates to the extent to which a test measures what it is supposed to measure, in this case students' receptive vocabulary knowledge, the higher the correlation coefficient, the higher the validity of the instrument.

The correlation coefficient is symbolized by r_{xy} and the criteria of the correlation coefficient and their interpretation are listed by (Suherman, 2003) as follows.

Table 3.5

Interpretation of Correlation Coefficient (r_{xy}) Scale

Scale of r_{xy}	Interpretation
$0.91 \leq r_{xy} \leq 1.00$	Very High Validity
$0.71 \leq r_{xy} < 0.90$	High Validity
$0.41 \leq r_{xy} < 0.70$	Moderate Validity
$0.21 \leq r_{xy} < 0.40$	Low Validity
$0.00 \leq r_{xy} < 0.20$	Very Low Validity
$r_{xy} < 0.00$	Not Valid

The similar analysis using Anates showed that coefficient of 25 question items in the test were below .20 (See Appendix 7). Accordingly, they have been revised so as to meet the validity of the instrument.

3.5.1.3 Interview

The interview schedule was validated by asking for feedback from supervisor and proofreaders. The interview schedule can be seen in Appendix 3.

3.5.2 Reliability and Validity of the Data

The data that have been collected and analyzed need to be validated in order to make sure that the finding and the interpretation were fair. As suggested by Creswell (2012), validating findings is utmost important to be conducted by the researcher by which s/he determines the accuracy or the credibility of the findings through some strategies. Furthermore, he explained three strategies were typically used as follows.

The first strategy is conducting triangulation. Creswell (ibid.) very well stated that the researchers need to triangulate different data sources to enhance the accuracy of the study. The process of triangulation is conducted by corroborating evidence from different individuals, types of data, or methods of data collection.

Second, member checking was another strategy that can be employed to validate the findings of the study. Through this strategy, the researchers check their findings with participant of the study to determine whether their findings are accurate. The last strategy was by having an external audit. By this step, the researchers ask the person outside the study to conduct a thorough review of the study and report back the strengths and weaknesses of the study.

However, to meet the reliability and validity of the data, the present study only perceived two among three aforementioned strategies namely triangulation and external audit. Triangulation was conducted by corroborating three data collection methods which cover questionnaires, observation, and interview. Meanwhile, external audit was also applied by asking for feedback from supervisor and proofreaders.

3.6 Concluding Remark

This chapter has clearly shown research design being employed by the study, site and respondents being involved, and how the data in the study were collected as well as analyzed. The data for answering the 1st research question were gained through questionnaire, observation, and interview, meanwhile the 2nd research question was answered by hypotheses testing using Multiple Correlation SPSS after analyzing data gained from vocabulary learning questionnaire and vocabulary size test. Last, it also described the reliability and validity of the study.