

THE USE OF AUGMENTED REALITY (AR) MEDIA TO ENHANCE STUDENTS' VOCABULARY MASTERY AT SEVENTH GRADE STUDENTS OF SMP NEGERI 7 TARAKAN

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ABSTRACT

This research aimed to find out the average difference of Augmented Reality students' learning results in enhancing vocabulary mastery understanding about describing animals. The subjects of this research were 26 students from grades 7-6 of SMP Negeri 7 Tarakan in the academic year 2021/2022 using the pre-experimental method. This was research with One Group Pretest-Posttest design. Sample selection using Purposive Sampling. The instruments were a vocabulary test in the pretest and posttest to measure students' achievement in the learning process during treatments. The hypothesis was tested using Parametric Paired Sample T-Test. Paired Sample T-Test showed that the average students score in Pretest and Posttest. This is evidenced by the results of the average score of students. The average score in the Pretest was 53,12 and the average score in the posttest was 72,81. The results show the posttest was higher than the Pretest value. This shows that there was a significant difference in the students' vocabulary mastery at the pretest and posttest. Other than that, the value of N Gains both pre-test and post-test showed 0.42 is categorized as Normal. In addition, the paired sample t-test test results showed that -t-test (-7.010) is smaller than -t-table (-2.060). Based on the test results, the researchers concluded that the use of Augmented Reality media was proven to be effective in enhancing vocabulary comprehension learning outcomes in describing animals in the seventh grade of SMP Negeri 7 Tarakan

Keywords: Vocabulary Mastery, Augmented Reality

INTRODUCTION

In learning English as a foreign language, vocabulary is considered the most important factor in enhancing the four language skills. The four language skills are listening, speaking, reading, and writing. These four skills are not able to be mastered if learners are lacking vocabulary. In fact, of all language components, vocabulary holds the main core in language teaching. According to Richard and Renandya (2002:255) said that vocabulary is a core component of language proficiency and provides much of the basis for how well learners speak, listen, read, and write. It means that to enhance their language skills, learners must master the vocabulary. However, based on pre-research on 13th March 2021, at SMP Negeri 7 Tarakan, by interviewing the English teacher. The researcher found some problems related to vocabulary. The results are far below the standard minimum understanding students have. They had difficulties in pronouncing the words, how to spell or write, how to make the correct sentences and they are still confused in using the words based on the context. The researcher found that all those problems above are influenced by some factors such as students, teachers, materials, or teaching methods. The first problem comes from the students. They are not confident and afraid of making a mistake when they want to express their opinions, ideas and they do not have

a partner to practice their English ability. The second problem is related to the English teacher. English teachers used the traditional method.

The teacher explains that the topic starts from the beginning until the ending of the lesson without any action. So, it makes students feel bored and lack motivation in the learning process. The third problem is concerned with the materials. The materials used are only a textbook supported by a whiteboard. So, as a teacher to think creatively in finding various ways to make the students motivated to learn.

According to Nation, (2001, p. 13) for junior high school, they are expected to master at least the first 1,000 high-frequency words. By mastering at least the high-frequency words it can help the students in understanding the target language. To solve those problems, the researcher tries to find an effective solution to improve the student's vocabulary mastery. Flashcards, word walls, scrabble games, picture by picture, crossword puzzles, comic strips, songs, word mapping, etc; those techniques are commonly used in other studies.

In this research, the researcher will conduct the best user experience by using media augmented reality (AR). According to Shapley et al. (2011) and Vega & Arifin (2022), the use of technology influences the educational field. Technology has always been an important part of the teaching and learning environment. It is an essential part of the teaching profession through which they can use it to facilitate learners' learning process in and out of the class. Meanwhile, students can easily get information and knowledge through the technology itself. Nowadays, one of the technologies that show great potential in education is augmented reality. While a lot of studies have been conducted in education, including Medicine, Chemistry, Mathematics, Physics, Geography, Biology, Astronomy, Engineering, History, etc.

Azuma et al (2008) said that augmented reality is the process of using technology to superimpose images, texts, or sounds that people can already see through a device such as a smartphone camera. It means augmented reality is a technology that combines real-world images or videos on a screen or other display and also Martin et al (2011) and Arifin et al., (2022) state that augmented reality is a new technology that is likely to have an impact on education.

The review of the results in research shows that, overall, augmented reality technologies have positive advantages that can be adapted in education and it could be addressed in future research. By applying this media, the researcher expected it might enhance the students' understanding of vocabulary mastery. Based on the background above, the researcher conducted research entitled, "The Used of Augmented Reality (AR) Media to Enhance Students' Vocabulary Mastery at Seventh Grade Students of SMP Negeri 7 Tarakan"

METHOD

In this research, the researcher used Quantitative research as the research design. According to Gay (2012: 7), quantitative research is the collection and analysis of numerical data to describe, explain, predict or control phenomena of interest. Creswell, (2006, p. 201) stated that quantitative research is divided into three designs: experimental, correlation, and survey. In this research, the researcher used an experimental design. Experimental research is the type of research that directly attempts to influence a particular variable, and when properly

applied, it is the best type for testing hypotheses about cause-and-effect relationships. In this research, the researcher used a pre-experimental design with one group pre-test – post-test design. According to Gay, et al. (2012, p. 265- 266) explained that the one-group pre-test – post-test design involves a single group that is present (O1), exposed to a treatment (X), and then tested again (O2). The success of the treatment is determined by comparing pre-test and post-test scores. The pre-experimental design was formulated as follows:

One Group Pre-test and Post-test Design

O1 _____ X _____ O2

O1 : pre-test (before treatment) X : Treatment

O2 : post-test (after treatment)

FINDINGS

Analysis Results of Research Online

1. The Students' Scores in Pre-test and Post-test

Participant	Students' Score	
	Pretest	Posttest
Student 1	52	60
Student 2	25	65
Student 3	70	86
Student 4	65	75
Student 5	66	84
Student 6	26	70
Student 7	35	65
Student 8	40	80
Student 9	45	65
Student 10	72	75
Student 11	70	76
Student 12	66	80
Student 13	68	84
Student 14	22	60
Student 15	80	95
Student 16	83	70
Student 17	60	70
Student 18	38	68
Student 19	25	62
Student 20	20	55
Student 21	44	55

Student 22	48	66
Student 23	55	76
Student 24	78	83
Student 25	76	82
Student 26	52	86

2. Descriptive Statistics

	N	Mini mum	Maxi mum	Mean	Std. Deviati on
Pretest	26	20	83	53,12	10,522
Posttest	26	55	95	72,81	19,717
Valid N (listwise)	26				

The two table above presented the mean pre-test was 53.12, the lowest score was 20 it was obtained by one student, the highest students' 83 it was obtained by one student and the most score obtained by students was 52, 25, 70. The mean post-test was 72.81, the lowest score was 55 it was obtained by two students, the highest score was 95 it was obtained by one student and the most score obtained by students was 70.

3. N-Gain Score Improvement

$$N\ Gain = \frac{72.81 - 53.12}{100 - 53.12} = \frac{19.69}{46.88} = 0.42$$

Based on the N Gain Score Improvement, the level of enhancement in both pre-test and post-test was Normal 0.42 since it was less than 0.70 and higher than 0.31.

4. The Students' Score of Pretest and Posttest

In this research, the researcher described the results of pretest and posttest as below:

a. Pretest

Based on the result of the student's pre-test on the scoring of vocabulary before giving a treatment through augmented reality (AR) media which were analyzed and resulted in the table below:

The Students' Score in Pre-test

Category	Range	Frequency	Percentage
Excellent	90-100	0	0%
Very Good	80-89	2	8%
Good	70-79	5	19%
Fair	<69	19	73%
	Total	26	100%

(Source: SMPN 7 Tarakan's Standard Score)

The table above showed the four classifications of student pre-test scores. The classifications are excellent grades, very good, good, and fair. From the table, it can be seen that there were no students who got excellent grades, only 2 students (8%) who got very good scores, 5 students (19%) who got good grades, and 19 students (73%) who got fair grades.

b. Posttest

Based on the result of the student's post-test on the scoring of vocabulary after giving a treatment through augmented reality (AR) media which were analyzed and resulted in the table below:

The Students' Score in Post-test

Category	Range	Frequency	Percentage
Excellent	90-100	1	4%
Very Good	80-89	8	31%
Good	70-79	7	27%
Fair	<70	10	39%
	Total	26	100%

The table above showed the four classifications of students' post-test scores. The classifications are excellent, very good, good, and fair. From the table, it can be seen that there was 1 student (4%) who got excellent, 8 students (31%) who got very good, 7 students (27%) who got good grades and 10 students (39%) who got fair scores.

DISCUSSION

Pre-requisite Testing

1. Normality of Data

The Result of Normality Test Variance

Kolmogorov- Smirnov				Shapiro-Wilk		
Statistic		Df	Sig.	Statistic	df	Sig.
Pre test	,150	26	,138	,939	26	,125
Post test	,105	26	,200 *	,970	26	,612

Based on the table above, showing the result of test distribution. The value of Sig. in pre-test (0,125) and post-test (0,612) was higher than 0,05. The result showed that the data from both pre-test and post-test were distributed normally. After ensuring the normality of the data, the researcher has to calculate the homogeneity test of the data.

2. Homogeneity of Data

The Result of Homogeneity Test Variance

Levene Statistic	df1	df2	Sig.
1,940	8	11	,153

The table above described that the value of significance was 0,153. The result was higher than 0,05. It means that the data from the pre-test and post-test were homogeneity.

Hypothesis Testing

Test of Difference Paired Sample Test

		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre Test - Post test	- 19,692	14,324	2,809	- 25,478	- 13,907	-7,010	25	,000

Based on the table above, shows described the result of the pre-test and post-test which was analyzed by using paired sample t-test. There were two ways to answer the hypothesis of this

research. The first way was comparing the result of the t-test with the t-table. In this case, the df was 25 and the t- test was -7,010. The standard for making a decision is if the t-table is higher than the t-test the significance of the value H_a was accepted. From the table above - t-test = -7,010 < - t-table = -2,056 (2-tailed /2). It means that there was a significant improvement in pre-test and post-test. The second way was to compare the probability of value if Sig. < 0,05/2 = 0,025, then H_0 was rejected. From the table, it can be seen that the Sig. was 0,000 < 0,025, and the result showed that augmented reality (AR) is effective in enhancing students' vocabulary. It can be said that augmented reality has successfully given experience in learning vocabulary.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PreTest	53,12	26	10,522	2,064
	Posttest	72,81	26	19,717	3,867

Based on the table above, the output shows the results of descriptive statistics from the two samples studied, namely the pretest and posttest. The result shows that there was an improvement of the mean from 53,12 to 72,81. The population (N) in this research was 26 students. For std value. deviation in the pretest is 10,522 and the posttest is 19,717. In measuring the appropriate mean score before and after the treatment can be seen in standard error, from the table above the result of Std Error Mean were 2,064 and 3,867. It can be concluded that the post-test on the data above was higher than the pre-test.

CONCLUSION

Based on the descriptive and inferential analysis, it can be concluded that augmented reality (AR) media gives a significant enhancement to students' vocabulary mastery. The results were proven by the calculation of the mean score and paired sample t- test of students' tests in post-test was higher than the pre-test, which means that the student's vocabulary mastery has improved after giving the treatment.

That statement above is proved by the data of the N Gain score of both pre-test and post-test. The N Gain score was 0.42 which is classified as Normal improvement.

Besides, the researcher found that the mean score of the students' achievement in vocabulary mastery test between pre-test and post-test was improving. Before giving the treatment, the researcher found that the mean score of pre-test was 53,12, after giving the treatment, the mean score of post-test was 72,81.

The improvement of the mean score of pre-test to post- test was 19,69. The result of the computation of the t-table was -2,060 and the t-test was -7,010. It indicated that the t-table was higher than the t- test where the degree of freedom (df) was 25 and the level of significant 5% $p = 95\%$. (t-test = -7,010 < t-table - 2.060). It means that media augmented reality (AR) was effective in enhancing students' vocabulary mastery in seventh-grade students of SMP Negeri

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