

**THE USE OF INTERACTIVE GAMES IN INCREASING STUDENTS'
VOCABULARY SKILL: AN EXPERIMENTAL RESEARCH AT XI GRADE
STUDENTS OF SMKN 8 MATARAM SECOND SEMESTER ACADEMIC
YEAR 2015/2016**



ARTICLE

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APPROVAL

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**The Use of Interactive Games in Increasing Students' Vocabulary Skill: An
Experimental Research at XI Grade Students of SMKN 8 Mataram**

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ABSTRAK

Penelitian ini bertujuan untuk mengajar permainan interaktif secara signifikan dalam meningkatkan kemampuan kosakata siswa kelas XI SMKN 8 Mataram tahun ajaran 2015/2016. Populasi diambil dari kelas XI SMKN 8 Mataram yang keseluruhannya berjumlah 150 siswa. 2 kelas dipilih sebagai sampel, yaitu kelas XI Farmasi (kelas eksperimen) dan XI Keperawatan (kelas kontrol). Penelitian ini menggunakan metode kuantitatif. Permainan interactive diaplikasikan pada kelas eksperimen dan tidak pada kelas kontrol. Pada pemerolehan data, dilakukan analisis menggunakan pre-test dan post-test dimasing- masing kelas. Berdasarkan hasil analisis data, nilai t-test adalah 2,72465 yang mana nilai tersebut lebih besar dari t-tabel dengan kebebasan (df) dari 58 pada tingkat kepercayaan 0,05 (95%) adalah 2,0017 atau 0,01 (99%) adalah 2,6633. Ini berarti bahwa penggunaan permainan interaktif dapat meningkatkan kemampuan kosakata siswa.

Kata Kunci: *Interactive games and vocabulary skill.*

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ABSTRACT

This research aims to teaching interactive games significantly increases vocabulary skill at the eleventh grade of SMKN 8 Mataram in Academic Year 2015/2016. The population were taken from 5 classes which consisted of 150 students of the second grade of SMKN 8 Mataram in academic year 2015/2016. The sample were taken from 2 classes of the second grade by using cluster sampling technique and they were XI Farmasi (Experimental group) and XI Keperawatan (Control group). This research used quantitative method. In collecting data, this research used three steps, they were pre-test, treatment, and post-test. The interactive games was applied in the Experimental group during the experiment, while in the other class were not. In order to gain the data needed, this research used pre-test and post-test for both classes, and did a through analysis. Based on the result of data analysis, the t-test value was 2.72465 and it was higher than t-table value with degree of freedom (df) of 58 at the confidence level of .05 (95%) was 2.0017 or .01 (99%) was 2.6633. It means that the use of interactive games effective in increasing students' vocabulary skills.

Key words : Interactive games and vocabulary skill.

A. INTRODUCTION

Language takes an important role in human's communication. Through language, people can build an effective communication. In human life, language plays an essential role in making a communication (with others). In this global era, language has an important function to build the international relationship. Language can be a media to maintain a business relation, student exchange program and work in another country.

(Allen 1997 in Widyantiintan 2014) says that vocabulary is very important in a language, when we learn a language like English; we learn the words of language. Based on my own experiences as a teacher on PPL program in SMK 8 Mataram, students' ability in English is relatively very low. That happens because they do not understand about the meaning of what the teacher say and that makes them lazy to pay attention to the teacher.

Based on the reasons and problems above, this research is supposed to increasing students' vocabulary skill.

B. RESEARCH METHODOLOGY

Interactive teaching is giving students something to do and getting back what they have done by using their own creatively in classroom interaction. Learning a language should be interactive and fun in order to achieve some target such as to motivate, to encourage, or to relax the students, to live up the class and of course to teach certain language topics. By using games, the teacher can stimulate the creativity of their students. According to Carrier (1980 in Sanchez et al 2007:5) games are useful in class because they provide an opportunity for students to use their language in less a formal situation. The use of games in a learning environment will help the brain to learn more effectively. The brain needs to be worked out, tested and put into competitive situations. They are not for use solely on wet days and at the end of term". (Wright, et al., 1984. 1)

Types of interactive games:

1. Miming games
2. Hide and seek
3. Slap game
4. Jumbled words
5. Guessing words
6. Card game
7. Board game

Vocabulary is a fundamental requirement that influence students' achievement in studying English. Without vocabulary there is no communication, read and write conveyed. Talking about the vocabulary, it is necessary to present the types of vocabulary when speak to others, the speaker needs some words to express the idea desire, or when he listen he must be able to catch the meaning. Gains and Ruth 1986 in Ardi Wiranata 2014) say that receptive vocabulary as language item which can only be recognize and comprehended in the content of reading, listening material, and productive vocabulary as language items which the learner can recall and use appropriately is speech and writing.

According to (Keogh 2007 in Ardi Wiranata 2014) said "increasing your vocabulary can benefit your academic studies in a number of ways". It can help you:

1. Get through the reading you have to do much more quickly.
2. Express yourself more effectively in both written and spoken English.
3. Improve your marks in exam and assignments.
4. Give you confidence that you are actively engaging with subject
5. Connect you to community surrounding your subject area.

Then it is emphasized that, in order to improve vocabulary skill that most learning has several phases. With the vocabulary the process often goes something like this:

1. Identifying a new word.
2. Becoming familiar with the word (you have seen or heard before).

3. Being able to understand the word in appropriate context.
4. Being able to give a rough definition of it.
5. Truly “knowing” the word, using it naturally in speaking or writing.

Vocabulary is more than grammar because it is the key of people understanding in communication. People use vocabulary to get success in their communication with others. It is important to have more stock of vocabulary to improve our speaking, reading and also writing skill.

C. METHODOLOGY

Research Design

This research is done to find out the use of the interactive games improving students' vocabulary skill of the eleventh grade of students in SMKN 8 Mataram, in academic year 2015/2016.

Population and Sample

2 classes are elected from 5 classes of the eleventh graders in which each of the classes consists of 30 students. The total number of population is 150 respondents. The sample of this research is two classes of the eleventh grade. The two classes they are class XI farmasi and XI keperawatan used as the sample of this research.

Method of Data Collection

In order to gain the data, his research used tests/instrument . The questions of the test is about vocabulary.

Three steps were applied in classroom as follows:

- **Pre-test**
- **Treatment**
- **Post-test**

Method of Data Anlaysia

To analyze the finding data, this research used the following steps:

First step is tabulating the scores (Pre-test and Post test). In tabulating the scores, this research uses the formula below:

$$? \quad \frac{?}{?} \times 100$$

Where :

S = Score

R = Right answer

N = Total number of the test items

Second, after finding the students' scores, the next step is finding the mean deviation score of pre-test and post-test. The formula is applied for the experimental group to calculate the mean deviation scores is as follows:

$$? \quad \frac{\sum ?}{? ?}$$

Where:

X = Mean deviation score of the experimental group

x = Deviation score of Pre-test and Post-test

Nx = Number of samples

\sum = the sum of ...

Whereas the formula for the controlled group is as follows:

$$? \quad \frac{\sum ?}{? ?}$$

Where :

Y = Mean deviation score of the control group

y = Deviation score of Pre-test and Post-test

Ny = Number of samples

\sum = the sum of ...

Third step of the data analysis is finding the significance of two mean scores by using the following formula:

$$? \quad \frac{???}{? \frac{\sum ? \hat{e} ? \sum ? \hat{e} ?}{? ? ? ? ? ? ? ?} \quad ? \frac{?}{? ?} - ? \frac{?}{? ?} ?}$$

Where:

X = the mean deviation score of the experimental group
 Y = the mean deviation score of the control group
 x^2 = the square deviation score of the experimental group
 y^2 = the square deviation score of the control group
 N_x = number of samples of the experimental group
 N_y = number of samples of the control group
 Σ = the sum of ...
(Yusra, 2009)

Testing Hypothesis

After calculating scores, the last step is taking conclusion. The conclusion will be drawn as the following:

- a. If the t-test value is higher than the t-table value at the significance level of 0.01 and 0.05 it means that the material gives positive effects.
- b. If the t-test value is lower than the t-table value at the significance level of 0.01 and 0.05 it means that the material gives negative effects.

D. FINDINGS AND DISCUSSION

The data were gained during research conducted in both control group and experimental group of XI grade, SMKN 8 Mataram in the academic year of 2015/2016. The research had been conducted for 2 weeks or about 4 meetings. In detail, 2 meetings were used to deliver the lesson which consists of 90 minutes for one meeting and other 2 meetings were used to conduct the pre-test and post-test. The research conducted to know the use of interactive games and it was applied in the experimental group as the treatment. In contrast, the treatment was not given in the control group.

After gaining the score of data, they are shown and analyzed to find whether interactive games can improve students' vocabulary skill. The table below shows the result of pre-test and post-test of both the experimental (XI Farmasi) and control (XI Keperawatan) groups.

4.1.1 Pre-test and Post-test Score of the Experimental Group

Table 4.1.1. The pre-test and post-test scores of the experimental group

EXPERIMENTAL GROUP			
NO.	SUBJECT NAMES	PRE-TEST	POST-TEST
1	AARD	70	100
2	APP	20	75
3	AS	50	90
4	APS	35	75
5	DKAS	70	100
6	DP	15	75
7	EDDP	20	90
8	FR	20	95
9	GNR	35	90
10	HR	60	95
11	IN	65	100
12	IW	5	75
13	LHR	60	100
14	MF	40	90
15	MHM	30	75
16	MZ	50	100
17	M	45	90
18	NS	5	100
19	NNE	15	80
20	NNM	30	80
21	ND	55	100
22	NM	20	85
23	RSP	55	95

24	RP	40	95
25	SD	40	90
26	SF	20	90
27	WAA	35	75
28	WR	5	80
29	MA	35	85
30	SA	65	100
LOWEST SCORE		5	75
HIGHEST SCORE		70	100
AVERAGE SCORE		37	89

4.1.2 Pre-test and Post-test Score of the Control group

Table 4.1.2 The pre-test and post-test scores of the control group

CONTROL GROUP			
NO.	SUBJECT NAMES	PRE-TEST	POST-TEST
1	AF	15	90
2	AF	25	80
3	AH	20	80
4	AEAA	70	100
5	BBR	75	100
6	BYAW	15	75
7	DS	25	80
8	ESM	75	80
9	HF	25	90
10	IWGS	15	85
11	IWPW	40	95
12	LMP	25	80

13	LN	45	85
14	MSD	60	95
15	ME	75	95
16	N	70	100
17	N	75	95
18	NKNA	70	90
19	NPDA	15	90
20	NPSR	20	80
21	N	45	80
22	N	60	95
23	OS	75	100
24	RS	45	90
25	RW	35	85
26	SK	25	80
27	SK	40	75
28	T	55	95
29	WM	35	80
30	WR	50	85
LOWEST SCORE		15	75
HIGHEST SCORE		75	100
AVERAGE SCORE		44	87.66667

Table 4.1.1 shows that the lowest pre-test score for the experimental group is 5 by subject “IW, NS, and WR” and the highest score is 70 by subject “AARD and DKAS”. For the post-test, the lowest score is 75 by subjects “APP,DP,IW, MHM and WAA” and the highest score is 100 by subject “AARD,DKAS, IN, LHR, MZ,NS, ND, and SA”. The mean scores in the experimental group for the pre-test is 37 and the post-test is 89.

Table 4.1.2 shows that the lowest pre-test score for the control group is 15 by subjects “AF,BYAW, IWGS and NPDA” and the highest score is 75 by subjects “BBR,ESM,ME, and OS”. For the post-test in the control group, the lowest score is 75 by subject “BYAW ” and the highest score is 100 by subject “AEAA,BBR,N,OS ”. The mean scores in the control group for the pre-test is 44 and the post-test is 87.66667.

According to the findings of the pre-test and the post-test score of both the experimental and control groups above, this research tried to find out the mean deviation and square deviation score of the experimental and control group. Here is the further computation of data that was contributed and calculated in the t-test.

Table 4.2.1 The computation of deviation score of the Experimental Group

EXPERIMENTAL GROUP					
NO.	Subject Names	Pre-test (X1)	Post-test (X2)	Deviation Score of pre-test and post-test (X)	Square Deviation Score (X²)
1	AARD	70	100	30	900
2	APP	20	75	55	3025
3	AS	50	90	40	1600
4	APS	35	75	40	1600
5	DKAS	70	100	30	900
6	DP	15	75	60	3600
7	EDDP	20	90	70	4900
8	FR	20	95	75	5625
9	GNR	35	90	55	3025
10	HR	60	95	35	1225
11	IN	65	100	35	1225
12	IW	5	75	70	4900
13	LHR	60	100	40	1600
14	MF	40	90	50	2500

15	MHM	30	75	45	2025
16	MZ	50	100	50	2500
17	M	45	90	45	2025
18	NS	5	100	95	9025
19	NNE	15	80	65	4225
20	NNM	30	80	50	2500
21	ND	55	100	45	2025
22	NM	20	85	65	4225
23	RSP	55	95	40	1600
24	RP	40	95	55	3025
25	SD	40	90	50	2500
26	SF	20	90	70	4900
27	WAA	35	75	40	1600
28	WR	5	80	75	5625
29	MA	35	85	50	2500
30	SA	65	100	35	1225
SUM				$\Sigma ?$ 1560	$\Sigma x^2 = 88150$

Table 4.2.2 The computation of deviation score of the Control Group

CONTROL GROUP					
NO.	Subject Names	Pre-test (y1)	Post-test (y2)	Deviation Score of pre-test and post-test (Y)	Square Deviation Score (Y²)
1	AF	15	90	75	5625
2	AF	25	80	55	3025
3	AH	20	80	60	3600
4	AEAA	70	100	30	900
5	BBR	75	100	25	625

6	BYAW	15	75	60	3600
7	DS	25	80	55	3025
8	ESM	75	80	5	25
9	HF	25	90	65	4225
10	IWGS	15	85	70	4900
11	IWPW	40	95	55	3025
12	LMP	25	80	55	3025
13	LN	45	85	40	1600
14	MSD	60	95	35	1225
15	ME	75	95	20	400
16	N	70	100	30	900
17	N	75	95	20	400
18	NKNA	70	90	20	400
19	NPDA	15	90	75	5625
20	NPSR	20	80	60	3600
21	N	45	80	35	1225
22	N	60	95	35	1225
23	OS	75	100	25	625
24	RS	45	90	45	2025
25	RW	35	85	50	2500
26	SK	25	80	55	3025
27	SK	40	75	35	1225
28	T	55	95	40	1600
29	WM	35	80	45	2025
30	WR	50	85	35	1225
SUM				$\Sigma?$ 1310	$\Sigma y^2 = 66450$

The mean deviation score of the experimental group

$$X = \frac{\sum X}{n}$$

$$= \frac{1560}{30} = 52$$

$$\sum x \text{ square deviation } (\sum x^2) = \sum x^2 - \frac{(\sum x)^2}{n}$$

$$= 88150 - \frac{1560^2}{30}$$

$$= 88150 - 81120 = 7030$$

The mean deviation score of the control group

$$Y = \frac{\sum Y}{n}$$

$$= \frac{1510}{35} = 43.6666666667$$

$$\sum y \text{ square deviation } (\sum y^2) = \sum y^2 - \frac{(\sum y)^2}{n}$$

$$= 66450 - \frac{1510^2}{35}$$

$$= 66450 - 57203.3333333333 = 9246.6666666667$$

Identification of the significance of the deviation of two means scores

Based on the data above, it was identified that X = 52, Y = 43.6666666667, $\sum X^2 = 88150$, $\sum Y^2 = 66450$, $N_x = 30$ and $N_y = 35$. The value of t-test could be computed as follows:

$$t = \frac{X - Y}{\sqrt{\frac{\sum X^2}{n_x} - \frac{(\sum X)^2}{n_x^2} + \frac{\sum Y^2}{n_y} - \frac{(\sum Y)^2}{n_y^2}}}$$

$$t = \frac{52 - 43.6666666667}{\sqrt{\frac{88150}{30} - \frac{1560^2}{30^2} + \frac{66450}{35} - \frac{1510^2}{35^2}}}$$

$$t = \frac{8.3333333333}{\sqrt{2971.6666666667 - 81120 + 1898.5714285714 - 12142.8571428571}}$$

$$t = \frac{8.3333333333}{\sqrt{1727.4285714286}}$$

$$t = \frac{8.3333333333}{41.5745142857}$$

$$t = 2.72465$$

Based on the statistical analysis, the mean deviation score of the experimental group was higher than the mean deviation score of the control group. They were 52 for the experimental group and 43.66667 for the control group. It means that the interactive games applied to the experimental group and improved students' vocabulary skill.

Then, in order to know the significant level of the use of interactive games, this research used degree of freedom (df) which was interpreted by comparing two critical values (t-test and t-table). In this case, the degree of freedom was obtained by using the following formula:

$$\begin{aligned} \text{Df} &= (N_x + N_y) - 2 \\ &= (30 + 30) - 2 \\ &= 60 - 2 = \mathbf{58} \end{aligned}$$

The degree of freedom of 58 was 2.00 at the confidence level of .05 (95%) and 2.66 at the confidence level of .01 (99%).

Table 4.3.1. The comparison between t-test and t-table:

t-test	t-table		
	Degree of freedom (df)	.05 Confidence level of 95%	.01 Confidence level of 99%
2.72465	58	2.0017	2.6633

Based on the table above, the t-test is higher than the t-table at the confidence level of .05 (95%) or .01(99%). I conclude that the interactive games can improve students' vocabulary skill. So, the null hypothesis (Ho) formulated, "if the t-test value is lower than the t-table which reads, "Interactive games cannot improve students' vocabulary skill", is rejected. While the alternative hypothesis (Ha) formulated, "if the t-test value is higher than the t-table which reads, "Interactive games can improve students' vocabulary skill", is accepted.

During the research, I gave 20 questions which is jumble alphabet, matching pictures, and fill in the blank for pre-test and post-test. Those types of question used to measure students can or not to interpret the suitable vocabulary to answer it. After analyzing the pre-test of students, I found some problem of experimental group which they almost did not know the name of jobs, matching picture with the verb and also the name of place. And also students are lack of vocabulary although the vocabulary is common for them. From the pre-test, the control group score is higher than the experimental group. Based on my experiences teaching in SMKN 8 Mataram, the experimental group (XI farmasi) has low score in English subject compared with the other classes especially the control group (XI keperawatan). Therefore, I chose to apply the media to increase students' vocabulary skill on class that has low score on English subject. The result is the media that I used in experimental group is successful.

Finally, according to the interpretations above, I conclude that the interactive games can improve students' vocabulary skill at XI grade students of SMKN 8 Mataram in academic year 2015/2016. This statement was proven by the t-test value is higher than the t-table value at the confidence level of .05 (95%) or .01(99%).

E. CONCLUSION AND SUGGESTION

Conclusion

The result of this research is that interactive games can improve students' vocabulary skill. This is derived from the mean score of the experimental group which is higher than the mean score of the control group. The mean score of the experimental group is 52 and that of the control group is 43,66667. Besides that the t-test value is higher than the t-table value with the degree of freedom (df) of 58 at the confidence level of .05 (95%) or .01 (99%). In this case, the t-test value was 2.72465, while the t-table at confidence level of .05 (95%) was 2.0017 or .01 (99%) was 2.6633

It also can be seen from the result of post-test of both experimental and control group that was increased from the result of pre-test. By using interactive games as a

media, most of students had many vocabularies especially about name of job, name of place, and verb.

It can be concluded that this research can be hopefully used as one of the evidences that learning vocabulary by using interactive games significantly increases the students' score in English subject.

Suggestion

Based on the conclusion above, I would like to share some suggestions for teacher, students, and next researcher.

1. For teachers

- The teacher at SMKN 8 Mataram can apply the interactive games at classroom activity to increasing students' vocabulary skill especially for new students.
- The teacher at SMKN 8 Mataram should be active and creative to find a new media such as games and make teaching learning process more interesting especially in English subject.

2. For students

- The students at SMKN 8 Mataram especially for class XI Farmasi and XI Keperawatan should be more active in classroom participation during the teaching learning process to get good achievement especially in English subject.
- The students at SMKN 8 Mataram should read a lot of English words and open dictionary to increase their knowledge of vocabulary.

3. For the next researchers

- It is expected that the next researcher will concern more on the practice of teaching and learning process and enrich the information about the interactive games in increasing students' vocabulary skill.

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