

**THE EFFECT OF USING GAME ON STUDENTS  
VOCABULARY ACHIEVEMENT AT GRADE VII OF SMP NEGERI 12  
PEMATANGSIANTAR**

**A RESEARCH REPORT**

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## ABSTRACT

### **Sinaga, Yanti Kristina: THE EFFECT OF USING GAME ON STUDENTS VOCABULARY ACHIEVEMENT AT GRADE VII OF SMP NEGERI 12 PEMATANGSIANTAR**

This study is a research on the effect of using game on students' vocabulary achievement at grade VII of SMP NEGERI 12 PEMATANGSIANTAR. In this study, the writer will solve the question which existed in this research, namely: "Is there any significant effect of using game on the students' vocabulary achievement at grade VII in SMP NEGERI 12 PEMATANGSIANTAR?"

To overcome the problem above, the writer used some theories, namely: Yakin (1993), Nation (1990), Clark & Fairburn (1997), Napa (1991), Cameron (2001), Salim (2008), Huyen&Nga (2003), Thornbury (2002), Nagy (1984), Hudgins (1964), Slattery and Jane (2001), Bredemeier&Grenblat (1991), Shaptoshvili (2002), Carrier (1980), Elly (1971), Lewis (2006), Lee (1963), Scivener (1994), Hadfield (1999), Asmawir and Usman (2002), Wharton (1995) and Arikunto (2010).

In this study, the writer used quantitative methodology. The samples are 60 students. Those are two classes. The writer focuses on two classes. Each of class has 30 students. The VII-A is 30 students. The VII-B is 30 students. The VII-A class for control group and the VII-B class for experimental group. The object of this study are cross puzzle and word puzzle about animals at grade VII of SMP NEGERI 12 PEMATANGSIANTAR. The students fill the cross puzzle and word puzzle. To get the data for this research, the writers ask the students to fill the cross puzzle and word puzzle about animals. To analyse the data, the writer used Jhon Haycraft.

The data analyses and interpretation shows that the average score in experimental class is more than control class; There is a significant effect to increase the students' vocabulary achievement; The findings are appropriate with the theories using game; The students in experimental class felt interesting, easy and have high desire to repeat the lesson again by using this lesson model. The total of the test in control class shows that the average score are low and in experimental class shows that the average score are high.

Finally, the writer concluded that the students in experiment group at grade VII of SMP NEGERI 12 PEMATANGSIANTAR are more effective after using game than before. The writer gives the pre – test in one group design vocabulary without using game and the post – test in one group design is by using game, the using game has an effect in teaching students' vocabulary achievement at grade VII of SMP NEGERI 12 PEMATANGSIANTAR and the result of analyzing the data, the score of t – test is higher than t-table ( $5,51 > 2,00$ ).

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Syallom.....

God bless us

Pematangsiantar, September 2016

The writer

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# **CHAPTER 1**

## **INTRODUCTION**

### **1.1 Background of the Study**

A successful educational program depends on several factors, which include the characteristic of teaching and learning strategies and teachers' perception in teaching materials for teaching learning. All of them must be integrated and organized to support a successful teaching-learning process in the classroom. On the other hand, if one of them does not function properly, the program will not run well. In presenting the materials they should be suitable to the level of the students.

Students however, always get much trouble to achieve a great success in learning vocabulary. Yakin (1993:57) pointed out facts of unsuccessful achievement of learning English, one of them is a very low mastery of vocabulary.

As a matter of fact very little attention is paid to vocabulary teaching, we can see from the teachers' perception that the students can automatically improve their vocabulary by themselves like simply learning the other skill, for instance reading can do it. This situation makes teachers less creative in finding the effective methods or techniques in teaching vocabulary.

Vocabulary plays a very important role in learning English. Based on the experience during Teacher Training Practice, the writer found the students had a very low level of vocabulary. This made the students lazy to study and they did not pay attention and enthusiasm to English subject when they were studying.

Vocabulary is very essential for success to comprehend the language well, speak better, or composed a good writing; it is expected that the learners have to increase their vocabulary by around 1000 words a year (National, 1990: 22). Similarly, based on the Competency Based Curriculum, the students are required to increase their vocabulary 1000-1500 word every year so that in three years students have mastered their vocabulary around 4000 words (Clark & Fairburn 1997: 67).

In learning language, vocabulary always becomes the first aspect that must be mastered before the other components of language that supports one skill of English competences. Therefore, Napa (1991) observed that learning English vocabulary takes an important position. It means that when people lack of vocabulary in English, they can not speak English well, write a sentence well, comprehend a text well, and absolutely can not understand about what the other people say.

Playing game in teaching vocabulary is very important because teaching through game can create a fun situation and of course can increase students' motivation. Game not only helps the students to encourage them in learning but also can help the teacher to create useful and meaningful context (Cameron, 2001).

However, Salim (2008) in his research stated that vocabulary is not an easy item to be mastered in learning English, so that to make students enable to master English vocabulary easily, some possible ways should be applied and one of them is teaching vocabulary by using game. A game is used as a learning aid. Teaching vocabulary by using game is enjoyable not bored. Media as teaching aids are needed to help the students' understanding in vocabulary. It is also used to stimulate the students' motivate on and students' interest to the lesson. Teaching vocabulary by using game can motivation students and make them interested in learning English. Visual reference can increase students' interest and motivate them to learn vocabulary at the result, learning vocabulary can be enjoyable.

Some teachers have presented some techniques in teaching vocabulary but in fact, there are still many students whose vocabulary mastery is still very poor, including grade VII as the object place of this study. This case can be proved that when the English teacher of SMP NEGERI 12 PEMATANGSIANTAR explains the materials in English, students are confused and they don't understand what the teacher says. Besides, when English subject is delivered in the class, most of students do not understand the context of the text and they do not know the meaning of vocabularies in the text. After having an observation in SMP NEGERI 12



PEMATANGSIANTAR, the writer gets the information from the English teacher that the students are very difficult to learn or memorize new vocabularies. To solve this problem, the writer attempts to present or to teach them by using game. The writer uses the game in teaching vocabulary because the students in junior high school are very interested.

By looking at the importance of vocabulary, the writer writes a research about students' vocabulary achievement through game. The writer believes that to solve the lack of students' vocabulary should be taught by using various techniques in presenting vocabulary. As Napa (1991:1) stated that the vocabularies are developed using different methods and techniques such as words, games, crossword puzzle, snakes, coil words, etc. The purpose is of course to make the material more enjoyable, interesting and challenging. Furthermore, Huyen and Nga (2003) said that games are seen as a time-filling activity in most English classrooms. They believe that games are just for fun and they have effect in teaching and learning. The students' interest and motivation can be achieved under teaching vocabulary with game. They will be enthusiastic in memorizing new words.

## **1.2 The Identification of Problem**

There are some problems on students' vocabulary achievement, namely:

- 1.The students' vocabulary was still poor.
- 2.The students were confused and they didn't understand what the teacher said.
- 3.Students do not understand the context of the text and they did not know the meaning of vocabularies in the text.

## **1.3 Scope of the Study**

The scope of this study is focused on seeing the effect of using game to the students' achievement vocabulary through game at grade VII in SMP NEGERI 12 PEMATANGSIANTAR. The scope of this study is concerned with noun and

adjective. The reason for the writer to take only noun and adjective because based on English text book which is used at grade VII in SMP NEGERI 12 PEMATANGSIANTAR, the most appeared topics are noun and adjective. Kind of games are matching pictures (students match the pictures based on the name), crossword puzzle (students fill the blank boxes), colour chain (students sit in line and the leader of the group will whisper the word to the other) and fast, freaky animals (students draw the picture of animal then ask the other to guess).

#### **1.4 The Problem of the study**

Based on the background of the study, the writer formulates the research questions of this study as: “Is there any significant effect of using game on the students' vocabulary achievement at grade VII in SMP NEGERI 12 PEMATANGSIANTAR?”

#### **1.5 The Objective of the Study**

The objective of the study is to find out whether the using of game affects the students' vocabulary achievement in of the objective of this study, it is intended to find out the result of the application of using game to increase students' vocabulary achievement.

#### **1.6 The Significance of the Study**

The result of this research is expected to give both theoretical and practical significance to teaching and research related to the effect of using game on the students' vocabulary achievement. They are described as follows: theoretically this research is hoped to be beneficial for students in improving their knowledge in vocabulary. The students are hoped to be able to use vocabulary in their sentence or writing. By using game, it is hoped able to increase the student's motivation in studying English. Furthermore, the students' can encourage their vocabulary by using

new words in sentences. These theories can be transferred in communication academically. It was not only beneficial for students but also for teacher. Through this research, the teacher can give an input in teaching learning process. Teacher can give some contributions for other English teachers to improve the quality of teaching English vocabulary in junior high school and the last, the teacher can help their students to improve their vocabulary achievement by using game. Furthermore, the next researchers get knowledge in vocabulary.

### **1.7 Hypothesis of the Study**

Based on the description of the effect of using game, the study formulates. The hypothesis as follows:

Ha : “There is a significant effect of using game on students’ vocabulary achievement at grade VII of SMP NEGERI 12 PEMATANGSIANTAR”.

Ho : “There is no significant effect of using game on students’ vocabulary achievement at grade VII of SMP NEGERI 12 PEMATANGSIANTAR”.

### **1.8 Theoretical Framework**

In this study, the writer uses some theories. They are Yakin (1993), Nation (1990), Clark & Fairburn (1997), Napa (1991), Cameron (2001), Salim (2008), Huyen & Nga (2003), Thornbury (2002), Nagy (1984), Hudgins (1964), Slattery and Jane (2001), Bredemeier & Grenblat (1991), Shaptoshvili (2002), Carrier (1980), Elly (1971), Lewis (2006), Lee (1963), Scivener (1994), Hadfield (1999), Asmawir and Usman (2002), Wharton (1995) and Arikunto (2010).

## 1.9 Key Terms of the Study

To avoid misunderstanding about this study, the writer gives the definition of terms used in this study as follows:

1. Vocabulary is a collective word with brief explanation of their meaning.
2. Achievement is the changing of the behavior or the changing of the knowledge that has been experienced by a man who has learned.
3. Game is an activity that you do to have some fun.
  - a. Matching: The students match the words based on the picture
  - b. Crossword puzzle: The games that guess the words/letters by filling the boxes.
  - c. Colour chain: The game that consists of some groups, each group should sit in lines and the leader of the group whisper the colour down the line. The last player on each team must tell the colour.
  - d. Fast, freaky animals: The students draw the picture of animal and the other will guess.
4. Noun is a word used as the name of a person, place or writing.

## **CHAPTER II**

### **REVIEW OF RELATED LITERATURE**

#### **2.1 Vocabulary**

Vocabulary is the total number of words which make up a language (Oxford advance dictionary, 1995:133). Vocabulary is a very important part of English language. One can construct some words to make awntences and for communication with other people and for reading text.

Vocabulary is the total number of words, which make up a language (Homy 1986:133). Nation (1990) says that vocabulary is a word or words that should be mastered by someone, which are used by group of people in an environment. Thus vocabulary is a number of words.

According to Haycraft (1984:44) vocabulary can be classified into two kinds. They are active vocabulary and passive vocabulary. Active vocabulary refers to the words the students should use in speaking and writing, while passive vocabulary means words they needs only to comprehend especially in reading and listening.

The word derived from a combination of two or more stems producing a new meaning and known as a compound word. The forming of words by various ways can extend the number of vocabulary of any language.

Knowledge of morphology gives much help to students to increase their vocabulary. However, the knowledge of morphology itself cannot fully assure the success of understanding written of or oral language, because the usage of every language depends on the context. Thus, the context understanding and ability to relate words to the context are still the basic knowledge to be passed by students to get the meaning of the whole context.

Webster's dictionary say that vocabulary “ A collection of words arranged alphabetically for reference and define or explain the special stock of words employed by individual, in business, or an author”. In other dictionary Webster says

that “vocabulary is a list of words and sometimes, phrase usually arranged in alphabetical order and define as dictionary, glossary, or lexicon, all the words used by a particular person, class, profession”. Sometimes many words are recognized and understood by particular person, although necessarily used by him.

According to Webster’s New International Dictionary, a language has 450.000 words. So it is impossible for anyone to be able to master all vocabulary (words) of a certain language even the vocabulary of his or her own language. As a part of language system, vocabulary is interrelated with grammar.

### **2.1.1 The Importance of Vocabulary**

Without grammar very little can be conveyed, without vocabulary nothing conveyed. This is how the linguist David Wilkins summed up the importance of vocabulary learning.

While Dellar H and Hocking D (in Thornbury, 2002:13) say that you will see most improvement if you learn more words and expression. You can say very little with grammar, but you can you almost anything with words. So a person may be judged by other based on their vocabulary.

Vocabulary has several types. Jhon Haycraft (1978:44) divides vocabulary into two types, namely:

1. Active vocabulary

Active vocabulary is the words which the student understands, can pronounce correctly and use constructively in speaking and writing.

2. Passive vocabulary

Passive vocabulary is the words which the student recognizes and understands when they occur in a context, but which he cannot produce correctly himself.

Vocabulary is very useful for anyone who is studying a foreign language. Of someone has a large vocabulary, he will speak English well and vice versa.

### 2.1.2 Teaching Vocabulary

Teaching is seen as an activity one tries to help and to lead someone in getting, changing or developing skills, attitude, ideas, appreciation and knowledge. It is supported by Homby (1986:886) who says that teaching is to give instruction to somebody, or cause somebody to know or be able to do something, give to somebody knowledge, skill and give lessons at school. Moreover, teaching itself as defined in terms of educational objectives is the process of delivering material from teachers to students, and as a result, there will be a changing habit in the students, behavior.

In teaching and learning vocabulary, it is important for the teacher to know how to teach the vocabulary. According to Wallace there are 9 principles in teaching vocabulary:

1. Aims

Teacher has to be clear about his or her aim, how many things are listed and what he teacher expected the learner to be able to do. Unless the teacher makes this point clear, it will be difficult to assess how successful the vocabulary learning has been.

2. Quantity

After deciding the aims in learning vocabulary, the teacher has to consider the quantity of vocabulary to be learned, how many words, and the learners can learn. The teacher selects the words that suit the level of the students' proficiency.

3. Need

Teacher creates a certain situation. He or she communicates and gets the words he or she needs. The teacher is an informant. The vocabulary is then presented in response to the students' own need and interest and then she or he perhaps is more likely to remember it after asking the information. The students will satisfy with that he or she needs as the target word.

4. Frequent Exposure and Repetition

However, we seldom remember a new word simply by hearing it once. There has to be a certain amount of repetition until there is evidence that the students have learned the target words. A vocabulary must be used as often as possible.

5. Situational Presentation

Using words must be related to the situation. In the line with how well the user knows the addressee. It seems sensible that the students should learn words in the situation in which they are appropriately.

6. Meaningful Presentation

The learner must have a clear and specific understanding of what it denotes or refers to, such as its meaning. It requires that the word will be presented in such way that its denotation or references is perfectly clear and unambiguous, which is not always an easy task.

7. Presentation in Context

Words very seldom occur in isolation. The meaning of a word can be influenced by other factors in the context. It is important for the learner to know the usual collocations where a word occurs. The circumstances in which the event happens can influence the meaning of a word.

8. Learning vocabulary in the mother tongue in the target language

It is very different to learn vocabulary in the mother tongue from learning it in the target language. The teacher must provide both types of teaching.

9. Inference procedures in vocabulary learning.

It is impossible for the students to master all vocabulary of certain language. He or she needs various specifically the meanings of words. He or she may look on a dictionary without understanding all the meaning by making inference from the context or guessing their meanings from the context, he or she can understand the words.

### **2.1.3 The Student Achievement in Vocabulary**



Evaluation of students' achievement is necessary. Teaching must give scores to the students' work in order to know success in teaching and the students' achievement in learning. The goal of evaluation is not only to know the students' achievement but also the development and the progress of the students.

According to Crow (1987:347) "Evaluation of pupils' progress is major aspects of the teachers' job". A good picture of where the pupil and how he is progressing is fundamental of affective learning by the students.

Based on definitions, it can be concluded that the evaluation conducted at school is meant to evaluate the students' progress and the development in mastering the knowledge skill, attitude and value. However, the evaluation can motivate learning because:

1. The students who get good scores will be motivated to study hard.
2. The students who get lower scores will realize their weak and they will try to develop their achievement better.

The teacher must consider how the evaluation can be used to motivate the students', as the following:

1. Education lasts continually and so does the evaluation. The achievement got at the time should be connected with the time before or in the present.
2. Evaluation should be done objectively. So, like or dislike is not available in the process but it should be done objectively.

In teaching vocabulary, the teachers' role to rise up their students' motivation is very important. The teachers' skill can also influence the students' in developing their ability whether in writing, reading, listening or speaking.

To improve students' ability in learning English they must be given a variation in teaching especially in vocabulary through affixes because through it the students can improve their knowledge about word building, and another reasons are teaching through affixes to avoid the students from bored and make

the students' study hard. The successful level in achieving those aspects is influenced by the teachers' which is made as a variation of the materials that they have taught in the class.

## **2.2 Vocabulary Achievement**

Vocabulary achievement is a word refers to meaning and number of words that produced by students to comprehend the language well, speak better, or compose a good writing; it is expected that learners have to increase their vocabulary by around 1000 words a year (National: 1990:22). Low-frequency lexical items (the ones that are characteristic of individuals with a wide vocabulary) occur more frequently in written than in spoken language. Similarly, based on the competency Based Curriculum, the students are required to increase their vocabulary 1000-1500 word every year so that in three years students have mastered their vocabulary around 4000 words (Clark, D.M, & Fairburn C.G. 1997).

An important source of vocabulary in L2 learning is a wide range of contexts. Learners can learn lexical items if they are exposed to sufficient amounts of comprehensible input. Nagy (1984: 304- 330) claims that an average learner can learn to recognize up to 1000 words a year from written materials. As has already been stated, the role of the context in initial stages of learning is limited, but its significance grows as the learner's knowledge expands. An ideal source for learning L2 vocabulary from context is reading. Besides, the learner has more time at his or her disposal for analysis, hypothesis testing and inference if working on a written text. Context-based inference contributes to the knowledge of morphological rules, collocations, additional meanings (for it is the context that determines the meaning of a lexical unit), etc. However, mere exposure during reading does not guarantee a rapid vocabulary growth. In order to accelerate the process, the learner must have critical strategic knowledge that will enable him or her to turn the incidental learning into an explicit learning process.

Travers (1970:447) states that achievement is the result of what an individual has learned from some education experience. Additionally, Yelon, Weinstein, and Weener (1977:301) express achievement as the successfulness of individual, while another source Smith and Hudgins (1964:95) says that achievement is to do one's best, to be successful to accomplish tasks requiring skill and effort and to be recognized by authority. Completely, achievement is the result, the successfulness, the extent or ability, the progress in learning education experiences that the individual indicates relation with his/her educational learning. Achievement concerns with what someone has actually learnt whereas aptitude is the potential for learning something. In other words, achievement is a success in reaching particular goal/status or standard, especially by effort, skill, courage, and so on. In this study, the achievement is referred to number of words.

### **2.3 Game**

Huyen and Nga (2003) said that learners of English have to deal with unfamiliar vocabulary during their language acquisition, so they should participate in different task-based activities in their classroom such as vocabulary games which especially focus on helping learners develop and use words in different context by making the lesson enjoyable.

In other hand, Slattery and Jane (2001) explain that game can help the learners to create context in which the language is useful and meaningful. He also argues that in increasing vocabulary, teachers should need media to be used. One of them is game. Game can makes students more focus in learning because they do not feel they are forced to learn.

Games are considered to help and encourage the students to make the effort to win because they will be given a lot of opportunities to practice their language more freely (Bredemeier & Greenblat, 1991). In addition, Shaptoshvili (2002) said that

game not only engage students in an enjoyable and challenging activity with a clear goal but also can provide practice in another key area i.e. vocabulary. Such games facilitate initial practice and periodic revision of vocabulary in an enjoyable context, thus making classroom vocabulary study an amusing and satisfying experience for teacher and student alike.

Game has many advantages in learning. According to Carrier (1980), Gerlach and Elly (1971) and Cameron (2001), the advantages of game are as follows:

- a. It can be used to change the pace of a lesson and to maintain motivation
- b. It can encourage students to interact and communicate.
- c. It can increase students' vocabulary and to reduce the dominance of the classroom by the teacher.
- d. It can act as a testing mechanism, in the sense that they will expose areas of weakness and the need for remedial work.
- e. It can make students seek to solve problem in which they are intimately involved.
- f. It can be used to punctuate long formal teaching units and review students' energy before returning to more formal learning.
- g. It is motivating and challenging.
- h. It can help students to make and sustain the effort of learning
- i. Vocabulary games bring real world context in to the classroom, and increase the students' use of English in a flexible, meaningful and communicative ways.
- j. It usually involves friendly competition and they keep students interested in learning the language.
- k. It can help the students learn and hang on to new words more easily.

Besides offering many advantages, games are also very useful, as Lewis (2006) explains that the positive sides of games attract the students to learn English because they are fun and make them want to have experiment, discover and interact with their environment. He adds other advantage of games, they are:

- a. Games add variation to a lesson and increase motivation by providing a plausible incentive to use the target language. For many children between four and twelve years old, especially the youngest, language learning will not be the key motivation factor. Games can provide this stimulus.
- b. The games context makes the foreign language immediately useful to the children. It brings the target language to life. The games make the reason for speaking plausible even to reluctant children.
- c. Through playing games, students can learn the way children learn their mother tongue without being aware they are studying; thus without stress, they can learn a lot.
- d. Even shy students can participate positively

### **2.3.1 Crossword Puzzle**

In *New Lexicon Webster's Dictionary* of the English language, crossword puzzle is a puzzle in which checkered square with blank space must be filled in with interlocking words (reading horizontally and vertically) deduced from clues. Crossword is puzzle in which words have to be guessed from clues and written in spaces in a grid (Oxford Learner dictionary; 2003:103). A crossword is a word puzzle that normally takes the form of a square or rectangular grid of white and shaded squares (<http://www.wikipedia.org>). Puzzle is game that you have to think about carefully in order to answer it or do it (Oxford Learner dictionary; 2003:349). Puzzle is game or toy to exercise the mind (Longman Handy Learners' Dictionary of American English: 2000:336). From some definitions above, the writer can conclude some definition of crossword puzzle:

1. Crossword puzzle is a game that you have think about carefully which is checkered square with blank space must be filled in with interlocking words (reading horizontally and vertically) deduced from clues.

2. Crossword puzzle is a game to exercise the mind which is checkered square with blank space must be filled in with interlocking words (reading horizontally and vertically) deduced from clues.
3. Crossword puzzle is a game that you have to think about carefully which is consist of words that written in space in a grid.
4. Crossword puzzle is a game to exercise the mind which is consisting of words that written in space in a grid.
5. Crossword puzzle is a game that you have think about carefully which is normally takes the form of a square or rectangular grid of white and shade square.
6. Crossword puzzle is a game to exercise the mind which is normally takes form of square or rectangular grid of white and shade square.

In Longman Handy Learners' Dictionary of American English (2000: 99), crossword puzzle is printed game in which words are fitted into numbered square. Crossword puzzle is a game which is consists of words in the grid that has to think carefully to guess from the clue and can be exercise the mind.

### **2.3.1.1 Crossword Puzzle as a Game**

In the definition above shows that crossword puzzle is a game. In our daily live, It can be an exercise our mind which is done in our free time as a filler. In teaching learning process, it can be a game which helps the students in improving vocabulary. Furthermore, the statement below will show that crossword puzzle is one kind of games. There is the type of games that usually called fillers. These are not mainly games, but they are activities, which can be turned into games by incorporating the competitive element to them, they consist of:

- a. Quizzes are not games as their name indicates; however, games can become quizzes. One of the purposes of games is for the teacher to evaluate students' knowledge. They are generally used in an end-of lesson activity to check student's retention.

- b. Riddles, whose main goal is to develop students' listening or reading comprehension? It can improve students' vocabulary too (Lee; 1963:124). For Example, the teacher said, "What do we use to cut our meet? "Write down your answer on your paper". (The answer is knife)
- c. Crossword puzzles, which are mainly focused on vocabulary and spelling practice. Crossword puzzle can improve the students' vocabulary by filling the words in the clues and reading the clues of crossword puzzle. Sometimes, the teacher gives the clues of crossword puzzle orally, so the students listen and write down the clues. It can train the students' spelling and listening.

In teaching and learning process, this game can be practiced by ask the class to look back over words that they have studied in the class two or three days. This could now continue as a competitive learn game or as a class effort, trying to make the grid as big as possible. The students could take over the writing once the rules have been established. It might help to divide the board up into square beforehand, through the game work well enough without, so long as the writing in clear (Scrivener, 1994:108)

This game can use in teaching vocabulary, because through crossword puzzle, the students can think and playing the letters to make some words and to improve their vocabulary mastery.

Using games is an activity with rules a goal and an element of fun. In teaching vocabulary, the using of games in the methodology of language teaching is very important and interesting, this is caused by many teachers will use the traditional words and aspect the students to memorize the words as soon as possible and as much as possible (Hadfield, 1999:4).

In the other hand, besides the using games as a method, the using of crossword in teaching and learning medium is give the crucial rules, because it is as the server of stimuli of information, attitude, and others. Medium is also giving the role to arrange the steps of development to give the stimulus and response (Asmawir and Usman, 2002:13).

### **3.2.1.2 The Kind of Crossword Puzzle**

In teaching vocabulary by using crossword puzzle, there is some kinds of crossword puzzle which can be done the students, they are: (Lee; 1963:126)

a. Oral crossword.

The oral crossword is the crossword which is the clue is given orally by the teacher, and the students just get the blank crossword. Only give the students the puzzle with no clues what so ever. Give the clues orally. In a foreign language class, this can be an excellent listening activity. Tell students to fill in what they can and then repeat the clues once more at the end.

b. Picture crossword

Picture crossword is the crossword which is the clue consists of picture. Only give the students the puzzle with no clues. For each clue, hold up a picture. This works especially well with a unit that involves a lot of new vocabulary.

c. Object crossword

The object crossword is the crossword in which the clue is written on the object. Only give students the blank puzzle with no clues. Place the items around the room, each labeled with their clue number. Have students rotated around the room to different stations; allow them to pick up the objects as they complete the puzzle. This tactile version of the puzzle is great for those students who are hand son learners. This type of puzzle works well for units with a lot of vocabulary.

### **3.2.1.3 The Procedure of Presenting Crossword Puzzle**

In presenting crossword puzzle, the teacher can do the various ways. The procedure of presenting crossword puzzle must make the students are interested to do the crossword puzzle. The various procedures are possible (Lee; 1963:135):

a. The teacher gives the same crossword for each student. They solve individually with the help of written clues.



- b. The teacher divides the class into groups. Then the teacher gives a different crossword for each group. Everyone in the group helps to solve it. However, if there is a more active member in one group, they tend to do all the work. In otherwise, if there is a more passive member in one group, they will difficult to do all the work.
- c. Teacher gives crossword puzzle for all of students. They do the crossword individually. Then the teacher divides the class into groups and then they work in groups. The students can share their answer to finish their crossword in their group.
- d. The teacher write crossword on the board, but no written clues. The teacher gives clues orally and solves the crossword step by step with the class. The class is divided into groups and each group come to the board and writes the words in one by one.

### **3.2.2 The Use of Crossword Puzzle in Teaching Vocabulary**

The crossword puzzle is still the most popular word game. It lies in the ease with which it can be constructed. The words are run together horizontally and vertically. Wharton (1995: 48) stated that crossword puzzle for use in the language classroom is really quite easy to create. First, make a list of words with which your students should be familiar. Then, search for a letter common to two words and you are off. The puzzle forms may be used in several ways:

1. The students find animals, colors, or plants in the puzzle.
2. The students find certain parts of speech: verb, noun, preposition, etc.
3. Other categories may include the names of the days, the week, months, school subjects.
4. The student finds proper nouns: cities, states, countries, famous people, etc.
5. The student finds certain kinds of activities: trades, professions, sport, hobbies, etc.

This game can be done in individual, in pair, or in groups. The teacher gives a copy of the “crossword puzzle” and explains the rules, such as students have to

complete it as quickly as possible. For the individual game, the student who can complete it first is the winner and gets the good point from the teacher. In pair work or group, the winner is the pair or group who can complete it first. All of the winners will have prizes from the teacher. It makes this game to be more attractive. The use of crossword puzzle game in teaching vocabulary is one of the alternative techniques to help the students to construct and improve their vocabulary mastery. Moreover, crossword puzzle can be one of activities in practicing vocabulary which can help the students to be more familiar with the words, recognize the words, manipulate and remembering the words (Scrivener; 1994: 83).

## **CHAPTER III**

### **THE METHODOLOGY OF RESEARCH**

This chapter is deal with the method and procedure that is used to solve the problem of the research. The writer has written some theories in the previous chapter and based on those theories, the writer describes design of study, subject of the study, object of the study, instruments of the study, technique of collecting data, technique of analyzing data, and procedure of study.

#### **3.1 Design of the Study**

This research is quantitative research which uses is experimental study consists of experimental class and control class. Research design is really needed by a writer in order to know the way to analyze the data of the study. The research design in this study is a pre experimental design, by using one group experiment; they are pre-test and post-test design. In this case, the present researcher analyzed students' vocabulary achievement before and after giving treatment by using game.

#### **3.2 Population and Sample of the Research**

##### **3.2.1 Population**

Population is the total of research subject. According to Arikunto (2010:173) population is all of the subject research. If the people want to observe all of elements in areas observation is called population. The population in this study consists of 2 classes of the seven grade of SMP NEGERI 12 PEMATANGSIANTAR. The total populations are 60 students.

##### **3.2.2 Sample**

According to Arikunto (2010:174) sample is apart that taken from the population. It is considered as the representative of the research if we generalize the result of that sample research. The samples are 60 students. Those are two classes. The writer

focuses on two classes. Each of class has 30 students. The VII-A is 30 students. The VII-B is 30 students. The VII-A class for control group and the VII-B class for experimental group.

<b>Class</b>	<b>Control group</b>	<b>Experimental group</b>
VII-A	30 students	-
VII-B	-	30 students

### **3.3 Instrument of Collecting Data**

Instrument is a device that is used for collecting data. According to Arikunto (2006:126) Instrument is the device the researchers uses to collect data is called instrument. They are two tests. They are pre-test and post-test. To get the data of this research is the writer gives tests by asking them to fill the cross puzzle and word puzzle about animals at grade VII of SMP NEGERI 12 PEMATANGSIANTAR.

### **3.4 Technique of Collecting Data**

In collecting data, the writer gives pre-test first, then treatment for four times and ended with post-test to the students. The writer uses one game in each meeting in treatments because there are four games that were used.

In collecting the data, the writer used the procedure as follow:

a. Pre-test

Pre-test is given before treatment. Pre-test is conducted to find out the result and the mean scores of the experimental group by giving test.

b. Treatment

The treatment is conducted four times by using games in class A and without games in class B. Both of classes are taught by using the same material. Every meeting spends about 80 minutes.

c. Post-test

Post-test is given after the treatment finished. The objective of this is to get the data about the result of treatment to be analyzed in order to know the improvement of students' vocabulary achievement at the grade VII students Sw. HKBP Ambarita.

### 3.5 The Validity of the Test and Reliability of the Test

#### 3.5.1 The Validity of the Test

$$r_{xy} = \frac{N \sum XY - (\sum X) - (\sum Y)}{\{N \sum X^2 - (\sum X)^2\} - \{N \sum Y^2 - (\sum Y)^2\}}$$

Details:

$r_{xy}$ : observed correlation

N : total of samples

X : students' Morphological Awareness score

Y : students' Vocabulary score

$\sum X$  : the sum of students' Morphological Awareness score

$\sum Y$  : the sum of students' Vocabulary score

$X^2$  : X square;

$Y^2$  : Y square

$\sum X^2$ : the sum of X square

$\sum Y^2$ : the sum of Y square

XY: X times Y

$\sum XY$ : the sum of multiplication of X and Y

The result of the correlation computation was then interpreted based on Arikunto (2010).

### **3.6 The Technique of Analyzing Data**

In order to know whether there is any effect of using game on students' vocabulary achievement, the difference score is calculated t-test.

The formula of t-test is as follows:

## CHAPTER IV

### DATA ANALYSIS

This chapter discusses the result of the research. It has been done by the research to find of the students' vocabulary achievement that was taught by using mind mapping technique. There is significant difference between the students were taught by without using picture and using picture. The researcher analyzes content, organization, vocabulary, language use and mechanics in students' vocabulary achievement.

#### 4.1 The Effect of without using picture

After applying the Pre – Test and Post – Test to the control group and the researcher finds the students' score. The result of the Pre – Test and Post – Test from control group can be seen in the table 1.

**Table 1**  
**The Result of Pre-test and Post-test from Control group**

No	Name of Students	Pre - Test X	Post – Test Y
1	Afryana Margaretha Siahaan	15	50
2	Alexander Pratama Hutajulu	20	75
3	Anita Yulianti Sinaga	15	80
4	Armi Saputra Silitonga	20	35
5	Dina Rajagukguk	15	65
6	Dody Martunas Manurung	45	50
7	Erwin Sinurat	40	70
8	Ester Sitanggang	25	45
9	Ester Theresia Sijabat	45	55
10	Ewin Riskaya Pardede	25	60

No	Name of Students	Pre - Test X	Post – Test Y
11	Gefi Oktafia Hutagalung	25	45
12	Gunawan Syahputra Marpaung	35	45
13	Hana Sheli Aprilia Manalu	30	65
14	Josua Kanna Varo Siburian	40	50
15	Juliana Manullang	35	40
16	Kezia Avelia K. Simanjuntak	30	60
17	Lentaria Siregar	40	55
18	Lusmy Nainggolan	35	65
19	Marisa Manullang	50	60
20	Mayerpal R. Oppusunggu	30	35
21	Melani Napitupulu	35	75
22	Nicholas Brandow Saragih	40	55
23	Pande T. Simanjuntak	35	70
24	Rendi Rotama Aritonang	35	60
25	Reyvaldo Siringoringo	40	65
26	Rosmina Anjelika Pardede	50	55
27	Tiurma Silaban	30	70
28	Eva Simaremare	40	65
29	Rosella Pangaribuan	35	60
30	Ella Ambarita	30	35
	<b>Total (<math>\Sigma</math>)/n</b>	$\Sigma X = 985/30 = 32,8$	$\Sigma Y = 1715/30 = 51,2$

Mean of Pre – Test in control group:

$$\text{Mean} = \frac{\Sigma x}{n} = \frac{985}{30} = 32,8$$

Mean of Post – Test in control group:

$$\text{Mean} = \frac{\Sigma y}{n} = \frac{1715}{30} = 51,2$$

Based on the data above, after the data is analyze, it shows that the mean (M) in Pre – test is 32,8 and the median is 35. the highest score is 50 and the lowest score is 15.



Based on the data above, after the data is analyze, it shows that the mean (M) in Post – test is 51,2 and the median is 60. the highest score is 80 and the lowest score is 35.

#### 4.1.1 The Level of the Students' in Control group in Pre – Test

$$N = 30$$

$$\sum X = 985$$

$$\sum (X)^2 = 970225$$

$$\text{Mean} = 32,8$$

Standard Deviation (SD)

$$SD = \frac{1}{n} \sqrt{\{(n\sum X^2) - (\sum X)^2\}}$$

$$SD = \frac{1}{30} \sqrt{(30 \times 35075) - (985)^2}$$

$$SD = \frac{1}{30} \sqrt{1052250 - 970225}$$

$$SD = \frac{1}{30} \sqrt{82025}$$

$$SD = \frac{1}{30} (286.4)$$

$$SD = 9.54$$

So, the level of the students' scores in Pre – Test in control group

$$\text{Mean } (\bar{x}) = 32.8$$

$$\text{Standard Deviation (SD)} = 9.54$$

Level of Scores	The Criteria
High	$\bar{x} + S$ $32,8 + 9,54$ $42,34$
Median	$\bar{x} - \leftrightarrow \bar{x} + S$ $32,8 - 9,54 \leftrightarrow 32,8 + 9,54$ $23,26 \leftrightarrow 42,34$
Low	$\bar{x} - S$ $32,8 - 9,54$ $23,26$

Classification of the students' scores in Pre – Test

Level of Scores	The Criteria	Number of Students
High	More than 42,34	4
Median	Between 23,26 – 42,34	21
Low	Under 23,26	5

#### 4.1.2 The Level of the Students' Scores in Control Group in Post – Test

$$N = 30$$

$$\sum Y = 1715$$

$$\sum (Y)^2 = 102425$$

$$\text{Mean} = 57,2$$

Standard Deviation (SD)

$$SD = \frac{1}{n} \sqrt{\{(n\sum X^2) - (\sum X)^2\}}$$

$$SD = \frac{1}{30} \sqrt{(30 \times 102425) - (1715)^2}$$

$$SD = \frac{1}{30} \sqrt{3072750 - 2941225}$$

$$SD = \frac{1}{30} \sqrt{131525}$$

$$SD = \frac{1}{30} (362,663)$$

$$SD = 12,1$$

So, the level of the students' scores in Post – Test in control group

Mean ( $\bar{x}$ ) = 57,2

Standard Deviation (SD) = 12,1

Level of Scores	The Criteria
High	$\bar{x}+S$ 57,2+ 12,1 69,3
Median	$\bar{x} - S \leftrightarrow \bar{x} + S$ 57,2-12,1 $\leftrightarrow$ 57,2+ 12,1 45,1 $\leftrightarrow$ 69,3
Low	$\bar{x}- S$ 57,2-12,1 45,1

Classification of the students' scores in Post – Test

Level of Scores	The Criteria	Number of Students
High	More than 69,3	6
Median	Between 45,1 -69,3	20
Low	Under 45,1	4

#### 4.2 The Effect of Using Picture

After applying the Pre – Test and Post – Test to the experimental group the researcher finds the students' score. The result of the Pre – Test and Post – Test from control group can be seen in the table 2.

**Table 2**  
**The Result of Pre-test and Post-test from Experimental group**

<b>No.</b>	<b>Name of Students</b>	<b>Pre - Test X</b>	<b>Post – Test Y</b>
1	Abdillah Raja Sidauruk	15	45
2	Anapon Siadari	45	75
3	Cahya Winata	30	65
4	Chintya Damai Saragih	45	85
5	Cindi Aghata Pasaribu	15	75
6	Daniel Johan Simanjuntak	45	70
7	Dasmando Victory Silalahi	50	60
8	Dasmauli Purba	15	60
9	Dheo Alfharizi Naibaho	25	65
10	Enjel E. Tambunan	40	70
11	Erwin Hutabarat	15	85
12	Firman Adrianus Geya	50	75
13	Grace P.S. Siahaan	30	55
14	Irfan Rifaldo Simanjuntak	30	60
15	Janet Siburian	25	70
16	Joel Answer Van Houten Silalahi	35	65
17	Joel Eben Simanjuntak	40	65
18	Lagustin Matondang	15	70
19	Lia Manurung	40	85
20	Meina Sinaga	25	60
21	Melati Susi Sihotang	30	90
22	Melysa Evynda Togatorop	20	50
23	Mesra Ulina Panjaitan	40	55
24	Weny Ambarita	15	55
25	Octavia Kainama	30	55
26	Riris Silalahi	20	80
27	Risky Ananda Siburian	35	70
28	Rismauly Septiana Sitorus	15	90
29	Sri Wahyuni Purba	20	90
30	Yogi Ihsan Pardede	15	80
	<b>Total (<math>\Sigma</math>)/n</b>	$\Sigma X = 870/30 = 29$	$\Sigma Y = 2075/30 = 69,2$

Mean of Pre – Test in experiment group:

$$\text{Mean} = \frac{\sum x}{n} = \frac{870}{30} = 29$$

Mean of Post – Test in experiment group:

$$\text{Mean} = \frac{\sum y}{n} = \frac{2075}{30} = 69,2$$

Based on the data above, after the data is analyze, it shows that the mean (M) in Pre – test is 29 and the median is 30. the highest score is 50 and the lowest score is 15.

Based on the data above, after the data is analyze, it shows that the mean (M) in Post – test is 69,2 and the median is 70. the highest score is 90 and the lowest score is 45.

#### 4.2.1 The Level of the Students' in Experiment group in Pre – Test

$$N = 30$$

$$\sum X = 870$$

$$\sum(X)^2 = 29300$$

$$\text{Mean} = 29$$

Standard Deviation (SD)

$$SD = \frac{1}{n} \sqrt{\{(n\sum X^2) - (\sum X)^2\}}$$

$$SD = \frac{1}{30} \sqrt{(30 \times 29300) - (870)^2}$$

$$SD = \frac{1}{30} \sqrt{879000 - 756900}$$

$$SD = \frac{1}{30} \sqrt{122100}$$

$$SD = \frac{1}{30} (349,42)$$

$$SD = 11,64$$

So, the level of the students' scores in Pre – Test in experiment group

$$\text{Mean } (\bar{x}) = 29$$

$$\text{Standard Deviation (SD)} = 11,64$$

Level of Scores	The Criteria
High	$\bar{x}+S$ 29+ 11,64 40,64
Median	$\bar{x}-\leftrightarrow \bar{x} + S$ 29 – 11,64 $\leftrightarrow$ 29+ 11,64 17,36 $\leftrightarrow$ 40,64
Low	$\bar{x}- S$ 29 – 11,64 17,36

Classification of the students' scores in Pre – Test

Level of Scores	The Criteria	Number of Students
High	More than 40,64	5
Median	Between 17,36-40,64	17
Low	Under 17,36	8

#### 4.2.2 The Level of the Students' Scores in Experiment Group in Post – Test

$$N = 30$$

$$\sum Y = 2075$$

$$\sum(Y)^2 = 148075$$

$$\text{Mean} = 69,2$$

Standard Deviation (SD)

$$SD = \frac{1}{n} \sqrt{\{(n\sum X^2) - (\sum X)^2\}}$$

$$SD = \frac{1}{30} \sqrt{(30 \times 148075) - (2075)^2}$$

$$SD = \frac{1}{30} \sqrt{4442250 - 4305625}$$

$$SD = \frac{1}{30} \sqrt{136625}$$

$$SD = \frac{1}{30} (369,62)$$

$$SD = 12.32$$

So, the level of the students' scores in Post – Test in experiment group

Mean ( $\bar{x}$ ) = 69,2

Standard Deviation (SD) = 12,32

Level of Scores	The Criteria
High	$\bar{x} + S$ 69,2+ 12,32 81,52
Median	$\bar{x} - S \leftrightarrow \bar{x} + S$ 69,2-12,32 $\leftrightarrow$ 69,2+ 12,32 56,88 $\leftrightarrow$ 81,52
Low	$\bar{x} - S$ 69,2-12,32 56,88

Classification of the students' scores in Post – Test

Level of Scores	The Criteria	Number of Students	%
High	More than 81,52	5	17 %
Median	Between 56,88 –81,52	19	63 %
Low	Under 56,88	6	20 %

### 4.3 Data Analysis

The data were taken from the sample in SMP NEGERI 12 PEMATANGSIANTAR were 60 sample which were divided into two group namely, control and experiment group. The data was collected from pre – test and post – test after applying the test to control and experiment group. The result from both groups can be seen below:

1. The result of pre – test and post – test of control group:
  - a. The total score of pre – test: 985
  - b. The mean of the pre – test: 32
  - c. The highest score of pre – test: 50
  - d. The lowest score of pre – test: 15
  - e. The total score of post – test: 1715
  - f. The mean of the post – test: 57,2
  - g. The highest score of post – test: 80
  - h. The lowest score of post – test: 35
2. the result of pre – test and post – test of experimental group:
  - a. The total score of pre – test: 870
  - b. The mean of the pre – test: 29
  - c. The highest score of pre – test: 50
  - d. The lowest score of pre – test: 15
  - e. The total score of post – test: 2075
  - f. The mean of the post – test: 69,2
  - g. The highest score of post – test: 90



h. The lowest score of post – test: 45

#### 4.3.1 Testing the Validity of the Test in Experiment Group

**Table 3**

No.	Name of Students	Pre – Test (X)	Post – Test (Y)	X <sup>2</sup>	Y <sup>2</sup>	XY
1	Abdillah Raja Sidauruk	15	45	225	2025	675
2	Anapon Siadari	45	75	2025	5625	3375
3	Cahya Winata	30	65	900	4225	1950
4	Chintya Damai Saragih	45	85	2025	7225	3825
5	Cindi Aghata Pasaribu	15	75	225	5625	1125
6	Daniel Johan Simanjuntak	45	70	2025	4900	3150
7	Dasmando Victory Silalahi	50	60	2500	3600	3000
8	Dasmauli Purba	15	60	225	3600	900
9	Dheo Alfharizi Naibaho	25	65	625	4225	1625
10	Enjel E. Tambunan	40	70	1600	4900	2800
11	Erwin Hutabarat	15	85	225	7225	1275
12	Firman Adrianus Geya	50	75	2500	5625	3750
13	Grace P.S. Siahaan	30	55	900	3025	1650
14	Irfan Rifaldo Simanjuntak	30	60	900	3600	1800
15	Janet Siburian	25	70	625	4900	1750
16	Joel Answer Van Houten Silalahi	35	65	1225	4225	2275
17	Joel Eben Simanjuntak	40	65	1600	4225	2600
18	Lagustin Matondang	15	70	225	4900	1050
19	Lia Manurung	40	85	1600	7225	3400
20	Meina Sinaga	25	60	625	3600	1500
21	Melati Susi Sihotang	30	90	900	8100	2700
22	Melysa Evynda Togatorop	20	50	400	2500	1000
23	Mesra Ulina Panjaitan	40	55	1600	3025	2420
24	Weny Ambarita	15	55	225	3025	825
25	Octavia Kainama	30	55	900	3025	1650
26	Riris Silalahi	20	80	400	6400	1600
27	Risky Ananda Siburian	35	70	1225	4900	2450
28	Rismauly Septiana Sitorus	15	90	225	8100	1350
29	Sri Wahyuni Purba	20	90	400	8100	1800
30	Yogi Ihsan Pardede	15	80	225	6400	1200

<b>Total n=30</b>	$\Sigma X =$ 870	$\Sigma Y =$ 2075	$\Sigma X^2 =$ 29300	$\Sigma Y^2 =$ 148075	$\Sigma XY =$ 60470
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### The calculation of the Validity Test in Experiment Group

$$r_{xy} = \frac{n \Sigma XY - (\Sigma X) - (\Sigma Y)}{\{n \Sigma X^2 - (\Sigma X)^2\} - \{n \Sigma Y^2 - (\Sigma Y)^2\}}$$

Detail:

$r_{xy}$  = the validity of the test (experiment group)

$n$  = number of student

$\Sigma XY$  = total of students score

$\Sigma X$  = total of students score in pre – test

$\Sigma Y$  = total of student score in post – test

$\Sigma X^2$  = total of students score in pre – test

$\Sigma Y^2$  = total of student score in post – test

The validity of the test (experiment group)

$$\Sigma X = 870 \qquad \Sigma Y = 2075$$

$$\Sigma X^2 = 29300 \qquad \Sigma Y^2 = 148075$$

$$\Sigma XY = 60470 \qquad n = 30$$

$$r_{xy} = \frac{n \Sigma xy - (x)(y)}{\sqrt{(n \Sigma x^2 - (\Sigma x)^2)(n \Sigma y^2 - (\Sigma y)^2)}}$$

$$r_{xy} = \frac{30(60470) - (870)(2075)}{\sqrt{(30(29300) - (870)^2)(30(148075) - (2075)^2)}}$$

$$r_{xy} = \frac{1814100 - 1805250}{\sqrt{879000 - (870)^2)(4442250) - (2075)^2}}$$

$$r_{xy} = \frac{8850}{\sqrt{(122100)(136625)}}$$

$$r_{xy} = \frac{8850}{\sqrt{16681912500}}$$

$$r_{xy} = \frac{8850}{40843}$$

$$r_{xy} = 0.22$$

The criteria of validity are as the following:

$$0,91 < r_{xy} < 1,00 = \text{very high}$$

$$0,71 < r_{xy} < 0,90 = \text{high}$$

$$0,41 < r_{xy} < 0,70 = \text{fair}$$

$$0,0 < r_{xy} < 0,40 = \text{low}$$

Based formula, the writer finds the coefficient ( $r_{xy}$ ) was 0,22, it means ( $0,41 < 0,22 < 0,70$ ) that belongs to fair and the test was valid.

#### 4.3.2 Testing the Reliability of the Test in Experiment Group

The calculation of the reliability of the test was analyzed by using the Arikunto formula as follows:

$$r_{11} = \frac{2xr \frac{11}{12}}{1+r \frac{11}{22}}$$

$$r_{11} = \frac{2(0.22)}{1+0.22}$$

$$r_{11} = \frac{0.44}{1.22}$$

$$r_{11} = 0.36$$

Based the calculation of reliability, it claims that the reliability of items

classified as follows:

- 0,00 – 0,04 : the reliability is low
- 0,41 – 0,70 : the reliability is significant
- 0,71 – 0,90 : the reliability is high
- 0,91 – 1,00 : the reliability is very high

The reliability of the test was 0,36 and it means that the validation is significant.

#### 4.3.3 Testing the Validity of the Test in Control Group

The test was valid for the purpose of the test has sufficient evidence that correlate with ability to be tested for the test, it was calculated by using the formula as follows:

**Table 4**  
**The Calculation of the Validity Test in Control Group**

<b>N0.</b>	<b>Name of Students</b>	<b>Pre – Test X</b>	<b>Post – Test Y</b>	<b>X<sup>2</sup></b>	<b>Y<sup>2</sup></b>	<b>XY</b>
1	Afryana Margaretha Siahaan	15	50	225	2500	750
2	Alexander Pratama Hutajulu	20	75	400	5625	1500
3	Anita Yulianti Sinaga	15	80	225	6400	1200
4	Armi Saputra Silitonga	20	35	400	1225	700
5	Dina Rajagukguk	15	65	225	4225	975
6	Dody Martunas Manurung	45	50	2025	2500	2250
7	Erwin Sinurat	40	70	1600	4900	2800
8	Ester Sitanggang	25	45	625	2025	1125
9	Ester Theresia Sijabat	45	55	2025	3025	2475
10	Ewin Riskaya Pardede	25	60	625	3600	1500
11	Gefi Oktafia Hutagalung	25	45	625	2025	1125
12	Gunawan Syahputra Marpaung	35	45	1225	2025	1575
13	Hana Sheli Aprilia Manalu	30	65	900	4225	1950

<b>N0.</b>	<b>Name of Students</b>	<b>Pre – Test X</b>	<b>Post – Test Y</b>	<b>X<sup>2</sup></b>	<b>Y<sup>2</sup></b>	<b>XY</b>
14	Josua Kanna Varo Siburian	40	50	1600	2500	2000
15	Juliana Manullang	35	40	1225	1600	1400
16	Kezia Avelia K. Simanjuntak	30	60	900	3600	1800
17	Lentaria Siregar	40	55	1600	3025	2200
18	Lusmy Nainggolan	35	65	1225	4225	2275
19	Marisa Manullang	50	60	2500	3600	3000
20	Mayerpal R. Oppusunggu	30	35	900	1225	1050
21	Melani Napitupulu	35	75	1225	5625	2625
22	Nicholas Brandow Saragih	40	55	1600	3025	2200
23	Pande T. Simanjuntak	35	70	1225	4900	2450
24	Rendi Rotama Aritonang	35	60	1225	3600	2100
25	Reyvaldo Siringoringo	40	65	1600	4225	2600
26	Rosmina Anjelika Pardede	50	55	2500	3025	2750
27	Tiurma Silaban	30	70	900	4900	2100
28	Eva Simaremare	40	65	1600	4225	2600
29	Rosella Pangaribuan	35	60	1225	3600	2100
30	Ella Ambarita	30	35	900	1225	1050
	<b>Total (Σ)/n</b>	<b>ΣX= 985</b>	<b>ΣY= 1715</b>	<b>35075</b>	<b>102425</b>	<b>56225</b>

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

Detail:

$r_{xy}$  = the validity of the test (experiment group)

$n$  = number of student

$\sum XY$  = total of students score

$\sum X$  = total of students score in pre – test

$\sum Y$  = total of student score in post – test

$\sum X^2$  = total of students score in pre – test

$\sum Y^2$  = total of student score in post – test

The validity of the test (control group)

$$\begin{array}{ll} \sum X & = 985 \\ \sum X^2 & = 35075 \\ \sum XY & = 56225 \end{array} \quad \begin{array}{ll} \sum Y & = 1715 \\ \sum Y^2 & = 102425 \\ n & = 30 \end{array}$$

$$r_{xy} = \frac{n\sum xy - (\sum x)(\sum y)}{\sqrt{(n\sum x^2 - (\sum x)^2)(n\sum y^2 - (\sum y)^2)}}$$

$$r_{xy} = \frac{30(56225) - (985)(1715)}{\sqrt{(30(35075) - (985)^2)(30(102425) - (1715)^2)}}$$

$$r_{xy} = \frac{1689275 - 1686750}{\sqrt{1052250 - (985)^2(3072750) - (1715)^2}}$$

$$r_{xy} = \frac{2525}{\sqrt{(82025)(131525)}}$$

$$r_{xy} = \frac{2525}{\sqrt{1078792800}}$$

$$r_{xy} = \frac{2525}{32845}$$

$$r_{xy} = 0.07$$

The criteria of validity are as the following:

$$0,91 < r_{xy} < 1,00 = \text{very high}$$

$$0,71 < r_{xy} < 0,90 = \text{high}$$

$$0,41 < r_{xy} < 0,70 = \text{fair}$$

$$0,0 < r_{xy} < 0,40 = \text{low}$$

Based formula, the writer finds the coefficient ( $r_{xy}$ ) was 0,07, it means ( $0,0 < 0,07 < 0,40$ ) that belongs to fair and the test was valid.



#### 4.3.4 Testing the Reliability of the Test in Control Group

The calculation of the reliability of the test was analyzed by using the Arikunto formula as follows:

$$r_{11} = \frac{2xr \frac{11}{12}}{1+r \frac{11}{22}}$$

$$r_{11} = \frac{2(0,07)}{1+0,07}$$

$$r_{11} = \frac{014}{1,07}$$

$$r_{11} = 0,13$$

Based the calculation of reliability, it claims that the reliability of items classified as follows:

- 0,00 – 0,04 : the reliability is low
- 0,41 – 0,70 : the reliability is significant
- 0,71 – 0,90 : the reliability is high
- 0,91 – 1,00 : the reliability is very high

The reliability of the test was 0,13 and it means that the validation is significant.

#### 4.3.5 Testing the T – Test Formula

To find out whether the using game method had a significant effect to the students' vocabulary achievement, the result of the test is calculated by using t – test formula as follow:



**Table 5**  
**T – test Control Group and T –test Experiment Group**

No	The Control Group				The Experimental Group			
	Pre-Test (X <sub>1</sub> )	Post-Test (X <sub>2</sub> )	Deviation (X)	D (X <sup>2</sup> )	Pre-Test (Y <sub>1</sub> )	Post-Test (Y <sub>2</sub> )	Deviation (Y)	D (Y <sup>2</sup> )
1	15	50	35	1125	15	45	30	900
2	20	75	55	3025	45	75	30	900
3	15	80	65	4225	30	65	35	1225
4	20	35	15	225	45	85	40	1600
5	15	65	55	3025	15	75	60	3600
6	45	50	5	25	45	70	25	625
7	40	70	30	900	50	60	10	100
8	25	45	20	400	15	60	45	2025
9	45	55	10	100	25	65	40	1600
10	25	60	35	1125	40	70	30	900
11	25	45	20	400	15	85	70	4900
12	35	45	10	100	50	75	25	625
13	30	65	35	1125	30	55	25	625
14	40	50	10	100	30	60	30	900
15	35	40	5	25	25	70	45	2025
16	30	60	30	900	35	65	30	900
17	40	55	15	225	40	65	25	625
18	35	65	30	900	15	70	55	3025
19	50	60	10	100	40	85	45	2025
20	30	35	5	25	25	60	35	1225
21	35	75	40	1600	30	90	60	3600
22	40	55	15	225	20	50	30	900
23	35	70	35	1125	40	55	15	225
24	35	60	25	625	15	55	40	1600
25	40	65	25	625	30	55	25	625
26	50	55	5	25	20	80	60	3600
27	30	70	40	1600	35	70	35	1225
28	40	65	25	625	15	90	75	5625
29	35	60	25	625	20	90	70	4900
30	30	35	5	25	15	80	65	4225
	<b>985</b>	<b>1715</b>	<b>735</b>	<b>25175</b>	<b>870</b>	<b>2075</b>	<b>1205</b>	<b>56875</b>

Below, the writer listened t-test of control and experiment groups about the deviation and squared deviation that can be seen.

$$1. \quad M_X = \frac{\sum x}{n}$$

$$M_X = \frac{735}{30}$$

$$M_X = 24.5$$

$$2. \quad M_Y = \frac{\sum Y}{n}$$

$$M_Y = \frac{1205}{30}$$

$$M_Y = 40.16$$

Deviation X (Control group)

$$\sum x^2 = \sum dx^2 - \frac{(\sum x)^2}{n}$$

$$\sum x^2 = 25175 - \frac{(735)^2}{30}$$

$$\sum x^2 = 25175 - 18007$$

$$\sum x^2 = 7168$$

Deviation Y (Experiment group)

$$\sum x^2 = \sum dx^2 - \frac{(\sum x)^2}{n}$$

$$\sum x^2 = 56875 - \frac{(1205)^2}{30}$$

$$\sum x^2 = 56875 - 48401$$

$$\sum x^2 = 8474$$

T - test formula

$$M_X = 24,5 \quad \sum X^2 = 7168 \quad N_x = 30$$

$$M_Y = 40,16 \quad \sum Y^2 = 8474 \quad N_y = 30$$

$$= \frac{Mx - My}{\sqrt{\left(\frac{\sum X^2 + \sum Y^2}{nX + nY - 2}\right)\left(\frac{1}{nX} + \frac{1}{nY}\right)}}$$

$$T = \frac{40,16 - 24,5}{\sqrt{\left(\frac{7168 + 8474}{30 + 30 - 2}\right)\left(\frac{1}{30} + \frac{1}{30}\right)}}$$

$$T = \frac{15,66}{\sqrt{\left(\frac{15642}{58}\right)\left(\frac{2}{60}\right)}}$$

$$T = \frac{15,66}{\sqrt{8,0904}}$$

$$T = \frac{15,66}{2,84}$$

$$T - \text{test} = 5,51$$

After gaining the result of  $t - \text{test} = 5,51$  the writer calculated the degree of freedom (df) with the formula as follows:

$$\begin{aligned} df &= (N_x + N_y - 2) \\ &= 35 + 35 - 2 \\ &= 58 \end{aligned}$$

After adapting the data into  $t - \text{test}$  formula, it was obtained that  $t - \text{observed}$  was 5,51. In certain of degree of freedom (df) of this research was obtained from  $(N_x + N_y - 2) = (35 + 35 - 2) = 58$

$$t_{0,05} = 2,00$$

From the  $t - \text{test}$  above,  $t - \text{test}$  is higher than  $t - \text{table}$  ( $5,51 > 2,00$ ), so the alternative hypothesis is accepted, and the null hypothesis is rejected.

#### **4.4 The Hypothesis Testing**

Based on calculation of  $t$  – test is (5,51) is higher than  $t$  – table at the level of significance (2,00). It means the using game is more sufficient affect on students vocabulary achievement at grade VII of SMP NEGERI 12 PEMATANGSIANTAR.

If the result of  $t$  –test is higher than  $t$  – table ( $5,51 > 2,00$ ), the null hypothesis ( $H_0$ ) is rejected and alternative hypothesis ( $H_a$ ) is accepted. It means that there is a significance difference between Control and Experiment group.

#### **4.5 The Research Finding**

Based on the work of the data analysis on this thesis, there are several discoveries which are eventually found by the writer, they are as following:

- a. The average score in experimental class is more than control class.
- b. There is a significant effect to increase the students' vocabulary achievement.
- c. The findings are appropriate with the theories using game.
- d. The students in experimental class felt interesting, easy and have high desire to repeat the lesson again by using this lesson model.

#### **4.6 Interpretation**

After analyzing the data, finally the writer finds out the answer of the problem of this thesis, that is to know the effect of using game on students' vocabulary achievement at grade VII of SMP NEGERI 12 PEMATANGSIANTAR. The writer

gave to the control group by thought the students about students' vocabulary achievement without applied using game. As the result, the experimental group (with using game) is more effective than the control group (without using game).

#### **4.7 Discussion**

The purpose of this research is to find out whether teaching by using game is more significant than without using game to the students' vocabulary achievement.

Instrument used for vocabulary skill in this study written test. The test covered pre – test and post – test. Pre – test was done in the first meeting before teacher taught the material by using game and post – test was done after giving treatment. The writer uses the theory of Arikunto (2010) in analyzing the data. From the analysis of the data, the writer found the mean of pre – test in experiment group is 29 and the mean of post – test in experiment group is 69,16. The validity of the test is 0,22 (fair) and the reliability is 0,36. And from the table above it can be seen that there is the improvement of the score.

It can be concluded that  $H_a$  is accepted which means that there is significant increase by using game on students' vocabulary achievement because the students can more improve their ability on students' vocabulary achievement when they using game. They are five criteria which must be reached. The students had been reached the five criteria but the students must increase more about language use and mechanics.

## CHAPTER V

### CONCLUSIONS AND SUGGESTIONS

This chapter talks about conclusions and suggestions based on the previous chapter. The purpose of this thesis is to describe the effect of using game on students' vocabulary achievement at grade VII of SMP NEGERI 12 PEMATANGSIANTAR. The conclusion will find after doing and analyzing the data collecting correctly. The writer as the value and the result that have found through the research will give the suggestion. It will be useful for the readers.

#### 5.1 Conclusions

Based on the discussion from chapter I to IV, the writer makes conclusion as follows:

1. The writer found that the students of experiment group have higher score than students of control group. It can be seen from average of experiment group is 69,2 and control group is 51,2.
2. Having analyzing the data, the writer found out that null hypothesis ( $H_0$ ) is rejected. It is shown by the value  $t$  – calculate was 5,51 and the value of  $t$  – table 2,00 at 0,05 alpha. It means that by using game can improve the students' skills in speaking vocabulary.
3. The writer found out that teaching vocabulary by using game is more effective than without using game, because it can improve their vocabulary.

## 5.2 Suggestions

The success in teaching doesn't depend of the lesson program only, but more important is how the teacher presents the lesson and uses various technique to manage the class more lively and enjoyable. Regarding to the teaching vocabulary by using game, the writer gives some suggestion for the teacher and students as follows:

### **For the teacher:**

1. The teacher should choose the material that is appropriate and not too difficult for the students.
2. Before assigning the crossword puzzle to students, the teacher should make sure that the students have fully understood and have the information they need.
3. The teacher should keep control the student' activities.
4. The teacher should present the language in an enjoyable, relaxed and understandable way.

### **For the student:**

1. In learning vocabulary, the students must have the high motivation to improvetheir vocabulary.
2. The students are hoped to be active and creative in enriching their vocabulary.
3. The students are hoped to use English well.

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