USING RPG VIDEO GAMES TO IMPROVE ENGLISH VOCABULARY ACHIEVEMENT OF THE 8th GRADERS OF SMP LTI IGM PALEMBANG

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Abstract

The objectives of this study were to find out: (1) whether or not there was any significant improvement in students' English vocabulary achievement after they were taught by using Role-Playing Game (RPG) Video Games and (2) the students' perceptions on using RPG video games in learning English vocabulary. This study involved 20 eighth grade students. However, only 14 students were taken as the sample for the vocabulary tests and 19 students as the sample for the preference questionnaire due to the students' absence during the vocabulary test and questionnaire administration. To collect the data, the students were given 4 vocabulary tests consisting of a pre-test, two progress tests, and a post-test, as well as a preference questionnaire which were analyzed by using paired sample t-test and percentage procedure. The findings showed that: (1) there was a significant improvement in the students' vocabulary achievement between the pre-test and the post-test (p=0.000 < α=0.05) and (2) 95% of the students preferred using RPG video game to study English vocabulary. In conclusion, RPG video game was effective and preferable to be used in teaching vocabulary for the eighth grade students of SMP LTI IGM Palembang.

Keywords: teaching vocabulary, vocabulary achievement, games, video games, RPG video games

1. Introduction

Video games are electronic, interactive games known for their vibrant colors, sound effects, and complex graphics (Encyclopedia of Children's Health, 2015). There are various genres of video games, such as action, puzzle, and Role-Playing Game (RPG). RPG is the video game in which the players are actively interacting in it. Such kind of games could become one of the sources to acquire language skills. Cruz (2007) states that video games can be used to improve language instruction.

Every language has vocabulary. Linse (2005) defines vocabulary as the collection of words that an individual knows. In order to communicate well in a language, someone must have vast amount of vocabulary in order to maintain good communication and avoid misinterpretation. The amount of vocabulary of each language in this planet is for sure uncountable. Global Language Monitor (2015) estimated that English possesses 1,030,475.3 words and new word is created every 98 minutes. This shows that any language has an incredible amount of vocabulary and someone who wants to master a certain language must know a large amount of the vocabulary, if not all.

Acquiring vocabulary is not an easy task for anyone. Hiebert and Kamil (2005) explain that words represent complex and often have multiple meaning that must be understood in the context in sentences and paragraphs. They further explain that learners are expected to understand words in texts and acquire new words from the texts. However, there are some difficulties which commonly occur during acquisition process. Deciding what words should be taught and estimating the amount of vocabulary that can be acquired are some of the reasons (Hiebert and Kamil, 2005). Moreover, vocabulary learning is often perceived as boring by learners, especially for those who grew up in the digital age (Meihami, Meihami, and Varmaghani, 2013). Channeling the digital era technology to create effective media to use in vocabulary learning is a must and RPG video game contains dialogues that serve as the interaction media, making the video game one of the possible sources to acquire new vocabulary.

Cruz (2007) states that in ESL classroom, RPG video games are the most suitable video game genre as the instrument. RPG video games expose the player to the language skills and integrate them in an interesting way that could ensure the students to immerse them in the story. Due to vocabulary being a crucial part in the language skills, playing RPG video games that integrate the language skills also expose the player to vocabulary. This study analyzes how effective RPG video game can

improve the vocabulary achievement of students by experimenting and implementing the video game to the English language study.

The objectives of this study were to find out: (1) Whether or not there was any significant improvement in English vocabulary achievement of the 8th graders of SMP LTI IGM Palembang after they were taught by using RPG Video Games and (2) The students' perceptions on using RPG video games in learning English vocabulary.

2. Theoretical Background

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The objectives of this study were to find out: (1). Whether or not there was any significant improvement in English vocabulary achievement of the 8th graders of SMP LTI IGM Palembang after they were taught by using RPG Video Games and (2). The students' perceptions on using RPG video games in learning English vocabulary.

3. Method

This study used single-subject time-series experimental method. This study had experimental group as the subject. The purpose of the study was to find out the improvement after the treatment given to the experimental group and the progress the group made during the treatment. In doing this method, this study was done in 18 meetings, including 4 meetings of vocabulary test, which consisted of a pre-test, two progress tests, and a post-test.

The population of this study was the eighth grade students of SMP LTI IGM Palembang year 2015/2016 with total amount of students was 91. The sample of this study was Class 8B as experimental group which consisted of 20 students. However, only 14 students were taken as the sample for the vocabulary tests and 19 students as the sample for the preference questionnaire due to the students' absence during the vocabulary test and questionnaire administration. The sample was chosen based on the judgment that SMP LTI IGM divided the class according to the students' academic level, with 8B being a class with higher average academic level. Another judgment used in choosing the sample was the small amount of students in the class. The judgments are based on Cornillie, Jacques, De Wannemacker, Paulussen, and Desmet's (2011) explanation that using video game as a teaching media will work on more advanced students and that a small scale experiment will result in a more satisfying and accurate result.

The data were collected by using two instruments. The instruments were vocabulary test and preference questionnaire. The first instrument used in this study was vocabulary test. This study had four vocabulary tests consisting of a pre-test, two progress tests, and a post-test. The pre-test was given before the treatment, the two progress tests were given during the treatment, and the post-test was given after the treatment. Both pre-test and post-test consisted of 40 items with 10 items sentence completion, 10 items matching synonym, 10 items letter rearrangement, and 10 items sentence making, while the progress tests consisted of 20 items with 5 items sentence completion, 5 items matching synonym, 5 items letter rearrangement, and 5 items sentence making. The tests were given to check whether there was any significant improvement between each test or not.

The second instrument used in this study was preference questionnaire. this study used the questionnaire instrument in multiple choices of agreement and disagreement. The questionnaire was by the writer on the preferences and interests of the students during the treatment. The questionnaire consisted of 21 items and uses closed ended scaled questions adopted from Likert scale with the responses strongly agree rated 5,

agree rated 4, partially agree rated 3, disagree rated 2 and strongly disagree rated 1. The questionnaire was tested to 24 non-sample students to check the validity and reliability. The preference questionnaire's reliability coefficient was 0.900, which means that the questionnaire was reliable and valid. The questionnaire was given to check the students' preference of the method used in the treatment, which was RPG video game, to study English vocabulary.

After the data were collected, the data were analyzed by using SPSS 22 for Windows. The writer statistically analyzed the scores of the vocabulary tests to know the difference. The statistical analysis of the paired sample t-test means was applied to find out the significant difference of students' vocabulary achievement between each vocabulary test. The average scores were compared and analyzed to figure out whether there was a significant improvement between the vocabulary tests. The data from the questionnaire were processed by using percentage procedure to know the preference of students regarding the method used during research. The scores of the questionnaire ranged from 21 as the minimum score and 105 as the maximum score. The data were also calculated using regression analysis to know in which vocabulary aspect RPG video games contributed the most to the students' vocabulary achievement.

4. Result and Discussion

The Results of Students' Vocabulary Tests

This part shows the tests results of the students' vocabulary achievement.

Table 1. The Distribution of Students' Vocabulary Test Scores

Score Interval	Category	Pre-test		Progress Test 1		Progress Test 2		Post-test	
		Freq.	%	Freq.	%	Freq.	%	Freq.	%
86-100	Excellent	1	7.10%	13	92.90%	8	57.20%	9	64.30%
71-85	Good	3	21.40%	1	7.10%	5	35.70%	4	28.60%
56-70	Average	6	42.90%	-	0%	0	0%	0	0%
41-55	Poor	2	14.30%	-	0%	1	7.10%	1	7.10%
<40	Fail	2	14.30%	-	0%	0	0%	0	0%
Total		**14**	**100%**	**14**	**100%**	**14**	**100%**	**14**	**100%**

The pre-test data showed that there were 2 students (14.3%) in fail category, 2 students (14.3%) in poor category, 6 students (42.9%) in average category, 3 students (21.4%) in good category, and 1 student (7.1%) in excellent category.

Progress test 1 data showed that there were no students in fail, poor, and average category, 1 student (7.1%) in good category, and 13 students (92.9%) in excellent category.

Progress test 2 data showed that there were no student in fail category, 1 student (7.1%) in poor category, no students in average category, 5 students (35.7%) in good category, and 8 students (57.1%) in excellent category.

The post-test data showed that there were no student in fail category, 1 student (7.1%) in poor category, no students in average category, 4 students (28.6%) in good category, and 9 students (64.3%) in excellent category.

From the data acquired from the pre-test of the experimental group, the lowest score was 20 while the highest score was 92.5. The mean of pre-test was 62.86. In progress test 1, the lowest score was 80 and the highest score was 100, which was

better compared to the pre-test. In progress test 2, the lowest score was 55 and the highest one was 100, which was better compared to the pre-test but worse than progress test 1 where the lowest score was 80.

Compared to the pre-test, the scores of the post-test of the students increased. The lowest score was 53 while the highest was 100 and the mean was 82.86.

The Results of Paired Sample T-test

The scores of vocabulary tests were calculated by using Paired Sample T-test. Paired sample t-test was used to analyze the scores of vocabulary tests of students' achievement to find out whether or not there was any significant improvement in students' vocabulary achievement after being taught using RPG video game.

Table 2. Descriptive Statistics of Vocabulary Tests

Tests	Mean	N	Std. Deviation	Std. Error Mean
Pre-test	62.86	14	19.46	5.20
Progress test 1	95.36	14	5.71	1.52
Progress test 2	86.79	14	10.49	2.80
Post-test	86.86	14	11.93	3.19

Based on Table 2, the mean of pre-test was 62.86, the standard deviation was 19.46, and the standard error was 5.20. As for progress test 1, the mean was 95.36, the standard deviation was 5.71, and the standard error was 1.52. Progress test 2's mean was 86.79, the standard deviation was 10.49, and the standard error was 2.80. Meanwhile the mean of post-test was 86.86, standard deviation was 11.93, and standard error was 3.19.

Table 3. The Summary of Statistical Analysis on the Vocabulary Tests Using Paired
Sample T-Test

	Paired Differences					t	Df	Sig. (1-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Post_test - Pre_test	24	12.3	3.29	16.9	31.10	7.301	13	.000
Progress_1 - Pre_test	32.5	16.35	4.37	23.06	41.94	7.438	13	.000
Progress_2 - Progress_1	-8.57	7.7	2.06	-13.02	-4.12	-4.163	13	.000
Post_test - Progress_2	.071	7.96	2.13	-4.52	4.67	.034	13	.487

Table 3 shows the results of paired sample difference in mean between vocabulary tests. Between the pre-test and progress test 1, the mean difference was 32.5 with standard deviation 16.35 and standard error 4.37. The t-obtained 7.438 was greater than t-table 1.771 in one-tailed testing and p-value 0.000 was smaller than the significance value α 0.05. This means that there was a significant improvement in the students' vocabulary after the first treatment period. Between the progress test 1 and progress test 2, the mean difference was 8.57 with standard deviation 7.96 and standard error 2.13. The t-obtained 4.163 was greater than t-table 1.771 in one-tailed testing and p-value 0.000 was smaller than the significance value α 0.05. However, the calculation result was in negative point. This means that there was a reduction in the students' vocabulary achievement between the first and second treatment period. Between the progress test 2 and post-test, the mean difference was 0.071 with standard deviation 7.96 and standard error 2.13. The t-obtained 0.034 was lower than t-table 1.771 in one-tailed testing and p-value 0.487 was greater than the significance value α 0.05. This means that there was no significant improvement in the students' vocabulary achievement between the second and third treatment period.

Finally, between the pre-test and post-test, the mean difference was 24 with standard deviation 12.3 and standard error 3.29. The t-obtained 7.301 was greater

than t-table 1.771 in one-tailed testing and the p-value 0.000 was smaller than the significance value α 0.05, so the null hypothesis (H_o) was rejected and the research hypothesis (H_a) was accepted. It means that there was a significant improvement in the students' vocabulary achievement between the pre-test and the post-test.

Results of Questionnaire

The questionnaire consists of 21 questions. The questionnaire was based on Likert scale with five responses. The maximum score in the questionnaire is 105 and the minimum score in the questionnaire is 21. The data collected was calculated using the percentage procedure. The following table and chart shows the result of percentage procedure calculation and the distribution of students' preference questionnaire scores respectively.

Students' Preference Questionnaire Answers Percentage

- 1 Strongly Agree : 35%
- 2 Agree : 35%
- 3 Partially Agree : 25%
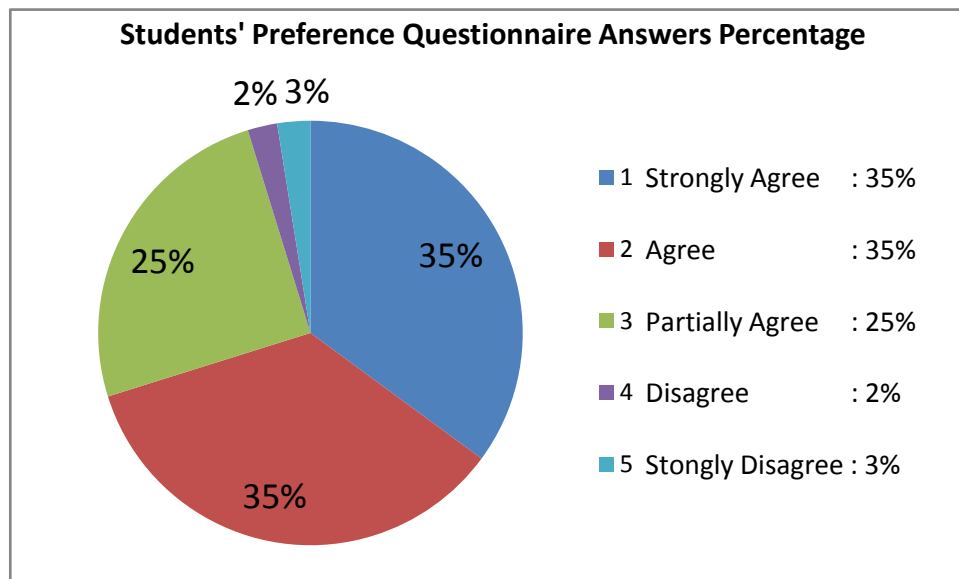- 4 Disagree : 2%
- 5 Stongly Disagree : 3%

Figure 1: Chart of percentage procedure summary

The results of the percentage procedure calculation showed that 35% of the students strongly agreed with the method, 35% of the students agreed with the method, 25% of the students partially agreed with the method, 2% of the students

disagreed with the method, and 3% of the students strongly disagreed with the method. According to the chart, the result showed that 95% of the students preferred using the method during treatment, which is using RPG video game to study English vocabulary.

Table 4. The Distribution of Students' Preference Questionnaire Scores

Score Interval	Category	Frequency	Percentage
84-105	Highly Preferable	10	52.6%
63-83	Preferable	9	47.4%
42-62	Not Preferable	0	0%
21-41	Highly Not Preferable	0	0%
Total		**19**	**100%**

The distribution table showed that 10 (52.4%) of the students highly preferred studying English vocabulary using RPG video game, 9 (47.6%) of the students preferred studying English vocabulary using RPG video game, and no students thought that studying English vocabulary using RPG video game was not preferable and highly not preferable.

Result of Regression Analysis

Regression analysis was done to find out in which vocabulary aspect RPG video game contribute the most to the students' vocabulary achievement. There are three aspects that form a vocabulary, namely form, meaning, and use.

Table 5

Result of Regression Analysis

Model Summary of Form

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.277[a]	.077	.000	11.507

a. Predictors: (Constant), RPG

Model Summary of Meaning

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.584[a]	.341	.286	23.803

a. Predictors: (Constant), RPG

Model Summary of Use

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.093[a]	.009	-.074	7.730

a. Predictors: (Constant), RPG

Table 5 shows the result of regression analysis. The R^2 for each aspect were 0.077 for form aspect, 0.341 for meaning aspect, and 0.009 for use aspect. This means that RPG video games contribute 7.7% of form aspect, 34.1% of meaning aspect, and 0.9% of use aspect. It can be concluded that from the three aspects, RPG video games contributed the most to the meaning aspect of vocabulary.

Discussion

There are several methods to teach English vocabulary. However, what matter the most is that the students are willing to study and gain new vocabulary. As stated by Meihami, Meihami, and Varmaghani (2013), vocabulary learning is considered boring by learners who grew up in digital age. In order to ensure that the students

keep gaining new vocabulary as well as to ensure that they are not bored, using digital media is a must. One of the digital media that can be used to increase vocabulary is video games, specifically RPG video games. The writer found out that the method used in this study, which was using RPG video game to increase the students' vocabulary achievement, was effective for Class B eighth grade students in SMP LTI IGM Palembang. There is a reason why RPG video games can improve the students' vocabulary achievement. Kerka (2000) stated that incidental learning is unintentional or unplanned learning which involves no deliberate intention to learn or to analyze language, an explanation which might include implicit learning in the psychological sense. Video games are for entertainment, so psychologically the player feels fun doing it and not realizing that he/she is actually learning when playing a video game. RPG video games are one of video game genres that use words as the crucial part in order for the game to be played. This means that the player, which was motivated to finish the RPG video game, would acquire new words unconsciously while enjoying and trying to finish the video game. This was proven by the result of the vocabulary tests and the result of questionnaire. The comparison between the pre-test and post-test showed a significant improvement in the scores while the preference questionnaire showed that the students liked the method used during the treatment. However, the writer also found out that the students needed help from both the teacher and dictionary in order to understand the new vocabulary from the game. Moreover, the tendencies of clicking persisted and thus the students missed several words which are supposed to be discussed in the following meeting. The genre of the RPG video game must also be taken into consideration, since the students preferred the game with active action where the player actively involved in fast gameplay rather than turn-based action where the player and the computer take turn for action.

Based on the findings of the study, some interpretations were drawn. The findings show that (1) there was a significant improvement in English vocabulary achievement of the 8th graders of SMP LTI IGM Palembang after they were taught by using RPG

Video Games and (2) the students' perceptions on using RPG video games in learning English vocabulary were positive.

The first finding showed the results of Paired Sample T-Test between the four vocabulary tests. The result showed that there was significant improvement in students' English vocabulary achievement after they were taught using RPG video game. The result was as expected by the writer since according to Cruz (2007) video games can be used to improve language instruction. Another reason as to why the result was satisfactory is because Cornillie, Jacques, De Wannemacker, Paulussen, and Desmet's (2011) explains that using video game as a teaching media will produce more satisfying and accurate result in a small scale experiment. The results of each test serve as the proof that the students improved their vocabulary achievement. Before the treatment, the result of the pre-test showed that there was only one student fall into the excellent category. This signifies that the students still lack in English vocabulary. After the first treatment, the students gained better scores in the progress test 1 where this become the proof that the students understood and absorbed the vocabulary given through the video game. The results of the progress test 2 and post-test also showed that the students gained the vocabulary introduced in the video game and understood the use of the words in sentences where the students achieved good scores. However, compared to the scores in both progress tests, the students' scores lowered in the post-test. This might be due to the progress tests having less test items as well as having more preparation since the vocabulary they acquired was still fresh in their memory compared to the post-test where the students' must recall all the vocabulary from the beginning of the treatment until the end of the treatment.

The second finding showed the results of percentage procedure of preference questionnaire. The result showed that 95% of the students preferred using RPG video game to study English vocabulary. It means that the students considered that studying English vocabulary using RPG video games was preferable. This result was expected since during the treatment, the students enjoyed playing the game while at the same time they managed to take notes on the new words encountered while playing to be

discussed later. On the other hand, some students forgot to take notes on the new words encountered due to enjoying the video game too much. This resulted in less vocabulary acquired by some students compared to other students who took notes while playing. Aside from that, RPG video games contributed to the students mostly only on the meaning aspect. This can be seen in the result of the students' post-test where the students scored higher in the questions regarding the meaning of the word. This is due to that during the treatment; the discussion focused more on the meaning of the word rather than the use in a sentence and the form of the word.

5. Conclusion and Remark

The conclusion was constructed on the basis of the research findings. The writer found out that the method used in this study, which was using RPG video game to increase the students' vocabulary achievement, was effective for Class B 8th grade students in SMP LTI IGM Palembang. The comparison between the pre-test and post-test showed a significant improvement in the scores while the preference questionnaire showed that the students liked the method used during the treatment. However, the writer also found out that the students needed help from both the teacher and dictionary in order to understand the new vocabulary from the game. Moreover, the tendencies of clicking persisted and thus the students missed several words which are supposed to be discussed in the following meeting. The genre of the RPG video game must also be taken into consideration, since the students preferred the game with active action where the player actively involved in fast gameplay rather than turn-based action where the player and the computer take turn for action.

References

Cameron, L. (2001). *Teaching Languages to Young Learners.* Cambridge, UK: Cambridge University Press.

Cruz, J. Q. (2007). Video games and the ESL classroom. *The internet TEST Journal, 13(3).* Retrieved April 29, 2015, from http://iteslj.org/Articles/Quijano-VideoGames.html

Cornillie, F., Jacques, I., De Wannemacker, S., Paulussen, H., & Desmet, P. (2011). Vocabulary treatment in adventure and role-playing games: A playground for adaptation and adaptivity. *Itec – Interdisciplinary Research on Technology, Education, and Communication*, 1-17.

Encyclopedia of Children's Health. (2015). *Video Games.* Retrieved October 22, 2015, from http://www.healthofchildren.com/U-Z/Video-Games.html#ixzz3pFiiCzmz

Global Language Monitor. (2015). *No. of words*. Retrieved October 18, 2015, from http://www.languagemonitor.com/global-english/no-of-words/

Griffiths, M. (2002). The educational benefits of video games. *Education and Health, 20(3)*, 47-51.

Heaton, J. B. (1990). *Writing English Language Tests: New Edition*. New York, NY: Longman, Inc.

Hiebert, E. H., & Kamil, M. L. (2005). *Teaching and Learning Vocabulary: Bringing Research to Practice.* Mahwah, NJ: Lawrence Erlbaum Associates, Inc., Publishers

Hornby, A. S. (2010). *Oxford Advanced Learner's Dictionary International Student's Edition* (8th ed.). Oxford, UK: Oxford University Press.

Kerka, S. (2000). *Incidental Learning: Trends and Issues Alert (No. 18)*. New York, NY: Peter Lang.

Linse, C. T. (2005). *Practical English Language Teaching: Young Learners.* New York, NY: McGraw-Hill Companies.

Meihami, H., Meihami, B., & Varmaghani, Z. (2013). CALL in the form of simulation games: Teaching English vocabulary and pronunciation through Sims. *International Letters of Social and Humanistic Sciences*, *8*, 57-65.

National Center for Reading First Technical Assistance. (2008). *Effective Vocabulary Instruction*. Austin, TX: University of Texas.

Whittaker, S. (2013). Educational use of video games in the ESL classroom. *UAE Journal of Educational Technology and Learning,* 6-15.