A STUDY ON THE EFFECTIVENESS OF CROSSWORD PUZZLE AS COMPARED TO CONVENTIONAL METHOD IN TEACHING VOCABULARY

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Abstract

This study is entitled "The Effectiveness of Crossword Puzzle as Compared The Conventional Method in Teaching Vocabulary."

The research was administered to answer the question "Is crossword puzzle as compared to other methods effective in improving student vocabulary achievement?" The data were collected through pretest and posttest, administered to 35 student and the data was analyzed by using T-test.

The participants of this study were the grade five elementary pupils of kartika elementary school. in section 5A there were 34 pupils who were taught using conventional method and section 5B there were 35 pupils who were taught using crossword puzzle method. The age of the participants were between 11-15 years old.

From the computation of the pretest and posttest, the result mean of pretest control group=51.17, the result mean of pretest experimental group=55.14. and the mean posttest control group= 56.61,the mean posttest experiment group= 63.42. The result shows that $t_{counted}$ =2.106>t_{table} = 1,684. There is significant different crossword puzzle method effective to improve vocabulary skills.

The researcher hopes that the finding of present crossword puzzle method could give some contribution to the improvement vocabulary especially for the students of Kartika X-3, Parompong, Bandung.

Key Words : Crossword Puzzle, improvement ,Vocabulary.

Language is very important for communication daily lives. With language we can relate among human beings.

Teaching vocabulary in the class can be quite fun, interesting and exciting for the students and they learn new words and memorize the spelling of the words which they have already known. Teaching vocabulary to them by using crossword puzzle can make them creative and innovative in learning vocabulary so that students can be fun in learning vocabulary.

Slaterry (2003) explained that Crossword puzzle can help the learners in learning foreign language.

Jones (2007) stated that crossword puzzle involve several useful skills including vocabulary, reasoning, spelling, and word attack skills. To solve any crossword puzzle, a person must be able to identify and understand the terms which are being used. This often involves acquiring new vocabulary or terminology.

Kaya (2007) mentioned that crossword puzzles are excellent way to review vocabulary as student will immediately know their answer are incorrect if they do not fit the puzzle.

On the other hand, Kopf (2010) said that crossword puzzle can be a good way to practice vocabulary.

The description can either be word-based or you can have fill-in-the-blanks style questions, where students must insert vocabulary words. Make crossword puzzles easier for beginning students by including a list of the potential answers on the worksheet.

From the explanation above, the researcher wants to know if crossword puzzle is more effective than the conventional method in improving vocabulary achievement.

Is crossword puzzle is more effective than the conventional method in improving vocabulary achievement?

METHODOLOGY

This chapter presents the methodology used in research. It also elaborates several aspects of methodology such as, research design, the participants, research instrument, test validity, test reliability, data gathering, and data processing procedures.

Research Design

This research design is stated as follows:

Table 1.

Pre-test	Treatment	Post-test
A1	X	A2
B1	-	B2

A : Experimental Group
X : Implementation of the method
B : Control Group
The improvementsbetween Pretest and Posttest was compared. The result was used to draw the conclusion of the study.

The participants

The participants were section A and B of grade 5 elementary pupils of Kartika Elementary School, Parongpong, Bandung. In section 5A there were 34 pupils who were taught using conventional method and section 5B there were 35 pupils who were taught using crossword puzzle method. The ages of the participantswere between 11-15 years old.

Research Instrument

This research employed the use of the vocabulary test as its instrument. To find out whether crossword puzzle is more effective in improving students' vocabulary or not,the pretest was given to the students before the treatment.The posttest was given after the treatment. The pretest and posttest focused on adjective vocabulary and simple present vocabulary. The pretest and the posttest consisted of 20 items and was designed in the form of multiple-choice test.

Table 2.Interpretation Classification Instrument Validity

r_{xy} value	Interpretation
$r_{xy} \leq 0,00$	unacceptable
$0,00 < r_{xy} \leq 0,20$	poor
$0,20 < r_{xy} \leq 0,40$	questionable
$0,40 < r_{xy} \leq 0,70$	acceptable
$0,70 < r_{xy} \leq 0,90$	good
$0,90 < r_{xy} \leq 1,00$	excellent

Table 3. Interpretation classification Reliability Coefficient

r_{11}Value	Interpretation
$r_{11} \leq 0.20$	Poor
$0.20 < r_{11} \leq 0.40$	questionable
$0.40 < r_{11} \leq 0.60$	acceptable
$0.60 < r_{11} \leq 0.80$	good
$0.80 < r_{11} \leq 1.00$	excellent

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Table 4. Schedule of the treatments

Meeting	Material/Theme
1	Pre-test
2	Parts of body
3	My Classroom
4	My Clothes
5	Physical apperance
6	Fruits and Animals
7	Family
8	Post-test

Procedures of using crossword puzzle in teaching vocabulary

1. **Selecting the puzzle**
The first step is selecting the appropriate puzzle. The puzzle must fit with the instructional objectives and the students' need. Moreover, the puzzle must fit the students' ability, so it is very important to pay attention in the difficulty level of puzzle.
2. **Explaining the purpose of the puzzle**
   The second step is explaining the purpose of puzzle by providing oral and written information.
3. **Demonstrating the puzzle**
The third step in demonstrating how the puzzle is done. Student can demonstrate it for the class. The teacher has to make sure that all the students understand how the puzzle is done. That is why key vocabulary and concepts may need to be explained.
4. **Observing the students while they are completing the puzzle**
   The next step is observing the students. The teacher has to observe the students as they complete the puzzle. The teacher can clarify the direction if need or requested but allow students to complete the puzzle on their own.

5. **Discussing the results of the puzzle**
   The last step is discussing the result of the puzzle. The teacher leads a group discussion, and then explicitly, the teacher ties the purpose of the puzzle into the instructional objectives and design.

Post-test

The post test which was the same test as the pretest was administered to the participants at the end of the treatment.In order to find the result of the whole treatment and to see whether there was any significant improvement in the teaching of vocabulary through the use of crossword puzzle, the post test was administered on April 14, 2011.

FINDINGS AND DISCUSSION

Test of Validity

According to AnatestV4 examine the validity of the test, the researcher used the coefficient correlation product moment formula. Based on the calculation the result was $r_{xy}= 0,92$ and based on the criteria it was classified into excellent category as a result, and it could be used as the research instrument. Table 5. below shows the validity analysis.

Table 5. Validity Test

Table 6. Based on criteria:

$r_{xy} \leq 0.00$	Unacceptable
$0.00 < r_{xy} \leq 0.20$	poor
$0.20 < r_{xy} \leq 0.40$	questionable
$0.40 < r_{xy} \leq 0.70$	acceptable
$0.70 < r_{xy} \leq 0.90$	good
$0.90 < r_{xy} \leq 1.00$	excellent

The result was 0.92 and based on the criteria it was classified that the validity test was excellent.

Reliability Test

To examine the reliability of the test, the researcher used the Anatest v4 formula. The result of the reliability score by anatest v4 was : 0.92
Table 7. Based on the criteria:

Table 7. Reliability Test

$r_{11} \leq 0.20$	Poor
$0.20 < r_{11} \leq 0.40$	questionable
$0.40 < r_{11} \leq 0.60$	acceptable
$0.60 < r_{11} \leq 0.80$	good
$0.80 < r_{11} \leq 1.00$	excellent

The result of the reliability score was: 0,92 and based on the criteria it was classified into the excellent category and it could be used as the research instrument.

The Difficulty Test

The difficulty test was used to measure whether the instrument used in the study were relevant with the students' ability or not.

Table 8. The Result of Difficulty Test

	Item number
	1.2.3.4.5.6.7.8.9.11.12.13.14.15.16.17.18.19.20.2 1.22.23.24.25
	10

The table shows that twenty-four from twenty five items were appropriate to be used as the research instrument. One item is not appropriate because the value is not considered to be ideal.

Discrimination Test

Discrimination test was used to discriminate between higher ability and lower ability test takers. To measure the discrimination, point biserial correlation was used in this study. The result of the discrimination test can be seen as follows:

Table 9. The Result of Discrimination Test

Interpretation	Item Number
Acceptable	1.4.5.6.7.8..9.13.14.15.16.17.18.19.20.21.22.23.24.25
Un-acceptable	2.3.10.11.12

The table shows that twenty from twenty five items are acceptable to be used as research instrument. Five numbers are unacceptable.Therefore they cannot be used as the research instrument.

The Pretest Score Analysis

Pretest was administered to find out the vocabulary knowledge of experimental and control group. The scores on pretest between experimental and control group were analyzed using SPSS 17 statistical computation for Windows.

The table shows the means and standard deviations of experimental and control group scores in the pretest.

Table 10. The Pretest Score

Group			Std

			Deviation
Experimental			17.60
Control			16.23

The table shows that the mean for the experimental group is 55.14 and the mean for the control group is 51.17. Nevertheless, it cannot be assumed whether the means of the pretest scores were significantly different. Thus, the independent t-test was performed.The data from experimental and control group pretest must be normal and homogeneous. So the calculation of the normal distribution and homogeneity of variance were performed.

The Normal Distribution Test

Kolmogrov Smirnov test was used to check whether the pretest scores of experimental and control group were normally distributed or not. The test statistics for the Kolmogrov Smirnov test is denoted by D.
From the result, it can be seen that the experimental pretest score, $D(35) = 0,524$, $p > 0.05$, and the control pretest score, $D(34) = 0,459$, $p > 0.05$ were both normalor not significantly different from normal distribution. The numbers in the brackets were the degrees of freedom (*df*) from the table. The table of the normal distribution test can be seen in the appendix D.

The Homogeneity of Variance Test

Levene statistics in SPSS 17 for Windows was used to analyze the homogeneity of variance of both experimental and control group pretest scores. Levene's test can be denoted by the letter F and there are two different degrees of freedom. From the SPSS output result, it appeared that the Levene's test was not significant for pretest scores of experimental and control group (values in the column labeled significant are more than 0.05). It indicated that the variances were not significantly different.In other words, we can accept the null hypothesis that the variances are homogeneous or equal, as $F(0.525) = 0,142, p > 0.05$

The Posttest Score Analysis

Posttest was administered to see the improvement of the groups after receiving the treatment. The following table shows the result of the posttest from the statistical computation.

Table 11. The Posttest Scores

Group			Std. Deviation
Experiment			13.14

a l			
C o n tr o l			1 3. 7 4

Table 4.8 shows that the mean for the experimental group was 63.42, while the mean for control group is 56.61. From the table it can be seen that the means from both experimental and control group pretest scores are significantly different. However the means of both groups were significantly different, several tests were conducted. The testincluded the normal distribution test, homogeneity of variance test, independent T-test, and dependent T-test. Moreover, in order to find out the effect of the independent variable upon the independent variable, the calculation of effect size was measured.

T-Test

The analysis of experimental group scores was conducted by using independent test sample T-test in SPSS 17 for Windows to compare the scores of the experimental group and control group posttest.
On average it could be concluded that experimental posttest scores are greater (M= 63.42) than those of control posttest (M=56.61), $t_{counted}$ 2.106>1.684 t_{table}. Therefore the alternatives hypothesis is accepted and the null hypothesis is rejected. It was indicated that crossword puzzlmethod is more effective compared to the conventional method.

CONCLUSION AND SUGGESTION

This chapter presents the summary, conclusion and the recommendation that the researcher has done that can be applied in the English teaching and learning area related to the research.
This research titled "The effectiveness of crossword puzzle in teaching vocabulary to the fifth grade students of Kartika sari X-3 Parongpong as compared the conventional method."
The research was administered to answer the question"Is crossword puzzle method is more effective than the conventional method in improving vocabulary achievement?"
Crossword puzzle method gave students the opportunity to improveand develop students vocabulary achievemens.
The data were collected through pretest and posttest, administered to 34 students for control group and administered to 35 students for experiment group. From the computation of the pretest and posttest, the results showed that the participants vocabulary ability improved significantly through crossword puzzle method. The vocabulary achievement showed that the

mean difference between pretest and posttest. The t $_{counted}$ =2.106>t $_{table}$ = 1.684 with significance 0.05.

The researcher hoped that the findings of the present study could give some contribution to the improvement of vocabulary especially for the students in elementary school.

To answer the question which was stated in the statement of the problem that "Is crossword puzzle method more effective in improving vocabulary achievement than the conventional method?" the researcher drew conclusion as follows:

1. There was a significant improvement in the students vocabulary skills. It showed from the result of the mean of pretest and posttest. The result showed that the posttest scores of the experimental group were higher than those of the control group. The t $_{counted}$ =2.106>t $_{table}$ = 1.684. The result of the experimental group is significantly higher than the result of the control group.
2. Crossword puzzle technique gave the students theopportunity to improve and develop their vocabulary.
3. The use of crossword puzzle technique helped the students to develop self-awareness and to be more self-confidence,

Crossword puzzle can be a fun activity in the classroom.By providing the interesting clues, such as pictures and colors the students will be motivated to join and participate in the activity because they are interested in the lesson.

For the teachers to use the crossword puzzle method in the classroom, the students can fill like it is a game activity in the classroom, so students will not realize they are learning English and finally they will see learning English as a fun and interesting activitiy.

Group activities and pair work would give a better understanding of the strategy and well planned of this strategy would make this strategy more effective.

For other researchers who wants to do the research on the use of crossword puzzles, the researcher hope that this research paper can be a reference to assist them in doing their research. It is better to find more theories that can support the use of crossword puzzle in teaching vocabulary.

References

Baldwin,C. (2010). *How to Make free online crossword puzzle*

.http://www.ehow.com/how_6951945_make-online-crossword-

puzzles.html#ixzz0vg5BPMem Accessed on 6 February 2011

Brown, H. (1994). *Teaching by Principles Newjersey: prentice Hallinc.*

Brown. A. (2010). *Free Online Teacher Resourcer, Lesson Plan.*http://x-msg.net/9192/the-

educational-value-of-crossword-puzzles.htm

Collins, H. (2009). *Ollins English Dictionary-complete & Unabridged* (ten edition) Accessed

on 8 February 2011

Columbia Electronic Encyclopedia Dictionary (2007) www.cc.columbia.edu/cu/cup/

Accessed on 20 January 2011

Jamm, J. (2009) http://EzineArticles .com/?expert=Jimmy_ Jamm Accessed on 23 January

2011

Keong, T.(2009). *Two Strategies to facilitate Active Learning in Large Classes*. Available at

http://www/cdtl.nus.edu.sg/brief/v12n4/sec4.asp Accessed on 24 January 2011

Kilic, K. (2007). *Teaching English with Technology,a journal for teacher*. Vol. 7

Availableathttp://www.cpr4esl.com/gerrys_vocab_teacher/teaching_suggestion.html Accessed

on 17 January 2011

Kopft, A. (2010)*How to Make Crossword Puzzle for The

Classroom.*http://www.ehow.com/how 6684036 make- crossword- puzzles-classroom.html.

Accessed on 29 January 2011

Lehr, O. (2009). http://www.prel.org// Accessed on 2 February 2011.

Miller, S. (2009). http: /limist.gsu.edu/

Oxford Advanced Learners Dictionary (2008) (Third Edition). Oxford: Oxford University

Press. Accessed on 22 January 2011

Pakde , M. *How Can I Teach Elementary Vocabulary* Words.sofahttp://massofa.

Wordpress.com/2011/01/29/Teaching-English-Vocabulary-to-the-fourth-grades-of-

elementary-school/ Accessed on 29 January 2011

Patel, Tejas. (2010) http://www.tejaspastel.com/the-importance-of-a-good-vocabulary.

Accessed on 17 February 2011

Paul, K. (2003). *Teaching English for Children in Asia*. Hongkong: longman Asia ELT.

Polemikos, M (2009) *The Importance of Vocabulary Teaching*. http://www.plucha.info/

Accessed on 14 February 2011

Preble, Alec (2010) How to make a Free crossword puzzle.

http://www.ehow.com/how_7627945_make-crossword_puzzle.html.

Random House (2011). Based on the Random House Dictionary.

Raymononko. (2011) Improve your Brain with Crossword Puzzles.

http://hubpages.com/hub/crosswordpuzzlesoftware.Accessed on 23 January 2011

Robert (2006). Article: An analysis of instructor-created crossword puzzles for students

review (course material).http://www.highbeam.com/doc/IGI.143341156

Sanchez. 2007. Interactive Games in Teaching Learning Process. Available at

http://www.teoriaypraxis.uqroo.mx/doctors/numero4/Martinez-Perez-portfolio.pdf Accessed

on 28 February 2011

Saxena. 2009. A journal article, Crossword Puzzle: Active Learning in Undergraduate Pathology and Medical Education. Available at

http://www.highbeam.com/doc/1p3_1858623911 Accessed on 24 February 2011

Shoebottom, Paul (2007).http://esl.fis.edu/parents/advice/vocab.htm. Accessed on 17 February 2011

Slaterry,Marry.(2003) Defition of crossword puzzle

http://www.wordiq.com/definition/crossword puzzle Accessed on 30 January 2011

Thesearus Dictionary (2010). Accessed on 5 January 2011

Vaysbeyn, Elina. (2010). How to Create Printable Crossword Puzzles Online.

http://www.ehow.com/how 6461851 create-printable-crossword-puzzles-online-html Accessed on 24 January 2011

Webster's New Word College Dictionary (2009) Cleveland. Ohio: Willey & Son, Inc. Accessed on 10 January 2011

Young, Donna. (2010) Vocabulary is Important. http://

donnayoung.org/forms/help/vocabulary.html Accessed on 27 February 2011

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