

# CHAPTER I

## INTRODUCTION

### A. BACKGROUND

Language is the human capacity for acquiring and using complex systems of communication, and a language is any specific example of such a system. In learning language, it means that people also learn about the vocabularies because it is the most important part of language, not only in a native language but also in a foreign language. We use the vocabularies in communication; we try so sending messages, sharing the ideas or information by using the language. In general, no language acquisition is possible without understanding the vocabulary, either in the first or the second language (Kweldju, 2004:18).

Every language definitely has its own vocabularies which distinguish one another. According to Hornby (1995:1331) cited in Schmitt (2000), vocabulary is a total number of words which (with rules of combining them) make up a language. In using English, one needs to have a great number of vocabularies so that she or he could easily express her or his thoughts in communication. In addition, Wilkins (1972:111) cited in Thornbury (2002:13) states that “without grammar very little can be conveyed, without vocabulary nothing can be conveyed. In learning vocabulary, people will experience development each year with their age. According to Richard (1989) cited in Schmitt (2000) for native speakers of language, they continue to expend their vocabulary in adulthood. In social role and mode of discourse taking

place in adulthood, in vocabulary there is continued development beyond the childhood years with adults constantly adding new words to their vocabulary through reading, occupation, and other activities. The primary conceptual developments, however, is early childhood. Cameron (2000) states that children are often more enthusiastic and lively as learners.

Learning vocabulary is not like ticking off items on a shopping list when they have been bought. Learning vocabulary is a continual process. It needs to be met and recycled at interval, in different activities, with new knowledge and new connections developed each time the same words are met again (Cameron, 2001: 84). Students need to meet and use the words again and again so that it is available for use in the longer term. In this matter, each of students may have some difficulties or they need such a variety technique in order to improve their vocabulary mastery in different teaching learning atmosphere.

Teacher as the student's facilitator must creatively use the appropriate technique which will be proportional with the student learning achievement. Based on the problem above, the researcher recommends one of English teaching technique especially in teaching vocabulary to improve the student's vocabulary mastery by using Spreading Activation Network Technique. Spreading Activation Network is an important explanatory construct that was developed within network theory as a fundamental memory retrieval mechanism (Anderson, 1983)

This technique is also called as semantic network in psycholinguistic term because it directly related to the human retrieving system especially when they

receive the information about the word. According to Anderson (1983) when part of the memory is activated, activation spreads along the associative pathways to related areas in memory. It is a visual technique for vocabulary expansion and extension of knowledge by displaying in categories words related to one another. In this technique, students are asked to brainstorm and think of ideas or words related to the central word. For example teacher gives the keyword “Red” then asks the student to think about the word and write down as many as words they have on their memory which related to the keyword. Students may come up with words color, flower, fire, and so on. After that, teacher and student can categorize the word based on each word categorize.

Based on the explanation above, the researcher is interested in conducting an experimental study about **THE EFFECTIVENESS OF USING SPREADING ACTIVATION NETWORK TECHNIQUE TO IMPROVE THE STUDENT’S VOCABULARY MASTERY at 6<sup>th</sup> Grade of Al-Masoem Elementary School, Rancaekek, Bandung**

UNIVERSITAS ISLAM NEGERI  
SUNAN GUNUNG DJATI  
BANDUNG

## **B. RESEARCH QUESTION**

1. How good is student’s ability in mastering vocabulary by using Spreading Activation Network Technique?
2. How good is the student’s ability in mastering vocabulary without using Spreading Activation Network Technique?

3. How effective is the use of Spreading Activation Network Technique to improve the student's vocabulary mastery?

### **C. THE PURPOSE OF RESEARCH**

1. To find out the student's ability in mastering vocabulary by using Spreading Activation Network Technique.
2. To find out the student's ability in mastering vocabulary without using Spreading Activation Network.
3. To find out the effectiveness of using Spreading Activation Network Technique to improve the student's vocabulary mastery.

### **D. THE SIGNIFICANCES OF RESEARCH**

The results of this research are expected to provide some valuable advantages for the teacher, student, the researcher itself and also for the reader

- a. For the teacher

Teacher is the main actor who plays the most important role as the student's facilitator; teacher cannot use only one teaching technique because each student has difference comprehension in learning process, so this research may become one of the teaching reference techniques to be applied and helping them to improve their English skill especially in vocabulary mastery.

- b. For the students

Students as the object of this research definitely will experience and approve the process of Spreading Activation Network Technique which is

applied by the teacher; they will get the positive results because this teaching technique directly helps them drilling their cognitive skill.

c. For the researcher

By implementing this research, the researcher will get more knowledge about teaching technique and the effectiveness for student's ability in mastering the vocabulary.

d. For the reader

Hopefully this research will become a reference for those who need it as an additional material or used as a comparative study toward the other teaching method.

## **E. RATIONALE**

Vocabulary is one of the language aspects which should be learnt. Learning vocabulary is important because we are able to speak, write, and listen nicely we have to know vocabulary first. A person said to 'know' a word if they can recognize its meaning when they see it (Cameron, 2001: 75). It means that in learning vocabulary we have to know the meaning of it and also understand and can use it in sentence context.

In learning vocabulary automatically we have to know the meaning of words itself and can use it in sentences. Wilkins (1972: 130) cited in Thornbury (2002) states that vocabulary learning is learning to discriminate progressing the meaning of words in the target language from the meanings of their nearest 'equivalent' in the mother tongue. It is also learning to make the most appropriate lexical choices

for particular linguistic and situational context. Every learner may have the different way to improve their ability in mastering vocabularies based on what the teacher have provided the learning method and technique in teaching those vocabularies. For example when they have to develop the words, determine the usage, meaning, formation and so on.

Most of the teachers commonly use the ordinary technique such as by using games, vocabulary pocket, puzzle, short story, etc. Whereas, teacher not only can use the old technique regularly to be applied but they also can creatively create such a new technique in English learning and teaching process in order to make a variety atmosphere in the classroom activity especially in teaching vocabularies. So here the researcher tries to apply the new technique by using Spreading Activation Network Technique.

This technique is actually a part of psychology subject which discusses about human word retrieving, it also relates to semantic term especially in how someone use their memory to make some words based on the keyword he got. This model has been explained by Collins and Loftus in (Dradjowijojo, 2008) the concept is stated in the interconnected nodes. The distance between one node to another node show the proximity between one concept to another concept which has a relationship; the closer is the distance, the closer also the concept. This model does not include in hierarchical system but it is a kind of the network which has a complex connection in each concept. For instance, a concept of flower is not only has connection with the rose and violet, but it also connects with red color and even the fire engine.

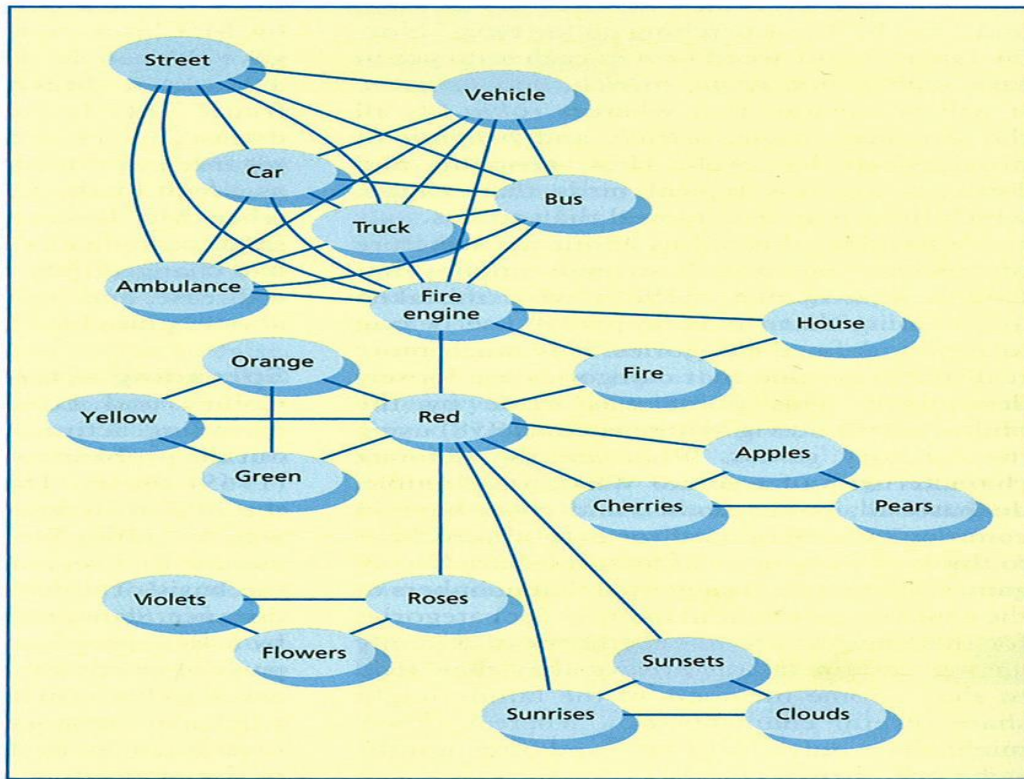
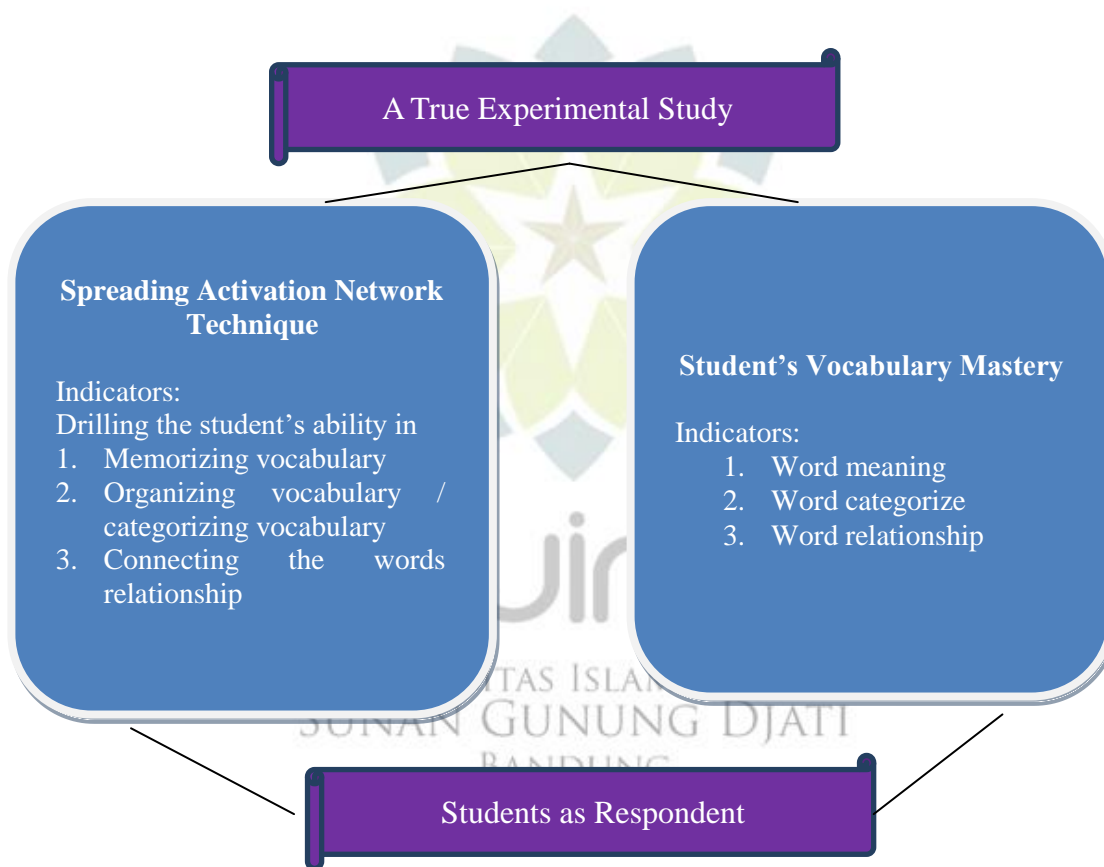


Figure 1.5.1:  
Spreading Activation Network Model

The system of this model is: if one concept is activated, then the stream of electricity will spread to other concepts related. The stream will be stronger if the distance is close; in contrast it will be smaller if the distance is further. Thus, the amount of time is taken for comprehending a sentence like an orange is fruit will be shorter than for the sentence which state that orange is vegetable because orange and fruit have a close distance compared with orange and vegetables.

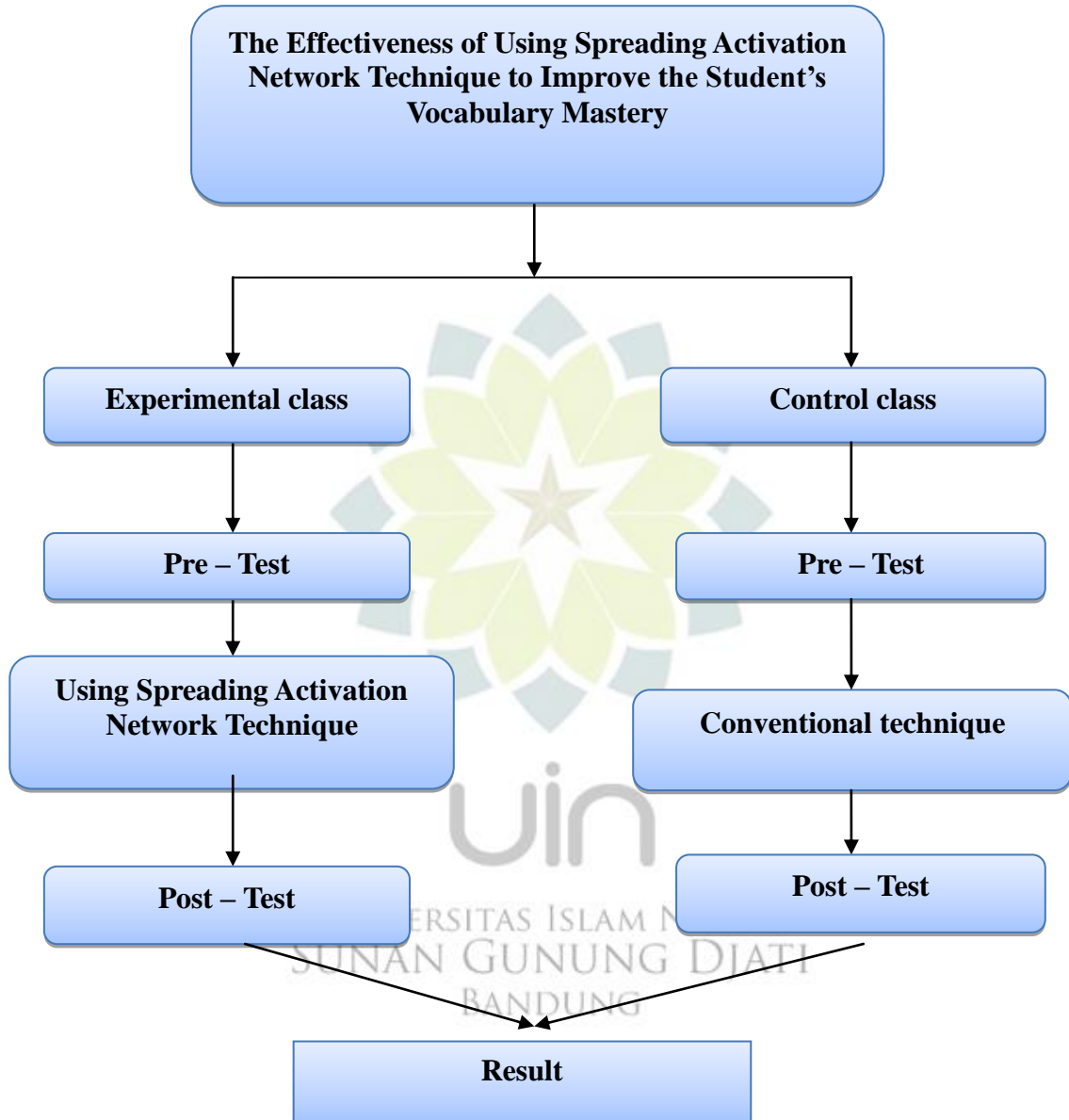
Based on the explanation about spreading activation network above, the researcher decided to use this technique in teaching student's vocabulary mastery. By using their memory system, students are trained to memorize and then write down the

words that certainly has the closest meaning with the keyword which has given by the teacher then they can write as many as the words they knew. This research used two kinds of variable, the first is Spreading Activation Network Technique as the X variable, and the second is the student's vocabulary mastery as the Y variable. The variable studied can be seen in the figure below:



*Figure 1.5.2:  
Indicator of Spreading Activation Network and Student's Vocabulary Mastery*





*Figure 1.5.3*  
*Research Scheme*

## F. HYPOTESIS

Hypothesis is a combination of the word "hypo" means under, and "thesis" which means truth. Overall hypothesis means that under truth (not necessarily true) and be appointed as a new truth if it had been accompanied by the evidence. (Suharsimi Arikunto, 2000: 57). Thus, according to Suharsimi, an alternative hypothesis is that the answer allegations made by the researchers for the problems posed in the research. The answer alleged a temporary truth; the truth will be tested with data collected through research. With that position, according to the hypothesis Suharsimi may turn out to be the truth, but also can be uprooted as truth. This research has two variables; Spreading Activation Network Technique as variable X and Student's Vocabulary Mastery as variable Y. In connection with problem is about The Effectiveness of Spreading Activation Network Technique to Improve The Student's Vocabulary Mastery at 6<sup>th</sup> Grade of Al-Masoem Elementary School. The Hypothesis in this research is:

1.  $H_0$  accepted if  $t_{\text{account}} < t_{\text{table}}$ : it means that there is null hypothesis, nothing happened of Spreading Activation Network Technique to improve the student's vocabulary mastery
2.  $H_1$  accepted if  $t_{\text{account}} > t_{\text{table}}$ : it means that there is alternative hypothesis and something happened of Spreading Activation Network Technique to improve the student's vocabulary mastery

The hypothesis that was proposed will test the validity with statistic by the collected data.

## **G. METHODOLOGY OF RESEARCH**

### **1. Determining source of data**

#### **a. Location of research**

This research will be conducted at 6<sup>th</sup> Grade of Al-Masoem Elementary School, Rancaekek, Bandung. Based on my teaching practice experience at second grade in one of Senior High School in Bandung, I found that there are some student's difficulties in mastering vocabularies, especially when they read a simple passage or create a sentence, most of them always ask to the teacher and then they will easily forget about the vocabularies that they have already known. So that I plan to conduct this research in Al-masoem Elementary School because this teaching technique is appropriate to be taught in Elementary level. In addition, Leontiv (1989:211) states that language learning in an early age of a child (6-12 years old) has a deceptive effect. His language development will be greatly affected by his experience in learning the language. When he has undergone the right track of learning, his language acquisition will develop smoothly. Therefore, teaching English to children should be done in such a way that children could benefit more.

#### **b. Population**

Population or universe is the total number of units or individuals whose characteristic will be investigated, the units called as the analysis unit, it can be the people, institutions, objects, and so on. (Djarwanto,

1994: 420). There are 180 students of 6<sup>th</sup> Grade of Al-Masoem Elementary School as the population in this research.

c. Sample

Sample is part of the population which will be investigated (Djarwanto, 1994:43). A Good sample, which the conclusion can be imposed on the population, is a sample that is representative or to describe the characteristics of the population. So for this research there are only 2 classes that will be used as the sample; class A and class B which has been chosen based on the probability sampling technique. This technique provides equal opportunities to every member of the population to be elected as members of the sample.

Table 1.1

Sample of 6<sup>th</sup> Grade of Al-Masoem Elementary School

VI A			VI B		
Male	Female	Total	Male	Female	Total
9	11	20	10	10	20

2. Dividing the group of research

In this research the respondent will be divided into two groups, the first is the experiment class and the second is control class.

3. Preparation

a. Determining Method of Research

Kasiram (2008) cited in Kuntjojo (2009), defining that quantitative research is a process to find knowledge by using the data in the form of numbers as a means of analyze information on what they want to know. In this research, one important step is to make the design of the study. The study design is basically a strategy to achieve the research objectives defined and serve as guidelines or guiding researchers on the whole research process. This research uses a Quantitative True Experimental Study, according Arikunto (2010), it has the characteristics of the control group and the exclusion of the experimental group was randomly determined.

b. Technique of Collecting Data

1) Test

The main data get by using:

a. Pre – test

This is the first measure of the condition students understanding English.

b. Treatment

In this process the classes will be divided into two group, they are experimental group by using Spreading Activation Network Technique, and the control group by providing direct instruction in the meaning of words. In experimental group, students will be divided again in several group of work, after that, teacher gives the material

about vocabulary in certain term with different theme of each group, and then they will work in group to do the assignment by using the Spreading Activation Network Technique. While in control group, teacher only uses the conventional technique in teaching vocabulary based on their own background knowledge.

c. Post – test.

Post – test as a result after students already given the treatment of teaching learning process. The implementation of post-test is conducted in the class. This test used to know the influence of the experiment being conducted toward experimental group and to know how far students are able to master the vocabularies by using Spreading Activation Network Technique and without using Spreading Activation Network Strategy. And which one is better.

2) Non - Test

a. Observation

According to Arikunto (2010), observation is monitoring through the activities of concentration the attention toward one object with using all of the sense. Other said that observation is technique to investigate the condition of the location. The researcher observes the objective conditions of students, teachers, learning process and the facilities in 6<sup>th</sup> Grade of Al-Masoem Elementary School Bandung.

b. The literacy book or library reference

The literacy book or library reference which could support this research

#### D. DATA ANALYSIS

According to Subana (2000:38), determining the normality of data by conducting the steps as follows:

$$\begin{array}{l} \text{E} \quad : \text{O}_1 \quad \text{X} \quad \text{O}_2 \\ \text{C} \quad : \text{O}_1 \quad \text{O}_2 \end{array}$$

E : Experiment

C : Control Class

O<sub>1</sub> : Pre-test

O<sub>2</sub> : Post-test

X : Treatment

———— : Experimental and control class are resulted from random

According to Subana (2000:38), determining the normality of data by conducting the steps as follows:

c. Making the distribution table of frequency, with procedures:

1) Determining range (R)

$$R = [H - L] + 1$$

2) Determining class interval (K)

$$K = 1 + 3,3 \log$$

3) Determining the length of interval (P)

$$P = \frac{R}{K}$$

4) Table frequency of frequency distribution

Table 1.2  
Distribution of frequency

Class Interval	$X_i$	$f_i$	$f_i \cdot x_i$	$x_i^2$	$f_i \cdot x_i^2$
1	2	3	4	5	6

d. Determining central tendency, mean, median and modus. According to Subana (2000: 65) are as follows:

Determining mean

$$X = \frac{\sum f_i \cdot x_i}{\sum f_i}$$

e. Looking for the standard deviation by using formula according to Sudjana (1988:93) are as follows:

$$S = \sqrt{\frac{\sum f_i \cdot (x_i - x)^2}{n-1}}$$

f. Arranging the distribution of observation and expectation frequency by using the tables as follows:

Table 1.3  
Arranging the distribution observation and expectation frequency

Class Limit	$Z_{Count}$	$Z_{Table}$	$L_i$	$O_i$	$E_i$	$X^2 = \text{count}$
1	2	3	4	5	6	7



- g. Determining Chi square count ( $\chi^2$ ) according to Subana (2000:124) by using formula

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

- h. Determining the degree of freedom with formula

$$df = K - 3$$

- i. Interpreting data normality by comparing Chi square count ( $\chi^2$ ) and Chi Square table ( $\chi^2_{table}$ ) with formula:

- IF ( $\chi^2 < \chi^2_{table}$ ), this data is normal
- IF ( $\chi^2 > \chi^2_{table}$ ), this data is not normal

#### 4. Homogeneity Analysis

Subhana (2000:162) says that the analysis involves the steps of determining homogeneity of two variances by conducting the steps as follows:

- a) Determining score F by using Formula:

$$F = \frac{V_k}{V_d}$$

- b) Determining the degree of freedom of the data:

$$Df_1 = n_1 - 1$$

$$Df_2 = n_2 - 1$$

- c) Determining homogeneity of the data with criterion:

It is called homogenous if  $F \text{ table} < F \text{ Count}$

It is called not homogenous if  $F \text{ Table} > F \text{ Count}$

d) Testing hypothesis by using T-test formula as follows:

$$t = \frac{X_1 - X_2}{dsg \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

$X_1$  = mean of post-test of the experiment group

$X_2$  = mean of post-test of the control group

$n$  = the total number of cases

$dsg$  = cumulative standard deviation on f the experiment group

$$dsg = \sqrt{\frac{(n_1 - 1)V_1 + (n_2 - 1)V_2}{n_1 + n_2 - 2}}$$

$V_1$  = the post-test standard deviation of the experiment group

$V_2$  = the post-test standard deviation of the control group

e) Coefficient of determination (CD)

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

$$r = \frac{n \sum x_1 y_1 - (\sum x_1)(\sum y_1)}{\sqrt{\{n \sum x_1^2 - (\sum x_1)^2\} \{n \sum y_1^2 - (\sum y_1)^2\}}}$$

Explanation:

N = the number of students

X = the middle score of pre – test

Y = the middle score of post – test