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DEVELOPING HARMONY OF DIGITAL TRANSFORMATION IN ELT

The Effect of Using Educational Games as the Features in *Rumah Belajar* toward Student's Vocabulary Mastery at the Seventh Grade of SMPN 1 Pasarkemis

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Abstract

This research is aimed to find out any significance effect of Educational Games as the features in *Rumah Belajar* toward student's vocabulary mastery at the seventh grade of SMPN 1 Pasarkemis. This research is a quantitative research method by implementing a quasi-experimental design. This study involved 78 students as the sample, consisted of 39 students in the experiment class and 39 students in the control class. Pre-test was given to both classes at the first meeting and then the post-test at the last meeting. To find the effect, the post-test was provided to both classes. The hypothesis testing was computed using the independent sample t-test through SPSS 25.0. The result demonstrated the positive effect of Educational Games in *Rumah Belajar* toward students' vocabulary mastery at the seventh grade of SMPN 1 Pasarkemis. The result of Sig. (2-tailed) of Independent T-test at 0.000, which was lower than 0.05 ($0.000 < 0.05$). Therefore, this demonstrates that the alternative hypothesis is accepted. It means using educational games increase students' vocabulary skills. Therefore, it can be concluded that there is any significant effect of using educational games in *Rumah Belajar* toward student's vocabulary mastery at the seventh grade of SMPN 1 Pasarkemis.

Keywords: Digital; Edugames; Media; *Rumah Belajar*; Vocabulary

INTRODUCTION

Vocabulary is the first crucial stage in language learning and usage. It is considered as the heart of language comprehension. Vocabulary is the first element that English learners must learn in order to master English well besides the other English components and skills, (Ghonivita et al. 2021).

As one of the essential aspects of language learning, vocabulary plays a significant role in mastering four language skills. Vocabulary mastery is paramount to supporting the four language skills, and it determines the success of students' communication, (Hidayatullah, Munir, and Tawali 2022). The ability to read, listen, speak, and write requires a mastery of vocabulary. When people need to receive information by reading and listening, vocabulary enables them to recognize word meanings and sentences to understand the information. At the same time, people who want to communicate and deliver

their ideas need a wide range of vocabulary as the main facility to arrange sentences. Therefore, they can create well-ordered sentences and speak fluently. For this reason, vocabulary mastery is necessary so that students can follow the learning process of English language subjects in school more efficiently and master English well.

Problems in obtaining vocabulary commonly happen in Junior High School. Based on the interview with one of the teachers at SMPN 1 Pasarkemis, it was found that most students lack vocabulary, have difficulty memorizing the vocabulary and lack interest to bring and use the dictionary to discover the word's meaning. Besides, the teacher at SMPN 1 Pasarkemis only use a book and worksheet that provided by the school as a media in teaching vocabulary. The book that used is contains a text with a several pictures to support the vocabulary learning. The media used is monotonous and not contains an interactive design, so that the students will likely get bored easily. Therefore, the teachers at SMPN 1 Pasarkemis thinks the media is still less effective in enriching students' vocabulary mastery because the result of student's English test on the previous semester still not increase. Based on these problems, it is necessary to apply new learning media that can increase their vocabulary.

The use of digital media allows students to able mastery the vocabulary and being motivated in learning vocabulary. This fact has been supported by some previous research. The first previous research came from Suryadi (2022), entitled "Using Google Word Coach Game to Enhance Students' Vocabulary Mastery" from . This research found that using Google Word Coach games as the digital educational games on teaching students' vocabulary mastery is a great way to improve students' vocabulary mastery. Another previous research entitled "The Effect of Game Application "Mr. Detective" In Students' Vocabulary Mastery" by Lubis & Zulfitri, (2022). This study proved that there is a significant effect in students' vocabulary mastery by teaching using educational games named "Mr. Detective". The last previous study is "The Use of "Drops" Application and Its Effect on Students' Vocabulary Achievement" by Cahanaya et al., (2022). This research found that students are more interested in learning and make it easier for students to get and enrich their vocabulary by using "Drops" application as the media.

Considering the situation, the researchers has interested to find an effect of using educational games as the features in *Rumah Belajar* toward students' vocabulary mastery at the seventh-grade students of SMPN 1 Pasarkemis. The use of digital media is more flexible, and the visualizations offered can encourage students in the learning process. Therefore, learning vocabulary using digital educational games can provide an opportunity to make students enjoy and be interested in learning vocabulary. The digital educational game used in this study is shown as one of the features in *Rumah Belajar* portal, provided by the minister of education and culture (KEMDIKBUD).

METHOD

This research used quantitative research method by implementing quasi-experimental design. Quantitative research methodologies are most often associated with scientific investigation of quantifiable properties and their relationships (Frey, 2022). Experimental research is designed to test hypotheses under controlled conditions (Sheppard, 2021). The design used for this research was Quasi Experimental research with pre-test and post-test control group Design.

The population in this research was all of the students at the seventh grade of SMPN 1 Pasarkemis, which consisted of ten classes. Therefore, by using cluster sampling technique, the samples of this research were two classes of the seventh grades students with the total number of samples was 78 students which divided into Experimental Group and Control Group.

This study applied three types of tests, try-out, pre-test, and post-test as the instrument to collect the data. First, try out was carried out to measure the test's validity and reliability. The pre-test and post-test items were made by the number of valid and reliable questions. Then, both the experimental and control classes were given a pre-test and a post-test to collect comparative data and measured students' vocabulary mastery before and after the treatment using educational games in *Rumah Belajar*.

Furthermore, this research used data analysis techniques to answer the questions and solved existing problems. In order to decide if the data could be measured using the independent t-test (parametric test), the data were first analyzed to find its normality using Kolmogorov-Smirnov and homogeneity using Levene test as the pre-requisite to apply the parametric test. The data were taken from pre-test and post-test; and then analyzed using the SPSS 25 version program.

RESULT

Research Findings

The pre-test and post-test were administered to both the control and experimental groups. The pre-test and post-test score between both groups are shown in table below:

Table 1. The result of Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Pre-test Experiment	39	48	92	68.97	10.411
Post-test Experiment	39	76	100	90.05	6.735
Pre-test Control	39	52	88	70.62	8.450
Post-test Control	39	68	96	83.74	7.556

The table shows that in the experimental class, the average pre-test score was 68.97, and the average post-test score was 90.05. The gap between the average score of pre-tests with post-test in the experiment class was 21.08. Moreover, the minimum score of pre-test in experimental class was 48, while in post-test 76. Besides, the maximum score of pre-tests was 92, while in post-test was 100.

Furthermore, the control class average pre-test score was 70.62. The post-test showed improvement, with an average score of 83.74 points, the gap between the score of pre-test and post-test was 13.13. Additionally, the minimum score of pre-test in control class was 52, while in post-test 68. Then, the maximum score of pre-test was 88, whereas in post-test was 96. This indicates that after receiving the treatment, the result of student's post-test in the experimental class is higher than the control class.

Test of Validity and Reliability

Validity

The instrument in this study tested on 39 students who were randomly selected by the researcher in class VIII.4. The researcher used content validity to verify the validity of tests, which enrolled the help of English teacher in SMPN 1 Pasarkemis. Furthermore, another validity test was using Pearson Product Moment Formula. If the test is $r_{\text{count}} \geq r_{\text{table}}$, it is considered valid. The findings from the calculation of validity test shows that 28 number of questions were valid, whereas 22 number of questions were invalid.

Reliability

The researcher analyzed the data obtained from the tryout testing using the Split Half Spearman Brown formula using SPSS 25 version. Finally, the results of the reliability test was 0.807. Therefore, the test was reliable because the value of the Guttman Split-Half Coefficient is higher than r-table ($0.807 > 0.316$).

Students Vocabulary Mastery before Treatment

The Normality of Pre-test

The result of the normality test of pre-test shows 0.200 for the experimental group, and 0.099 for the control group. From that data, with significance of the two classes is more than 0.05, it could be concluded that the pre-test from both classes were normally distributed.

The Homogeneity of Pre-test

The researcher calculated the homogeneity of pre-test using Levene's statistical test. The result from the calculations shows 0.302, as the sig. value is more significant than 0.05, the pre-test data was homogeneous.

The Hypothesis testing of Pre-test

Pre-test was used to find out students' vocabulary mastery before the treatment. Then, T-test used to analyze the difference of student's prior vocabulary mastery between experimental and control group. The following criteria must be fulfilled to making decision:

1. If the significance value or Sig. (2-tailed) > 0.05 , it means that there is no significance difference of student's prior knowledge between experimental group and control group.
2. If the significance value or Sig. (2-tailed) < 0.05 , it means that there is significance difference of student's prior knowledge between experimental group and control group.

Table 1. Independent Sample T-test of Pre-test

Independent T-test (Experimental & Control)			
Pre-test	t	df	Sig(2-tailed)
	-.764	76	0.447

The result of student's pre-test from both groups are presented on Table 2, it shown the value of Sig (2-tailed) = 0.447. Moreover, the result of Sig. (2-tailed) $0.447 > 0.05$. It means that there is no significant difference of student's prior knowledge between experimental group and control group. Thus, it can be concluded that both groups have a same level of vocabulary knowledge before the treatment.

Students Vocabulary Mastery after Treatment

The Normality of Post-test

The result showed that the experimental class post-test has significant levels of 0.082. Besides, the post-test control class was 0.123. From that result, with significance of the two classes is more than 0.05, it could be concluded that the post-test from both classes were normally distributed.

The Homogeneity of Post-test

The result shows that the homogeneity of the post-test was 0.466. As the sig value is more significant than 0.05, and it means that the data of the post-test was homogeneous.

The Hypothesis Test of Post-test

T-test was used in this study because considering the research formulation. The researcher wants to determine and measure the significant effect of students' vocabulary mastery (Y Variable) through Educational Games in *Rumah Belajar* (X Variable). Therefore, there were two hypotheses in this research, there are:

1. H_0 (Null Hypothesis): There is no significant effect of using educational games as the features in *Rumah Belajar* toward students' vocabulary mastery at SMPN 1 Pasarkemis
2. H_a (Alternative Hypothesis): There is any significant effect of using educational games as the features in *Rumah Belajar* toward students' vocabulary mastery at SMPN 1 Pasarkemis

The following criteria must be fulfilled to accept or reject the hypothesis:

1. If the significance value or Sig. (2-tailed) > 0.05 , it means that the Null hypothesis (H_0) is accepted, and (H_a) is rejected.
2. If the significance value or Sig. (2-tailed) < 0.05 , it means that the Alternative hypothesis (H_a) is accepted, and (H_0) is rejected.

Table 2. Independent Sample T-test of Post-test

Independent T-test (Experimental & Control)			
Post-test	t	df	Sig(2-tailed)
	3.892	76	0.000

The result of learning vocabulary from both groups are presented on Table 3, it shown the value of Sig (2-tailed) = 0.000. Moreover, the result of Sig. (2-tailed) $0.000 < 0.05$. Thus, the Alternative Hypothesis is accepted, and Null Hypothesis is rejected. It means that there is a significant effect of using Educational Games as the Features in *Rumah Belajar* toward student's vocabulary mastery at the seventh grade of SMPN 1 Pasarkemis.

DISCUSSION

This research was conducted to find out the effect of using Educational Games as the features in *Rumah Belajar* toward student's vocabulary mastery at the seventh grade of SMPN 1 Pasarkemis, Tangerang. Based on the result of the student's score, the improvement of student's score in experimental group was from 68.97 to 90.05. Besides, the improvement of student's score in control group was 70.61 to 83.74. Thus, there is a difference between the average results of the pre-test and the post-test, it reached 6.31. So, the experimental group showed much better improvement than the control group. However, to confirm the result, the calculation of hypothesis testing was conducted by using Independent T-test.

Based on the result of the calculation hypothesis testing, it showed that the result of analyzed independent t-test in this research showed that the sig. (2-tailed) was significantly lower than 0.05, which is $0.000 < 0.05$. So, as the basis for decision making in the Independent Sample t-test, it can be concluded that the alternative hypothesis (H_a) was accepted, and the null hypothesis (H_o) was rejected. It can be concluded that there was significance effect of using Educational Games as the features in *Rumah Belajar* toward student's vocabulary mastery at the Seventh Grade of SMPN 1 Pasarkemis.

Following are some expert views to support the analysis of this research. The study from (Vnucko and Klimova 2023) stated digital games for language learning can facilitate the development of all four major language skills, and can additionally develop their vocabulary and grammatical competence. Another study is from (Amalisa and Rozimela 2021), stating game can enhance students' ability in memorizing a word so it can influence learning activities. This means learning using educational games can help students increase their language skills which has a positive impact on learning activities, particularly vocabulary. This can be seen from the result of students score from experimental group who was taught by using educational games in *Rumah Belajar* showed more significant result than the control group.

Besides, the score from the control group which not given a treatment also has an increasement, even not as significant as the experimental group. This result related to the study from (Putri, Tyas, and Perdhani 2022), English vocabulary teaching must employs a variety of media to engage students in receiving the subject in the classroom. It can be stressed that the use of media facilitated students as a tool for a better result of language learning.

Moreover, using educational games in *Rumah Belajar* has a significant effect toward student's vocabulary mastery. As (Akhwani, Rahayu, and Djazilan 2022) states, Edugame *Rumah Belajar* is learning media which helping both students and teachers in achieving specific learning outcomes. Besides, Teaching vocabulary using educational games as it helps to struggle against the difficulties, (Argit and Demirel 2020). It also supported by the previous research conducted by (Suryadi 2022), found that using digital media "Google Word Coach Game" are able to improve student's mastery of English vocabulary. In addition, research from (Lubis and Zulfitri 2022) proved that teaching using digital educational games named "Mr. Detective" has a significant effect in the student's vocabulary mastery. In the same way with the research conducted by (Cahanaya et al. 2022). This research found that students are more interested in learning and make it easier for students to get and enrich their vocabulary by using digital educational games named "Drops" application as the media.

Furthermore, many researchers have shown that using educational games as a teaching media has provides a positive impact in learning activities, particularly vocabulary. Likewise, this research also presents a great insight on utilizing educational games in English vocabulary learning. However, this research used an educational game that shown as one of the features in *Rumah Belajar* portal.

In addition, each study focuses on different grade levels and materials. The research from (Suryadi 2022) and (Lubis and Zulfitri 2022) emphasizes an effect of using educational games toward student vocabulary mastery in Senior High School. While this research used seventh grade Junior High School students as the sample. Moreover, all of the previous research does not have a specific types of vocabulary materials. Besides, this research focused on the Noun vocabulary, specifically groceries materials.

To conclude this, the researcher found that seventh grade students at SMPN 1 Pasarkemis who were taught using Educational Games in *Rumah Belajar* showed an improvement in their vocabulary mastery in learning English. This can be deducted that there is a significance effect of using educational games as the features in *Rumah Belajar* toward student's vocabulary mastery at the seventh grade of SMPN 1 Pasarkemis.

CONCLUSION

Research shows that using educational games has a significance effect toward student's vocabulary mastery. Therefore, this study aims to know the effect of using educational games in *Rumah Belajar* toward student's vocabulary mastery. This research was conducted at the seventh-grade students

of SMPN 1 Pasarkemis. The participants in this study were 78 students from experimental and control classes.

Based on the scores of student's vocabularies learning analysis by independent T-test. The higher results achieved by the experimental group, which is 90.05. This result is significantly different from the control group, which is 83.74. From the data analysis it showed that the value of Sig. (2-tailed) was 0.000, which is lower than 0.005. Then, based on the basic rules of independent T-test $0.000 < 0.005$, it means that alternative hypothesis was accepted. To conclude, using educational games as the features in *Rumah Belajar* has a significance effect toward student's vocabulary mastery at the seventh grade of SMPN 1 Pasarkemis.

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