MASTERING VOCABULARY BY USING CROSSWORD PUZZLE

Vivin Krismawanti Modjanggo

Abstract: The objective of this research is to find out whether crossword puzzle is effective in improving students' vocabulary mastery. The sample of this research is the eight grade students of SMP GKST I Tentena particularly class VIIIC and VIII A. This research is quasi experimental design- the non-equivalent control group design, that involved two sample groups, they are experimental group and control group. The researcher uses clustering sampling. The researcher applies test instrument (Pre-test and Post-test) in collecting the data. The pre-test is administered to measure the students' achievement in learning vocabulary before treatment, while the post-test is administered to measure the students' achievement after treatment. Based on the result of the study, it is proved that the application of crossword puzzle is affective in improving students' vocabulary mastery. It is found that the t-counted (1.820) is higher that t-table (1.693). It means that the hypothesis of this research is accepted. In conclusion, the achievement of the eight grade students of SMP GKST I Tentena in mastering vocabulary can be improved significantly by using crossword puzzle.

Keywords: *Crossword Puzzle, Improve, Vocabulary Mastery*

Vocabulary mastery is one of the components to master English as foreign language. It means that the students have the ability in understanding and using the words and meaning. The students need not only to learn a lot of words, but to remember them. Vocabulary mastery also plays an important part in English skill; listening, speaking, reading, and writing skill. The large vocabulary the students master, the better they perform their language.

Based on the researcher experiences, it is not easy for the students to learn vocabulary. Most of them are not interested in learning vocabulary and they do not also give their full attention in the task and without that attracting and interesting the process of teaching vocabulary cannot run well. This situation happened because the methodology or the strategy which is used maybe not suitable. The teacher usually teaches vocabulary especially to reading comprehension by using the technique that focused in the text, read and then every word their memorization. The students feel that they are forced and they would get bored.

Referring to the problems that appeared in teaching English, it is need to find a new strategy to be used by the researcher so that the students did not find difficult in learning English. Besides, it can be a new step for the researcher in handling a situation in the classroom when she faces an unavoidable situation. Therefore, the researcher should apply appropriate method and technique for teaching vocabulary. Indeed, it is teachers' responsibility to create such a variety of activities according to students; preferences so that the students can be able to learn a foreign language successfully.

One of the possible solutions is by applying Crossword Puzzle as a teaching media in teaching English vocabulary to students. It is a teaching technique in which students can share their knowledge of English in solving the various vocabulary or grammatical questions posed in the puzzle. They need to complete the puzzle with friends or individual and after that the teacher should discuss the solutions with the class as a whole. Give students examples of sentences in which some of the new words are used, and ask them to write sentences of their own.

The Importance of Vocabulary

Vocabulary is one element of the language that should be learnt and taught. It will be hard to master the language without mastering or understanding a certain number of vocabularies. Vocabulary is the first step to be taught before teaching other aspects of language. Zimmerman in Coady and Huckin (1997: 5) expresses that vocabulary is central to language and critical importance to the typical language learner. Moreover, McCharty (1990: Viii) states that the importance of vocabulary in language learning is as follows: no matter how successfully sounds of L2 are mastered, without words to express a wider range of meanings, communication in an L2 just cannot happen in any meaningful way. In addition, Burns and Broman (1975: 295) explain that the position of an individual in society may be determined by the extent of his knowledge of words and how to use them in manner

appropriate to a particular place, time, and situation.

Every students need to understand the rules of grammatical and how to use vocabulary in everyday life. Wilkins (1982: 111) says that without grammar very little can be conveyed; without vocabulary nothing can be conveyed. It has to be realized that the student's ability to read, to write, to listen, and to speak is conditioned by their vocabulary. In reading ability, vocabulary helps learners in comprehending the text. In writing, it helps them to expand their ideas based on the topic sentence that they want. In listening, they comprehend and understand what other person speaks. In speaking ability, vocabulary facilitates the learners to explain their ideas orally. In addition, Coady and Huckin (1997: 5) argue that vocabulary is central and critical importance to typical language learner. It makes vocabulary becomes the basic element to master the four language skills, namely listening, speaking, reading and writing. Without having adequate vocabulary, a language learner will not be able to master the language skills. The meaning shows that vocabulary mastery has important roles in communication.

Vocabulary Classification

English words can be categorized into 8 basic types of classes. Theses classes are called parts of speech. It is quite important to recognize parts of speech. In this research, the researcher will focus on the three basic types of words. The researcher will provide noun, adjective, and verb. Three types of words as follows:

a.   Noun

Noun refers to a word or a group of words that is the name of a person, a thing or activity or a quality or ideas. It can be used as the subject or object. Frank (1972: 6) expresses that noun is one of the most important parts of speech. Its arrangement with the verb helps to form the sentence core which is essential to every complete sentence.

b.   Verb

Verb is a word or group of words which is used in describing an actin, experience, or state. In other words, verb indicates what action or activity to do. It is used as predicate of a sentence. Azar (1992: 21) points out four principle forms of verbs in the following:

(1) Simple form is the form that is found in a dictionary. It is the base form with no endings on it (no final –s, -ed, or –ing).

(2) Simple past form ends in –ed for regular verbs. Most verbs are regular, but many common verbs have irregular past forms.

(3) Past participle also ends –ed for regular verbs. Some verbs are irregular. It is used in perfect tenses.

(4) Present participle ends in –ing (for both regular and irregular verbs). It is used in progressive tenses.

c.   Adjective

An adjective is an essential part of speech, which helps to modify a noun in any particular sentence. It has two main roles in a sentence. While predicative adjective modify a noun that followed it and is linked by a verb, attribute adjectives modify a noun by directly being linked to the noun as part of the noun phrase. Adjectives don't form a part of speech in all language. In several Native American languages, verbs are used to fill in the role adjectives play in case of English language.

Crossword Puzzle

Crossword puzzle is one of the types of puzzle games commonly used in learning process. Karim and Hasbullah (1986: 36) say that one of the interesting techniques in teaching language is Crossword Puzzle. This shows that Crossword Puzzle could be used to sustain students' interest and make the students feel relax. The construction technique consisted of arranging the words so that they crossed the appropriate points. The arrangement is make to correspond to horizontal and vertical clues.

Crossword Puzzle can improve students' motivation and interest in the topic. Crossman and Crossman (1983) express that crossword puzzle is a positive tool to use in the classroom, there has been little to examine and evaluate the success they provide in students learning. Most studies look more closely at teacher's and students' attitudes toward the puzzles.

In general, crossword puzzle is a word game that consists of black and white squares. Webster, new word college dictionary defines crossword puzzle as an arrangement of numbered of squares to be filled in with words. A letter appearing in a word that is places horizontally and usually a part of a word that placed vertically. It has clues which can be given n the form of numbered of synonyms or definitions. The Oxford Advanced dictionary adds that crossword puzzle is a word game that the answers have guessed based on the clues into numbered squares that go a cross and down.

Oxford Learner's dictionary (2003: 103) define crossword as a puzzle in which

words have to be guessed from clues and written in spaces in a grid. A crossword is a word puzzle that normally takes the form of a square or rectangular grid of white and shaded squares. Furthermore, Oxford Learner dictionary (2003: 349) adds that Puzzle is game that you have to think about carefully in order to answer it or do it. In addition, Longman Handy Learners' Dictionary of American English (2000: 336) define puzzle as a game or toy to exercise the mind.

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 (http://www.wikipedia.org), they consist of:

1) 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.
2) Riddles, whose main goal is to develop students' listening or reading comprehension. Lee (1963: 124) state that it can improve students' vocabulary too. For Example, the teacher said, "What do we use to cut our meet? "Write down your answer on your paper". (The answer is knife).
3) Crossword puzzles, which are mainly focused on vocabulary and spelling practice. It 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.

Kind of Crossword Puzzle

In teaching vocabulary by using crossword puzzle, there is some kinds of crossword puzzle which can be done by the students, they are:
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 hands on learners. This type of puzzle works well for units with a lot of vocabulary.

Procedures 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. Lee (1963: 135) points out various procedures of crossword puzzle in the following:
(1) The teacher gives the same crossword for each student. They solve individually with the help of written clues.
(2) 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.
(3) 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.
(4) 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.

Furthermore, the teacher can be creative in presenting crossword puzzle. For

example, the teacher divides the class into groups. Then the teacher gives the same crossword for each group. The group who finished in the first time and all of the answer is right will be given a point. It can be more interesting, if there is a prize for the winner. In addition, crossword puzzle consists of a crossword and clues. The clues are the guidance for solving crosswords puzzle. Here are three kinds of clue:

a. Picture

The clue is consisting of picture which shows something, so the learner can guess the word. For example:

What is this animal?

(The answer is rabbit)

b. Definition

This clue is by giving the meaning of word in crossword puzzle. For example: Be no longer valid (The answer is expired)

c. Sentences Completion

This clue is consisting of sentence in which the answer is by fill the missing word. For example: My father's brother is my …. (The answer is uncle)

Teaching and Learning Vocabulary

Vocabulary learning and teaching have significant rules in teaching and learning English. Richard and Renandya (2002: 255) state that there is one fundamental reason of giving more attention to teaching vocabulary is considered as primary problem in communication. People or students are being easy to spoke and to write if they have lexical competence. Students need to know many English words. Hunt and Beghar (2002: 299) state that knowing 300 English words is given significance understanding in English, while Nation Citied in Hunt and Beghar (2002: 299) state that knowing 200 English words it covered 80% of academic test and personal communication. Meanwhile the curriculum 1994 recommended that after graduating at Junior High Scholl level, the students process at least 2000 English words related to the daily activity to access the advance of technology. Even though in School-Based Curriculum 2004 the number of vocabulary mastery is not mentioned implicitly but it is integrated with language skill namely; listening, speaking, reading and writing. Thus, teacher should provide a good vocabulary teaching and learning to students.

Teaching and Learning Vocabulary through Crossword Puzzle

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) states 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, adjective, 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, Scrivener (1994: 83) it 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.

Advantages and Disadvantages of Crossword Puzzle

Crossword Puzzle has important role in teaching learning process, especially in teaching vocabulary. Crossword Puzzle also known as words find games are popular for helping students recognize words. In searching words the students seems to read and memorize the words in a way that they enjoy and which helps them learn the words ad their spelling. Crossword Puzzle can play in line or users can create a printable Crossword Puzzle involves several skills; including vocabulary also

encourages motivation, challenges, and attractiveness or critical thinking.

The advantages of Crossword Puzzle in teaching vocabulary as state by Jones a home education and writer on educational games are first the puzzle solving involves several useful skills including vocabulary, reasoning, spelling, and word-attack skill to solve any puzzle. Students must be able to identify and understand the terms were being used. It involves acquiring new vocabulary or terminology correctly deciphering a Crossword Puzzle and also requires exact spelling which for the students' way meant practice their dictionary skill. Another advantage of Crossword Puzzle is also can improve the students' English vocabulary achievement as an alternative and effective technique in teaching learning vocabulary. Meanwhile, Crossword puzzle also has some disadvantages. First, by attracting students' interest to games, learners may get excessively noisy. Second, if games are already familiar or boring, students might not get equally involved. Moreover, some students find it difficult to fill in the squares. They spend many times in filling it. In relation with it, teachers also find it difficult to control students' work and when presenting the instruction because she/he has to explain it many time to make sure that all students understand what to do.

Method

The researcher used quasi experimental design-the non-equivalent control group design. The samples of the research were consisted of two groups; experimental and control group. The researcher gave pre test and post test to both groups, but treatment was given only to the experimental group. Then control group was taught by using the conventional teaching. The researcher used formula proposed by Ary (1982) in the following.

E= Experimental Group
C= Control Group
X = Treatment
Y1= Post test of experimental group
Y2= Post Test of control group

The population of this research was the eight grade students of SMP GKST I Tentena which consisted of three parallel classes. They were 2A, 2B, and 2C. The sample of the research was selected by using cluster sampling. There are two groups in this research, first, control group was 2C and experimental group was 2A.

In this research, the researcher used test as the instrument. The tests consisted of pre-test and posttest.   In carrying out this research, the researcher used pretest and posttest to collect the data and also gave treatments to the stundets. After collecting data through the test, the researcher counted the individual score by using simple statistic formula proposed by Arikunto (2006: 240). The formula could be seen in the following:

$$\sum = \frac{x}{n} x100$$

Where: $\sum$ = Standard Score
   x   = Sudents' score
   n   = Maximum score

The data of the research was analyzed by using the simple formula to find out the mean score. Before analyzing the data from the tests, the researcher computed firstly the score of individuals then computed the mean score by applying the formula proposed by Best (1981: 225):

$$M = \frac{\sum X}{N}$$

Where: M = Mean
   Σ = Sum of
   X = Score in a distribution
   N = Number of scores

The researcher then computed the sum of squared deviation by employing formula purposed by Best (1981: 230) in the following:

$$S^2 = \frac{N\sum X^2 - (\sum X)^2}{N^2}$$

Where: S^2 = Variance
   N = Number of the students in each group
   $\sum X$ = Total sum of the students' raw score

After computing all formula above, the researcher proved the significance between the mean of pre-test and post-test, the researcher used the formula as proposed by Best (1981:270) in the following:

$$t = \frac{M_1 - M_2}{\sqrt{\frac{S_1^2}{N_1} + \frac{S_2^2}{N_2}}}$$

Where:
T   = t-test
M_1= mean of experimental sample
M_2= mean of control sample
N_1= number of cases in experimental sample
N2= number of cases in control sample
S_1^2 = Variance of experimental sample

S_2^2 = Variance of control sample

Findings and Discussions
The Result of Pre-test
        The pretest was administered to both classes; experimental and control class, aimed to measure the students' abilities before being treated. The pretest was conducted on February 6th, 2017. The result of pretest was as follows:

Table 1. The Result of Pretest of Experimental Group

No	Students' Initial	Pretest	
		Raw Score	Average Score
1	ALO	13	81
2	YKS	10	63
3	RPI	14	88
4	RBL	10.5	66
5	YNM	13	81
6	RST	9.5	59
7	JBT	9.5	59
8	SPT	10.5	66
9	PRR	12	75
10	KSL	8	50
11	WSO	12.5	78
12	ESA	8	50
13	RSO	10.5	66
14	GDM	8	50
15	EMA	10.5	66
16	SLA	8	50
17	SPO	9.5	59
	TOTAL SCORE	177	1107

        To find the mean score of the experimental group in pretest, the researcher applied the formula as stated in previous chapter in the following table:

$$Mx = \frac{\Sigma x}{N}$$
$$= \frac{1107}{17}$$
$$EG = 65.11$$

Table 2. The Result of Pretest of Control Group

No	Students' Initial	Pretest	
		Raw Score	Average Score
1	VNT	11	69
2	MSU	9.5	59
3	ODG	11	69
4	MFM	9	56
5	KNT	8	50
6	GLP	10.5	66
7	ADS	8	50
8	MLT	9.5	59
9	NOM	9.5	59
10	RAM	6	38
11	EMO	10.5	66
12	AML	8.5	53
13	CAL	8.5	53
14	CED	9.5	59
15	KDK	10.5	66
16	EMJ	8	50
17	NPT	10.5	66
	TOTAL SCORE	158	988

        To find the mean score of the control group in the pretest, the researcher applied the formula in the following:

$$My = \frac{\Sigma x}{N}$$
$$= \frac{988}{17}$$
$$CG = 58.11$$

        The mean score of experimental group above was 65.11 while the control group was 58.11. It means that the differences between mean score of the experimental group and control group only 7. It can be said that before conducted the treatment, both groups almost had similar ability in mastering vocabulary.

The Result of Posttest
        The posttest was conducted on March, 6th 2017. The post test was administered to both classes; experimental and control group intended to measure students' ability after treatment. The result of posttest was as follows:

Table 3. The Result of Posttest of Experimental Group

No	Students' Initial	Posttest	
		Raw Score	Average Score
1	ALO	15	100
2	YKS	13	87
3	RPI	15	100
4	RBL	15	100
5	YNM	15	100
6	RST	14	93
7	JBT	14	93
8	SPT	14	93
9	PRR	14	93
10	KSL	13	87
11	WSO	15	100
12	ESA	10	67
13	RSO	14	93
14	GDM	13.5	90
15	EMA	14	93
16	SLA	13	87
17	SPO	13	87
	TOTAL SCORE	234.5	1563

        To find the mean score of the experimental group in posttest, the researcher used the formula as follows:

$$Mx = \frac{\Sigma \square}{\square}$$
$$= \frac{1563}{17}$$
$$EG = 91.94$$

        The mean score in posttest of experimental group was 91.94. It indicated that it as a significant progress of mean score from 65.11 in the pretest to 87,05 in the posttest.

Table 4
The Result of Posttest of Control Group

No	Students' Initial	Posttest	
		Raw Score	Average Score
1	VNT	12	80
2	MSU	11	73
3	ODG	12.5	83
4	MFM	11.5	77
5	KNT	12	80
6	GLP	13	87
7	ADS	10.5	70
8	MLT	12	80
9	NOM	11.5	77
10	RAM	10	67
11	EMO	14	93
12	AML	12	80
13	CAL	10	67
14	CED	13	87
15	KDK	12	80
16	EMJ	11	73
17	NPT	12	80
	TOTAL SCORE	200	1334

To find the mean score of control group in the posttest, the researcher used the formula as follows:

$$My = \frac{\Sigma \square}{\square}$$
$$= \frac{1334}{17}$$
$$CG = 78.47$$

The mean score of posttest of control group was 78.47. It showed that the mean score of control group also increased from 58.11 in the pretest to 78.47 in the posttest.

The result of posttest of both groups showed that the mean score of experimental group (91.94) was higher than the mean score of control group (78, 47). It indicated that the difference of mean score of both classes was 13.47

Data Analysis

The students' score and deviation in the pretest and posttest of experimental group and control group can be seen in the following table.

Table 5
The Students' Score and Deviation in Pretest and Posttest of Experimental Group

No	Students' Initial	Students' Score		X	X2
		Pretest	Posttest	X2-X1	
1	ALO	81	100	19	361
2	YKS	63	87	24	576
3	RPI	88	100	12	144
4	RBL	66	100	34	1156
5	YNM	81	100	19	361
6	RST	59	93	34	1156
7	JBT	59	93	34	1156
8	SPT	66	93	27	729
9	PRR	75	93	18	324
10	KSL	50	87	37	1369
11	WSO	78	100	22	484
12	ESA	50	67	17	289
13	RSO	66	93	27	729
14	GDM	50	90	40	1600
15	EMA	66	93	27	729
16	SLA	50	87	37	1369
17	SPO	59	87	28	784
	TOTAL SCORE	1107	1563	456	13316

Based on the table 4.5 above, the researcher computed the mean score of deviation of the pretest and posttest of the experimental group using the formula as follows:

$$Mx = \frac{\Sigma x}{N}$$
$$= \frac{456}{17}$$
$$= 26.82$$

Table 6. The Students' Score and Deviation in Pretest and Posttest of Control Group

No	Students' Initial	Students' Score		Y	Y2
		Pretest	Posttest	Y2-Y1	
1	VNT	69	80	11	121
2	MSU	59	73	14	196
3	ODG	59	83	24	576
4	MFM	56	77	21	441
5	KNT	50	80	30	900
6	GLP	66	87	21	441
7	ADS	50	70	20	400
8	MLT	59	80	21	441
9	NOM	59	77	18	324
10	RAM	59	67	8	64
11	EMO	38	93	55	3025
12	AML	66	80	14	196
13	CAL	53	67	14	196
14	CED	53	87	34	1156
15	KDK	66	80	14	196
16	EMJ	50	73	23	529
17	NPT	66	80	14	196
	TOTAL SCORE	988	1334	356	9398

Based on the table 4.5 and 4.6 above, the researcher the calculated the mean score of deviation of pretest and posttest of the groups by using the formula as follows:

$$My = \frac{\Sigma \square}{\square}$$
$$= \frac{356}{17}$$
$$= 20.94$$

The mean score of experimental group is higher than the control group. The mean score of deviation of the pretest and posttest of

the experimental group was 26.82 while the control group was 20.94.

The sum square deviation around both groups can be calculated as follows:

a) The sum of square deviation of the experimental group:

$$S^2 = \frac{\square \sum \square^2 - (\sum \square)^2}{\square^2}$$

$$\square_2^I = \frac{17 \,\square\, 13316 - (456)^2}{17^2}$$

$$= \frac{226372 - 207936}{289}$$

$$= \frac{18436}{289}$$

$$\square_2^I = 63.79$$

b) The sum of square deviation of the control group:

$$S^2 = \frac{\square \sum \square^2 - (\sum \square)^2}{\square^2}$$

$$\square_2^I = \frac{17 \,\square\, 9398 - (356)^2}{17^2}$$

$$= \frac{159766 - 126736}{289}$$

$$= \frac{33030}{289}$$

$$\square_2^I = 114.29$$

After calculating the sum of squared deviation of both groups, the researcher came to the calculation of t-test to find out the significant differences between the two groups by using the formula as follows:

$$t = \frac{\square_1 - \square_2}{\sqrt{\frac{\square_1^2}{\square_1} + \frac{\square_2^2}{\square_2}}} \qquad t = \frac{26.82 - 20.94}{\sqrt{\frac{63.79}{17} + \frac{114.29}{17}}}$$

$$t = \frac{5.88}{\sqrt{\frac{178.08}{17}}}$$

$$t = \frac{5.88}{\sqrt{10.47}}$$

$$t = \frac{5.88}{3.23}$$

$$t = 1.820$$

Testing Hypothesis

In order to prove whether the hypothesis of the research was accepted of rejected, the researcher needed to test it based on the results of the data analysis. The researcher stated the hypothesis. If the t-counted is higher than t-test, it means that the hypothesis is accepted, while if the t-counted is lower than t-table, it means that the hypothesis of the research is rejected.

To test the significant difference of the two groups, the researcher used the level of significant 0.05 by applying 32 of the degree of freedom (df) Nx + Ny – 2 = 17 + 17 – 2 = 32. The researcher found that the value of t-table was 1.693.

The result of data analysis showed that t-counted (1.820) was higher than t-table (1.693). It means that the researcher hypothesis was accepted. In the other words, the use of Crossword Puzzle can be effective to improve

students' vocabulary mastery At SMP GKST I Tentena.

Discussion

The researcher administered pre-test and post-test to the students. These two instruments were used to collect the data of the research. The models of the tests were filling out the crossword puzzle, multiple choice, and completion. The tests consisted of 15 items for pretest and 16 items for posttest. The experimental group was given some treatments by using crossword puzzle, while control group were not. They were taught by using conventional teaching. The pretest was administered before the treatment while the posttest was administered after the treatment using crossword puzzle to the experimental group while the control group was treating by using conventional strategy.

The result of the pretest test in both experimental and control group showed that students got different score. The lowest score in the pretest of experimental group was 50 while in control group was 38. The highest score was 88 in the experimental group while in the control group was 69. On the other hand, the lowest score of posttest in experimental group and control group was 67 while the highest score in the experimental group was 100 and the control group was 93.

Students' mean score in the pretest was also difference between both groups. The mean score of experimental group was 65.11 while the control group was 58.11. Furthermore, the result of students' mean score in the pretest of students' in experimental group increased to 91.94 while the control group was 78.47.

The researcher gave the treatment to the experimental class only. The teacher in the class helped the researcher in conducting the research. The treatment was given three times.

After the researcher conducted the posttest, it is found that there was significant improvement to the students' achievement in mastering vocabulary. They were able to fill out the crossword puzzle, they were able to complete the sentence, and they were able to name parts of speech, like noun, adjective, and verb. Finally, the researcher concluded that the use of crossword puzzle could be effective to help students develop their vocabulary mastery.

Conclusions and Suggestions
Discussion

The researcher concludes that there was a significant difference between the students' score in the pretest (before treatment)

and posttest (after treatment) of both groups. The students' mean score of both groups were also difference. It was proved by looking that t-counted (1.820) was higher than t-table (1.693). Indeed, the hypothesis of the research was accepted. It indicated that the use of crossword puzzle can improve students' achievement in mastering the vocabulary of SMP GKST I Tentena.

Suggestions

In accordance to the above conclusion, it is hoped that the students can practice their vocabulary and able improve their vocabulary mastery by using Crossword Puzzle. It is also hoped that the teachers are able to give some contributions to other teachers of English in order to improve the student's vocabulary mastery. For the school, it is hoped that the result of this research will be a valuable contribution in order to improve the quality of education especially English.

REFERENCES

Arikunto, S. 2006. *Prosedur Penelitian. Suatu Pendekatan Praktek (Edisi Revisi VI).* Jakarta: PT Rineka Cipta.

Ary D, Lusy Chesar Jacobs, & Asghar Razavieh, (1982). *Introduction to research in Education. Penerjemah Ari Furchan.* Surabaya: USAHA NASIONAL.

Burns, P.C. and Broman, B.L. 1975. *The Language Arts in Childhood Education*. Rand McNally College. University of Michigan

Coady and Huckin. 1997. *Second Language Acquisition. A Rational for Pedagogy.* Cambridge: Cambridge University Press
Crossman, E., and Crossman, S. M. 1983. *The Crossword Puzzle as a Teaching Tool. Teaching Psychology*. London

Davoud Jafari, Davoud Madani, Ph.D., Mojtaba Maghsoudi, Ph.D. *The Effect of Using the Instructional games on Iranian EFL Learners' Vocabulary Achievement and Their Retention.*

Frank, M. 1972. *Modern English as Practical References Guide*. Prentice-Hall Inc. new Jersey. New York

Allen, French, Virginia. 1983. *Techniques in Teaching Vocabulary*. New York : Oxford University

Harmer, J. 1991. *The Practice of English Language Learning.* New Edition. London: Longman Group.

Hatch, Evelyn and Cheryl Brown. 1995. *Vocabulary, Semantics, and Language Education*. Cambridge: Cambridge University Press.

Hatch and Brown. 1995. *Vocabulary, Semantics, and Language Education.* New York : Cambridge University Press.

Hornby , A.S. 1995. Oxford Advanced Learner's dictionary of Current English. Oxford University Press.

Hornby, A.S. 1984. Oxford Advanced Learner's Dictionary of Current English. London: Oxford University Press.

Karim, M. & Hasbullah, F. A. 1986. *Language Teaching Media*. Jakarta Universitas Terbuka.

Lee, David Y.W. 2001. *Defining Core Vocabulary and Tracking Its Distribution across Spoken and Written Genres*. London: Sage Publication.
Longman Handy Learners' Dictionary of American English: 2000: 336.

McCharty, Michael. 1990. Vocabulary. Oxford: Oxford University Press.

Pikulski, J.J., & Templeton, S. (2004). *Teaching and developing vocabulary: Key to long-term reading success*. Boston, MA: Houghton & Mifflin.

Orawiwatnakul, W. 2013. *Crossword Puzzles as a Learning Tool for Vocabulary Development.* Electronic Journal of Research in Educational Psychology, 11(2), 413-428. ISSN: 1696-2095. 2013, no. 30 retrieved from http://dx.doi.org/10.14204/ejrep.30.12186

Richards, J. (1985). *The context of language teaching* .Cambridge:CUP.
Richards, J. C. & Renandya, W. A. 2002. *Methodology in Language Teaching. An Anthology of Current Practice*. Cambridge: Cambridge University Press.

Scrivener, J. (1994). *Learning Teaching. A guidebook for English language teachers*. Oxford: The Bath Press.

Vossoughi, H. and Zargar, M. 2009. *Using Word-Search-puzzle Games for Improving Vocabulary Knowledge of Iranian EFL Learners*. Journal of Teaching English as a Foreign Language and Literature of Islamic Azad University of Iran, 1 (1), 79-85, Winter 2009.

Wharton, K.A. 1995. *How many receptors does it take?* BioEssays 17(1): 13--16. (Export to RIS)

Yule, G. 2010. *The Study of Language. 4th edition. Cambridge: Cambridge University Press*.

About the Author
Vivin Krismawanti Modjanggo, S.S., M.Pd, was born in Poso, 5 May 1984. She finished her under graduated program in 2008, at Satya Wacana School of Foreign Language, Salatiga and her master program in 2014, at Tadolako University, Palu. Her interests are in English literature and English education. She is an English lecturer in Faculty of Teacher Training and Education, Sintuwu Maroso University Poso Since August 2009. Email: vivinmodjanggo@rocketmail.com. HP: 085225471392.