CHAPTER 1

INTRODUCTION

This chapter consists of the background of the research, the problems of the research, the aims of the research, the significances of the research, the research framework, the hypotheses of the research, and the methodology of the research.

A. Background of the Research

Mastering English skills such as listening, speaking, reading, and writing is impossible without words or vocabulary. Zimmerman (1997) as cited in Aktekin and Guven (2013:339) states that vocabulary is a center of language and very important to language learners. Even, Wilkins (1972) as cited in Thornbury (2002:13) emphasizes that a little can be conveyed without grammar, but nothing can be conveyed without vocabulary. It shows that vocabulary is crucial for language learners that it becomes more important to consider than grammar.

Since vocabulary would determine the success on mastering a language, people should consider the way it is being taught. Teachers might find a way to make students motivated to learn. As Linse (2005:6) states that teachers could use interesting techniques or strategies, so that they would be motivated to engage in English lesson. However, conventional methods, such as lecturing and word memorizing are still widely used by English teachers in Indonesia. Certainly, it might influence the process of teaching learning vocabulary. Also, learners could feel bored and tired when the teachers only talk during the class. Therefore,

teachers should be able to teach vocabulary with using techniques and strategies other than conventional methods.

During the preliminary observation, the same problems as this case have been found. The English teacher usually lectures and uses word memorizing in teaching vocabulary. Also, she always asks the students to memorize the words even though they do not know the meaning. Those methods are making students not motivated to learn and unable to identify the meaning of words.

Based on the problems, this research proposes a strategy to use in the process of teaching learning vocabulary, which is called as semantic mapping. Linse and Nunan (2005:89) define semantic maps as meaning maps where information is grouped into different clusters. Therefore, semantic mapping can be used to discover the meaning relationship between vocabulary items besides to improve the process of learning.

Several researches regarding the effect of semantic mapping on teaching learning have been carried out. The first research is conducted by Abdelrahman (2013). It examines the effect of teaching vocabulary through semantic mapping on vocabulary knowledge. The research took place in the department of English language, college of languages and translation at Al-Imam Mohammed Ibin Saud Islamic University. The second is Kasim and Wahyuni (2016) who study the implementation of Semantic Mapping Strategy (SMS) in teaching reading comprehension. The focus of the research is students' reading skills, such as finding main idea, specific information, word references and word meanings. It was conducted at the second year students of a junior high school in Aceh Besar.

In addition, Indriarti (2014) has investigated the effectiveness of using semantic mapping to improve students' vocabulary mastery. It took place at the seventh grade of SMP Negeri 4 Batang in the academic year of 2013/2014.

The researchers agree that semantic mapping has a significant effect on teaching learning process. In vocabulary, semantic mapping has been proved as effective because students could establish the stronger comprehension of the words taught. Also, it could explore the relationships between words and the linked propositions.

This research is different from the previous researches. The previous ones take place at junior high school level and university level, while this research takes place at elementary school level, specifically on the fifth grade. Junior high school and university students are considered as elementary and pre-intermediate level, while the fifth grade is considered as beginner level (See Details in Appendix 1).

The research is entitled "THE USE OF SEMANTIC MAPPING TO INCREASE STUDENTS' VOCABULARY MASTERY". It is conducted at one of the elementary schools in Bandung Barat. It attempts to analyze the development of students' vocabulary mastery after using semantic mapping in the teaching learning process.

B. Research Questions

The problems in this research are formulated in the following questions:

1. What is students' vocabulary before using semantic mapping in English teaching learning process?

2. What is students' vocabulary after using semantic mapping in English teaching learning process?
3. How effective is the use of semantic mapping to increase students' vocabulary mastery?

C. The Aims of the Research

Referring to the research questions mentioned above, this research is aimed at:

1. Finding out students' vocabulary mastery before using semantic mapping in English teaching learning process.
2. Finding out students' vocabulary mastery after using semantic mapping in English teaching learning process.
3. Finding out the effectiveness of semantic mapping to increase students' vocabulary mastery.

D. The Significances of the Research

The significances of this research are as follows:

1. Theoretically, the research is significant for giving valuable knowledge about the use of semantic mapping in teaching vocabulary and the effect to increase students' vocabulary.
2. Practically, the research is significant for: the researcher, the result of this research gives an experience for herself in order to improve her knowledge about teaching English, especially vocabulary; the teachers, the result of this research provides another technique to teach vocabulary in the classroom; the

students, the result is expected to give them a new experience in learning English and can give them motivation to improve their skills in English; and the institution, the research can give another perception to teach vocabulary by using semantic mapping.

E. Research Framework

Vocabulary is one of the most important elements in learning a language. Linse and Nunan (2005:121) state that "vocabulary is the collection of words that an individual knows". Abdelrahman (2013:725) says that vocabulary is the complete set of words used in a language. In addition, Alfaki (2015:1) says that "vocabulary is the words of a language, including single items and phrases or chunks of several words which convey a particular meaning". Thus, it can be concluded that vocabulary is a set of words in a language used by individuals and conveying particular meanings.

According to Cameron (2001:85), there are several basic strategies which might be used to teach vocabulary, namely by using demonstration or pictures (such as objects, gestures, photographs, drawings or diagrams) and by using verbal explanation (such as analytical definition, defining context or translating into another language). Teachers should be able to use various ways in teaching vocabulary in order to give students motivation to learn English. Linse and Nunan (2005: 6) state that teachers are necessary to know what learners find interesting. Therefore, teachers should also consider what kind of strategies which may attract students to actively participate in the teaching learning process.

Graphic organizers are visual assistance to help students memorize new vocabulary and structures. Bromley, DeVitis & Modlo (1999) as cited in Hongkong Curriculum Department Institute (2001:1) define that graphic organizers are used to present important information of a topic visually and it is claimed to be an effective tool to help students understand and get the important information and relationship of the topic. Linse and Nunan (2005:88) mentioned three most popular graphic organizers used in the teaching learning process; those are KWL Chart, Semantic Maps and Venn diagram.

Semantic mapping is one of the most popular graphic organizers which can be used in the teaching learning process. Semantic mapping are meaning maps where information is grouped into different clusters (Linse, 2005). Semantic mapping is one of the most powerful approaches to teach vocabulary because students might be engaged in thinking about word relationships (Graves, 1967 cited in Indriarti, 2014). Students may be involved in a deeper understanding about a word. Indriarti (2014:77) states that semantic mapping allows students to explore their knowledge of vocabulary in the form of maps of words. The maps may consist of diagrams which display a word or phrase in the center and the other words in the branches. In other words, semantic mapping is a strategy which involves students' deeper understanding to present word concepts graphically.

Using semantic mapping in teaching learning process has advantages; for example, students can visualize the knowledge they get during teaching learning process. It would be beneficial for the students who prefer visual learning (Hongkong Curriculum Department, 2001). In vocabulary, students could get a

clear understanding about the relationship among words. As Indriarti (2014:78) states that semantic mapping would help students to discover new concepts and the related words or propositions. Students are also being motivated in learning process, because they are allowed to communicate their ideas and thoughts through graphics (Indriarti, 2014).

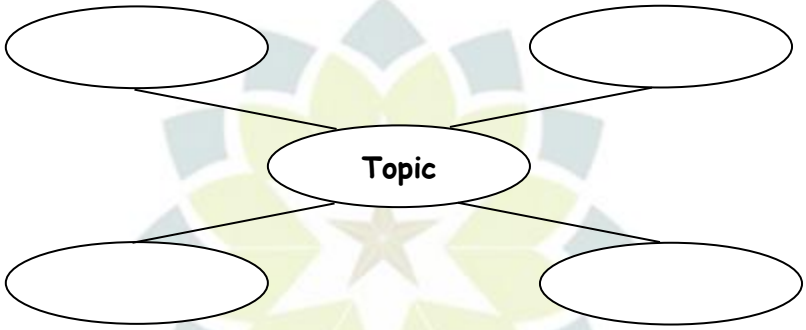

Figure 1.1 the Schema of Semantic Mapping

(Linse and Nunan, 2005)

F. Hypotheses

Hypothesis is a tentative assumption of research problem until it is proved through the data gained (Arikunto, 2007). The independent variable (X variable) of this research is semantic mapping, while the dependent variable (Y variable) is students' vocabulary. In line with the background of the research, the research questions, and the aims of the research, the hypotheses are formulated as follows:

H_a: Semantic mapping is effective to increase students' vocabulary mastery.

H_o: Semantic mapping is not effective to increase students' vocabulary mastery.

G. Research Methodology

The research is quantitative. In quantitative research, the researcher identifies the trends in the field to explain why something occurs and sometimes how one variable affects another (Creswell, 2012). The analysis of quantitative research could be in mathematical procedures, called statistics (Creswell, 2012). This research attempts to measure the effect of semantic mapping on students' vocabulary mastery.

1. Research Design

The design of the research is pre-experimental design, specifically one-group pretest-posttest design. This design only requires one group for the experiment. Ary et al (2010:303) explain that one-group pretest-posttest design usually involves three steps: (1) using a pretest to measure the dependent variable; (2) applying the treatments to the subjects; and (3) using a posttest to measure the dependent variable. This design is described in the following table:

Table 1.1
One-Group Pretest-Posttest Design

Pre-test	Treatments	Post-test
Y_1	X	Y_2

(Ary, Jacobs, & Sorensen, 2010)

2. Research Subject

a. Location of the Research

The research takes place at one elementary school in Padalarang, Bandung Barat, which is SDN Pamucatan. It has seven classes (one first grade, two second

grade, one third grade, one fourth grade, one fifth grade and one sixth grade). The school is chosen because it is based on the information given by the teacher that the most dominated problem in the school regarding English subject is vocabulary.

b. Population

According to Ary, et al (2010), population is all members of any well-defined class of people, events, or objects. The population of this research is all students in the fifth grade at SDN Pamucatan. The total number of the fifth-grade students is 31 students. The fifth grade is chosen based on the assumption that the class will be appropriate for the research. The fifth-grade students are considered to have knowledge and more vocabulary in English than the lower students have.

c. Sample

The research uses total sampling. In total sampling, the whole members of the population are included as the sample (Sugiyono, 2009). The research focuses on the fifth-grade students of SDN Pamucatan in the academic year of 2016/2017. There are 31 students of the fifth grade in SDN Pamucatan included as the sample.

3. Techniques of Collecting Data

The techniques used in this research are tests, observation and documentation. Tests, according to Ary, et al (2010), are a set of questions presented in order to get a numerical score. It is used as an indicator of the characteristics measured. In addition, observation and documentation are used to get specific information about the school in order to support the completion of the research.

a. Pretest

A pretest is given to the participants of the research. According to Creswell (2012), a pretest is used to measure participants' characteristics before they receive a treatment. In this research, the pretest is used to measure students' vocabulary mastery before receiving the treatments using semantic mapping.

b. Posttest

A posttest is given to the participants of the research. According to Creswell (2012), a post-test is used to measure participants' characteristics after they receive a treatment. In this research, the posttest is used to measure students' vocabulary mastery after receiving the treatments using semantic mapping.

c. Observation and Documentation

This research uses observation and documentation techniques to get the specific information about the research location. Also, it is collected to support the completion of the research.

4. Research Procedures

The procedures of the research conducted are:

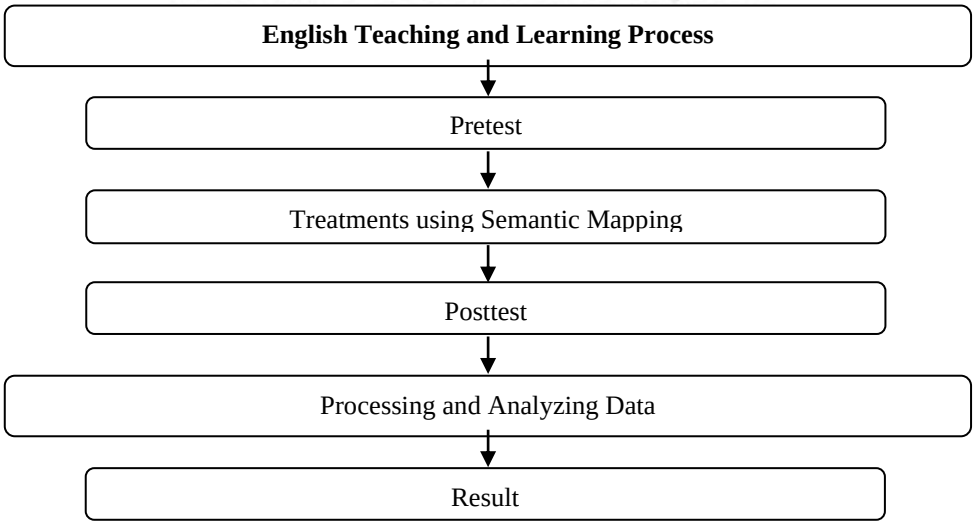

Figure 1.2 The Procedures of the Research

The activities of the research are described below:

Table 1.2

The Activities of the Research

No	Activities	Topic	Subtopics
1	Pre-test		
2	Treatment 1	Profession	The names of the profession
3	Treatment 2		The workplaces of each profession
4	Treatment 3		The jobs of each profession
5	Treatment 4		The tools used by each profession
6	Post-test		

5. Data Analysis

The data in this research is analyzed manually using the following steps:

a. Normality Test

The normality test is conducted to test whether the data is normally distributed or not. The procedures are:

1) Determining the range of the data (R) by using the formula:

R= the highest score – the lowest score + 1 (Sudjana, 2005)

$R= (X_{max} – X_{min}) + 1$

Note:

R = range

X_{max} = the highest score

X_{min} = the lowest score

2) Determining the range of class interval (K) by using the formula:

K = 1+ 3.3 log n (Sudjana, 2005)

Note:

n = number of samples

3) Determining the length of class interval (P) by using the formula:

P = $\frac{R}{K}$ (Sudjana, 2005)

Note:

P = length of class

R = range of data

K = class interval

4) Computing Mean ($\bar{x}$) by using the formula:

$\bar{x} = \sum \frac{fi\, xi}{fi}$ (Sudjana, 2005)

The conversion score is used to measure the average of students' scores. For example, if the mean of the scores is 50, then it is categorized as minus. The conversion score is described below:

Table 1.3

Conversion Score

Score	Character	Value
80 – 100	A	Very Good
66 – 79	B	Good

56 – 65	C	Enough
40 – 55	D	Minus
30 – 39	E	Failed

(Arikunto, 2007)

5) Distribution Table of Frequency

Table 1.4

Distribution Table of Frequency

Score	fi	xi	$fixi$	$xi - \bar{x}$	$(xi - \bar{x})^2$	$fi\,(xi - \bar{x})^2$

(Sudjana, 2005)

6) Determining standard deviation (SD) by using the formula:

$$SD = \sqrt{\frac{\sum f_i\,(x_i - \bar{x})^2}{n-1}}$$ (Sudjana, 2005)

7) Arranging the distribution of observation and expectation frequency by using table below:

Table 1.5

Table of Distributions of Observation and Expectation Frequency

Score	O_i	Class Limit	$Z_{count} = \frac{BK - \bar{x}}{SD}$	Z_{table}	L_i	$E_i = L_i$ x n	$\chi^2 = \Sigma \frac{(Oi - Ei)2}{Ei}$

(Sudjana, 2005)

8) Determining Chi Square count (χ^2_{count}) by using the formula:

$$\chi^2 = \Sigma \frac{(Oi - Ei)2}{Ei}$$ (Sudjana, 2005)

9) Determining Chi Square table (χ^2_{table}) on the significance of 5% or α=0,05

a) Determining the degree of freedom (DF) by using the formula:

DF = K- 3 (Sudjana, 2005)

b) Determining Chi Square table (χ^2_{table})

χ^2_{table} (See Table in Appendix 1)

10) Interpreting the normality of the data by the criteria as follows:

a) The data is normally distributed if $\chi^2_{count} < \chi^2_{table}$

b) The data is not normally distributed if $\chi^2_{count} > \chi^2_{table}$

b. Hypothesis Test

The hypothesis test is done by testing the data. The procedures are described below:

1) According to Subana, et al (2000), if the data is normally distributed. The parametric statistic test is conducted by t-test.

a) Determining t_{count} by using the formula:

$$t = \frac{M_d}{\sqrt{\frac{\sum d^2 - \frac{(\sum d)^2}{n}}{n\,(n-1)}}}$$

Note:

M_d = the average from gain between the pretest and the posttest

d = score gain of the posttest toward the pretest of each object

n = number of subjects

b) Determining t_{table}

t_{table} (See Table in Appendix 1)

c) Interpreting the hypotheses:

If $t_{count} > t_{table}$, H_a is accepted and H_o is rejected, it means that semantic mapping is effective to increase students' vocabulary mastery.

If $t_{count} < t_{table}$, H_a is rejected and H_o is accepted, it means that semantic mapping is not effective to increase students' vocabulary mastery.

2) According to Sugiyono (2009), if the data is not normally distributed, the data is analyzed with the Wilcoxon Test.

a) Determining Z_{score} by using the formula:

$$Z = \frac{T-\mu_T}{\delta_T}$$

Note:

T = number of the lowest range/rank

$$\mu_T = \frac{n\,(n+1)}{4}$$

$$\delta_T = \sqrt{\frac{n(n+1)(2n+1)}{24}}$$

$$Z = \frac{T-\mu_T}{\delta_T} = \frac{T-\frac{n(n+1)}{4}}{\sqrt{\frac{n(n+1)(2n+1)}{24}}}$$

b) Determining Z_{table}

Z_{table} (See Table in Appendix 1)

c) Interpreting the hypotheses:

If $Z_{count} > Z_{table}$, H_a is accepted and H_o is rejected, it means that semantic mapping is effective to increase students' vocabulary mastery.

If $Z_{count} < Z_{table}$, H_a is rejected and H_o is accepted, it means that semantic mapping is not effective to increase students' vocabulary mastery.

c. N-Gain

To measure the improvement of students' vocabulary mastery after using semantic mapping, normal gain (g) is used with the formula:

$$g = \frac{Posttest\ Score - Pretest\ Score}{Maximum\ Score - Pretest\ Score}$$

Then, normal gain score acquired is interpreted into the following table:

Table 1.6

Normal Gain Interpretations

Score	Interpretation
$g > 0.7$	High
$0.3 \leq g \geq 0.7$	Average
$g < 0.3$	Low

(Hake, 1999)