

The Effectiveness of Interactive Multimedia-Based Learning Using Powtoon and Renderforest in Teaching Writing to Students with Different Learning Styles

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ABSTRACT

This study aimed to assess the effectiveness of Powtoon in teaching writing to visual students; to assess the effectiveness of Powtoon in teaching writing to auditory students; to assess the effectiveness of Renderforest in teaching writing to visual students; to assess the effectiveness of Renderforest in teaching writing to auditory students; to show the difference between the effectiveness of Powtoon and Renderforest in teaching writing to visual students; to show the difference between the effectiveness of Powtoon and Renderforest in teaching writing to auditory students; and to explain the relationship between interactive multimedia-based learning and students' learning styles in teaching writing. This study used experimental research with 2x2 factorial designs. The population were the tenth-grade students at MAN 2 Model Medan with the samples were 74 students of experimental I and II that categorized into visual and auditory learning styles. The result indicated that (1) Powtoon was effective in teaching writing to visual students; (2) Powtoon was effective in teaching writing to auditory students; (3) Renderforest was effective in teaching writing to visual students; (4) Renderforest was effective in teaching writing to auditory students; (5) Powtoon and Renderforest were equally effective in teaching writing to visual students; (6) Powtoon and Renderforest were equally effective in teaching writing to auditory students; and (7) Interactive multimedia were

effective in teaching writing to visual and auditory students.

Keywords: Powtoon, Renderforest, Teaching Writing, Learning Styles

INTRODUCTION

In Indonesia, English has been studied as a foreign language and the context required students to communicate orally and in writing. This ability encompassed all of language skills, such as listening, speaking, reading, and writing. Based on English competency standards, the ability in communicating English for students can be realized by following each of the language skills: listening to the interactional text, trying to speak up, reading the meaning of the text, and finally expressing what they have understood in the written form. Hereby, writing was complicated in conveying their mind's assumptions into written form in accordance with the writing procedure itself. Linse and Nunan (2005, p.98) emphasized writing combined process and product. Process referred as a strategy of thinking for generating ideas, deciding how to express thoughts effectively, and simply structuring those ideas into statements and paragraphs. Then, the product referred as the written product, formed from many steps as part of the writing process.

Based on the representation, writing was a complex process due to the fact that it required a variety of cognitive and metacognitive things, i.e., brainstorming, making plan, outline, organize the sentences, arrange the draft, and revise the writing error (Hadley, 2003, p.290). Ismayanti and Kholiq (2020, p.11) demonstrated that students believed writing was difficult because some critical components, such as vocabulary, spelling, punctuation, and grammar, must be equipped. Additionally, Budjalemba and Listyani (2020, p.143) mentioned that the fear of developing a topic, lack of ideas, and difficulties finding the proper conjunctions created nervousness and doubt.

Similarly, the difficulties of writing skills also deal with students at MAN 2 Model Medan., when they have to construct their ideas, the lack of vocabulary, and making mistakes with basic sentence structure in writing, tend to spell the wrong pronunciation, and they were not exposed reading material when learning to write. Otherwise, the teachers faced the challenge of teaching writing by having different students' learning styles in the classroom, like how the way students were learned in the same classroom lead to difficulties in determining learning approach, such as media in teaching writing that simultaneously fulfil all of their styles. Consequently, the teachers find it hard to design their lessons and create the appropriate activities for their students.

However, teacher must create a comfortable learning environment, by using appropriate teaching media. In this case, teachers are required to create learning platform in enhancing student writing achievement. Media presence during teaching learning activity in the classroom was beneficial for students to comprehend learning materials (Miftah, 2013, p.96). The selection and utilization of media in English teaching should be considered. Thus, learning objectives can be adequately achieved. In the end, using media can support the effectiveness, efficiency, and attractiveness

of learning and produce good learning outcomes for students.

Interactive multimedia-based learning can be interpreted more broadly instead of as the part of the use of technology, whereby it has a great potential to students (Ampa, 2015, p.57). Interactive multimedia-based learning includes objective, content, navigation, hyperlinks, user-friendly, and interface learning (Merrill et al., cited in Ampa, 2015, p.57). Thus, interactive multimedia-based learning was a good way to apply in the classroom because it provided new potential in the learning process and assist students gain knowledge to be deeper by aiding with the conceptualization and contextualization of newly provided material, which then encourages all of students can participate in the classroom actively.

Therefore, this research used two kinds of multimedia i.e. Powtoon and Renderforest, which is Powtoon and Renderforest are website for making presentations and interactive animated videos. They have many features and templates that can help teachers created teaching media by adding characters, text effects, animation, links, backgrounds, etc. In other words, the teacher could move symbols and text as needed by simply selecting the available effects and poses. Hereby, English teachers could use Powtoon and Renderforest as teaching media, such as presentations, animated videos, moving infographics, etc. According to considerations above, the researcher investigated the effectiveness of interactive multimedia-based learning using Powtoon and Renderforest in teaching writing to students with different learning styles to find out which one is more effective between Powtoon and Renderforest in teaching writing.

MATERIALS & METHODS

Research Design

The researcher used experimental research with the type of 2x2 factorial designs. Through this factorial design, the researcher assessed the effectiveness of interactive multimedia-based learning using Powtoon

and Renderforest in teaching writing to students with different learning styles, then compare these multimedia. In contrast, Powtoon is used in experimental I, Renderforest is used in experimental II, and find out the relationship between interactive multimedia-based learning and students' learning styles in teaching writing. The

researcher used a pre- and post-tests with the moderating variable visual students (Y_1) and auditory students (Y_2), and the intervention was applied to visual and auditory students of experimental I and II who did the pre-test. For more detailed, the table below presented the design of this study:

Table 1 Factorial Design

Interactive Multimedia	Powtoon (x_1)	Renderforest (x_2)	The Differences between Powtoon and Renderforest
Learning Styles			
Visual Learning Style (y_1)	$x_1 - y_1$	$x_2 - y_1$	$x_1 - x_2 - y_1$
Auditory Learning Style (y_2)	$x_1 - y_2$	$x_2 - y_2$	$x_1 - x_2 - y_2$
The Relationship between Interactive Multimedia and Learning Styles	$x_1 - x_2 - y_1 - y_2$		

According to the table above, this study found the effect of Powtoon on visual students (x_1-y_1), the effect of Powtoon on auditory students (x_1-y_2), the effect of Renderforest on visual students (x_2-y_1), the effect of Renderforest on auditory students (x_2-y_2), the differences between Powtoon and Renderforest in teaching writing to visual learning styles' students ($x_1-x_2-y_1$), the differences between Powtoon and Renderforest in teaching writing to auditory learning styles' students ($x_1-x_2-y_2$), and the relation between interactive multimedia-based learning (Powtoon and Renderforest) and students' learning style (visual and auditory) in teaching writing ($x_1-x_2-y_1-y_2$).

Participants

The study's population consist of tenth-grade students at MAN 2 Model Medan. The population consisted of 624 students divided into 16 classes. According to the population, the sample in this study calculated used a probability sampling technique utilizing simple random sampling. In this case, the researcher chose three classes, X-E as the try-out class, X-M as experimental I, taught by using Powtoon, and X-K as experimental II, taught by using Renderforest. Each of visual and auditory learning styles' students will be placed into two groups in those classes, with the same material according to the syllabus and 2013 curriculum.

Instruments

The researcher used three instruments to collect the data. A questionnaire sheet may be utilized to get information from the students related to students' learning style in which they were categorized into visual or auditory learning styles. Furthermore, essay writing test with a predetermined theme to know the students' improvement. And the last, the researcher used structured observation to check off each item if the practical aspects were carried out well from the beginning to the end of the class.

Data Analysis Techniques

The data from the test and questionnaire were evaluated quantitatively. The researcher analysed pre- and post-tests used parametric inferential statistical analysis. In the beginning, normality and homogeneity tests using Shapiro-Wilk, Kolmogorov-Smirnov and Lavene Statistic were conducted to ensure that students' scores were normally distributed and homogenous. In this case, if the significance value was more than 0,05 (sig. > 0,05), it indicated that the data was normally distributed and homogenous. Furthermore, hypothesis test was carried out using Paired Sample T-test, Independent Sample T-test, and Two-way ANOVA. The result can be interpreted if the significance value was less than 0,05 (sig. < 0,05), there is significant difference between pre- and post-tests score in experimental I and II to students with different learning styles.

RESULT

The Result of Students' Learning Styles Questionnaire

In this study, the researcher employed VARK learning style models that consisted of 20 lists of items containing ten indicators related to students' learning styles, whereas

they were categorized into visual or auditory learning styles. In this case, the questionnaire was distributed to experimental I and II. The result of students' learning styles has been presented in the table below:

Table 2 the Result of VARK Learning Style Questionnaire

Students' Learning Styles	Classes	
	Experimental I (X-M)	Experimental II (X-K)
Visual Learning Styles	12	17
Auditory Learning Styles	24	21
Total	36	38

Table 2 represented that in experimental I, there were 36 students that consisted of 12 visual students and 24 auditory students. Meanwhile, in experimental II, there were 38 students that consisted of 17 visual students and 21 auditory students. Therefore, table 2 indicated that both classes have a greater number of auditory students than visual students.

The Result of Pre- and Post-Tests in experimental I and Experimental II

In this study, pre- and post-tests were distributed in collecting the data about

students' writing achievement. Pre- and post-tests were carried out in both of experimental I and II, whereby pre-test was carried out to measure students' writing achievement before students got the treatment, then post-test was carried out to measure students' writing achievement after students got the treatment. Afterwards, the researcher compared pre- and post-tests result to see how visual and auditory students enhanced their writing skills. The descriptive statistics of students pre- and post-tests from experimental I and II were presented as follows:

Table 3 Students' Pre-Test Score in Class of Experimental I

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Pre-Test Experimental 1 Visual (Powtoon)	12	60	78	66,83	6,103
Pre-Test Experimental 1 Auditory (Powtoon)	24	59	85	68,33	7,772
Pre-Test Experimental 2 Visual (Renderforest)	17	53	79	66,82	8,301
Pre-Test Experimental 2 Auditory (Renderforest)	21	58	70	63,43	3,970
Valid N (listwise)	12				

Table 4 Students' Pre-Test Score in Class of Experimental II

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Post-Test Experimental 1 Visual (Powtoon)	12	75	90	82,42	4,719
Post-Test Experimental 1 Auditory (Powtoon)	24	74	96	83,54	6,143
Post-Test Experimental 2 Visual (Renderforest)	17	75	91	83,29	5,253
Post-Test Experimental 2 Auditory (Renderforest)	21	73	90	80,33	5,416
Valid N (listwise)	12				

Table 3 represented students' pre-tests mean score, whereby the mean score of visual students were 66,83 and auditory students were 68,33 in experimental I. Meanwhile, pre-tests mean score of visual students were 66,82 and auditory students were 63,43 in experimental II. According to students' pre-test result, it asserted the pre-test mean score

of visual students in experimental I was higher than pre-test mean score of visual students in experimental II. Similarly, to the pre-test mean score of visual students, the pre-test mean score of auditory students in experimental I was higher than the pre-test mean score of auditory students in experimental II.

Furthermore, table 4 also represented students' post-tests mean score, whereby in experimental I, the mean score of visual students were 82,42 and auditory students were 83,54. Meanwhile, in experimental II, the mean score of visual students were 83,29 and auditory students were 80,33. According to students' post-test mean score, it claimed the post-test mean score of visual students in experimental II was higher than the post-test mean score of visual students in experimental I. Otherwise, the post-test mean score of auditory students in experimental I was higher than the post-test

mean score of auditory students in experimental II.

Normality Test

The researcher used SPSS V.20 using Kalmogrov-Smirnov and Saphiro-Wilk statistical analysis with the significance value 0,05. In this study, normality test was carried out by calculating students score from pre- and post-tests in experimental I and II. For more detailed, the following table showed the result of normality test from students' pre-tests:

Table 5 Normality Test of Students' Pre-Tests

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Pre-Test Experimental 1 Visual (Powtoon)	,195	12	,200*	,874	12	,074
Pre-Test Experimental 1 Auditory (Powtoon)	,193	12	,200*	,906	12	,191
Pre-Test Experimental 2 Visual (Renderforest)	,219	12	,115	,886	12	,104
Pre-Test Experimental 2 Auditory (Renderforest)	,195	12	,200*	,876	12	,078
*. This is a lower bound of the true significance.						
a. Lilliefors Significance Correction						

Table 5 represented the significance value of pre-test in experimental I and II for visual and auditory students were higher than 0,05. In experimental I, the significance value of visual students was 0,074 and the significance value of auditory students was 0,191. Meanwhile, in experimental II, the significance value of visual students was

0,104 and the significance value of auditory students was 0,078. Based on the interpretation of the table above, it indicated all pre-test scores in experimental I and II were normally distributed. Furthermore, the results of normality test from students' post-test in experimental I and II can be seen in the following table:

Table 6 Normality Test of Students' Post-Tests

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Post-Test Experimental 1 Visual (Powtoon)	,196	12	,200*	,946	12	,581
Post-Test Experimental 1 Auditory (Powtoon)	,216	12	,128	,888	12	,112
Post-Test Experimental 2 Visual (Renderforest)	,232	12	,074	,889	12	,115
Post-Test Experimental 2 Auditory (Renderforest)	,206	12	,169	,943	12	,535
*. This is a lower bound of the true significance.						
a. Lilliefors Significance Correction						

Table 6 showed that the significance value of post-test in experimental I and II for visual and auditory students were higher than 0,05. In experimental I, the significance value of visual students was 0,581 and the significance value of auditory students was 0,112. Meanwhile, in experimental II, the significance value of visual students was 0,115 and the

significance value of auditory students was 0,535. Based on the interpretation of the table above, it suggested all the post-test scores in the classes of experimental I and II were normally distributed.

Homogeneity Test

The researcher used SPSS V.20 using Lavene Statistic Test with the significance

value 0,05. In this study, homogeneity test was conducted by calculating the students' pre- and post-tests in experimental I and II.

For more detail, the following table showed the result of homogeneity test from students' pre-test in experimental I and II:

Table 7 Homogeneity Test of Students' Pre-Test

Test of Homogeneity of Variances			
Students' Learning Achievement			
Levene Statistic	df1	df2	Sig.
1,080	1	72	,302

Table 7 denoted that the significance value of pre-test was higher than 0,05. It can be seen that the test of homogeneity's significant value from students' pre-tests were 0,302. It indicated that the data was homogenous. Furthermore, the results of homogeneity test from students' post-tests in experimental I and II can be seen in the following table:

Table 8 Homogeneity Test of Students' Post-Test

Test of Homogeneity of Variances			
Students' Learning Achievement			
Levene Statistic	df1	df2	Sig.
,374	1	72	,543

Moreover, according to the table 8, it denoted that the significance value of post-test was higher than 0,05. It can be seen that the test of homogeneity's significant value from students' post-test were 0,543. It indicated that the data was homogenous.

The Effectiveness of Powtoon-Based Multimedia in Teaching Writing to Visual Students

In this study, the data was calculated using Paired Sample Statistics, Paired-Samples Correlations, and Paired sample T-Test. The table below represented the result of Paired Sample Statistics, Paired-Samples Correlations, and Paired sample T-Test:

Table 9 Paired Sample Statistics of Powtoon to the Visual Students

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-Test Experimental 1 Visual (Powtoon)	66,83	12	6,103	1,762
	Post-Test Experimental 1 Visual (Powtoon)	82,42	12	4,719	1,362

The table showed students' pre-test mean score were 66,83 with the standard deviation were 6,103. Meanwhile, students' post-test mean score were 82,42 with the standard deviation were 4,719. Based on this interpretation, it indicated that students' post-test mean score were higher than students' pre-test mean score which means

that visual students had a great improvement in their writing achievement after they got the treatment using Powtoon for teaching writing. Furthermore, the following table explained the result of Paired Sample T-test of Students' pre- and post-tests to answer the significant effect of Powtoon to visual students in teaching writing:

Table10 Paired Sample T-test of Powtoon Visual Students

Paired Samples 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 Experimental 1 Visual (Powtoon) - Post-Test Experimental 1 Visual (Powtoon)	-15,583	5,823	1,681	-19,283	-11,884	-9,271	11	,000

According to the table 10 above, it claimed that the significance value of Paired Sample T-test was 0,000. It indicated that 0,000 was lower than 0,05 ($0,000 < 0,05$) which means

that H_0 was rejected and H_a was accepted. Therefore, it deduced that there was a significant effect of Powtoon-based

multimedia in teaching writing to visual students.

The Effectiveness of Powtoon-Based Multimedia in Teaching Writing to Auditory Students

Table 11 Paired Sample Statistics of Powtoon to Auditory Students

Paired Samples Statistics		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-Test Experimental 1 Auditory (Powtoon)	68,33	24	7,772	1,586
	Post-Test Experimental 1 Auditory (Powtoon)	83,54	24	6,143	1,254

The table showed students' pre-test mean score were 68,33 with the standard deviation were 7,772. Meanwhile, students' post-test mean score were 83,54 with the standard deviation were 6,143. Based on this interpretation, it indicated that students' post-test mean score were higher than students' pre-test mean score which means that auditory students had a great

improvement in their writing achievement after they got the treatment using Powtoon for teaching writing. Furthermore, the following table explained the result of Paired Sample T-test of Students' pre- and post-tests to answer the significant effect of Powtoon to auditory students in teaching writing:

Table 12 Paired Sample T-Test of Powtoon to Auditory Learning Styles' Students

		Paired Samples Test					T	Df	Sig. (2-tailed)
		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
Pair 1	Pre-Test Experimental 1 Auditory (Powtoon) - Post-Test Experimental 1 Auditory (Powtoon)	-15,208	5,022	1,025	Lower	Upper	-14,837	23	,000
					-17,329	-13,088			

According to the table 12 above, it claimed that the significance value of Paired Sample T-test was 0,000. It indicated that 0,000 was lower than 0,05 ($0,000 < 0,05$) which means that H_0 was rejected and H_a was accepted. Therefore, it deduced that there was a significant effect of Powtoon-based

multimedia in teaching writing to auditory students.

The Effectiveness of Renderforest-Based Multimedia in Teaching Writing to Visual Students

Table 13 Paired Sample Statistics of Renderforest to Visual Students

Paired Samples Statistics		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-Test Experimental 2 Visual (Renderforest)	66,82	17	8,301	2,013
	Post-Test Experimental 2 Visual (Renderforest)	83,29	17	5,253	1,274

The table showed students' pre-test mean score were 66,82 with the standard deviation were 8,301. Meanwhile, students' post-test mean score were 83,29 with the standard deviation were 5,253. Based on this interpretation, it indicated that students' post-test mean score were higher than students' pre-test mean score which means

that visual students had a great improvement in their writing achievement after they got the treatment using Renderforest for teaching writing. Furthermore, the following table explained the result of Paired Sample T-test of Students' pre- and post-tests to answer the significant effect of Renderforest to visual students in teaching writing:

Table 14 Paired Sample T-Tests of Renderforest Visual Students

Paired Samples 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 Experimental 2 Visual (Renderforest) - Post-Test Experimental 2 Visual (Renderforest)	-16,471	5,352	1,298	-19,222	-13,719	-12,690	16	,000	

According to the table 14 above, it claimed that the significant value of Paired Sample T-test was 0,000. It indicated that 0,000 was lower than 0,05 ($0,000 < 0,05$) which means that H_0 was rejected and H_a was accepted. Therefore, it deduced that there was a significant effect of Renderforest-based

multimedia in teaching writing to visual students.

The Effectiveness of Renderforest-Based Multimedia in Teaching Writing to Auditory Students

Table 15 Paired Sample Statistics of Renderforest to Auditory Students

Paired Samples Statistics					
Pair 1		Mean	N	Std. Deviation	Std. Error Mean
	Pre-Test Experimental 2 Auditory (Renderforest)	63,43	21	3,970	,866
	Post-Test Experimental 2 Auditory (Renderforest)	80,33	21	5,416	1,182

The table showed students' pre-test mean score were 63,43 with the standard deviation were 3,970. Meanwhile, students' post-test mean score were 80,33 with the standard deviation were 5,416. Based on this interpretation, it indicated that students' post-test mean score were higher than students' pre-test mean score which means that auditory students had a great

improvement in their writing achievement after they got the treatment using Renderforest for teaching writing. Furthermore, the following table explained the result of Paired Sample T-test of Students' pre- and post-tests to answer the significant effect of Renderforest to auditory students in teaching writing:

Table 16 Paired Sample T-Test of Renderforest to Auditory Students

Paired Samples 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 Experimental 2 Auditory (Renderforest) - Post-Test Experimental 2 Auditory (Renderforest)	-16,905	4,969	1,084	-19,167	-14,643	-15,590	20	,000	

According to the table 16 above, it showed that the significance value of Paired Sample T-test was 0,000. It indicated that 0,000 was lower than 0,05 ($0,000 < 0,05$) which means that H_0 was rejected and H_a was accepted. Therefore, it deduced that there was a significant effect of Renderforest-based multimedia in teaching writing to auditory students.

The Differences between the Effectiveness of Powtoon-Based Multimedia and Renderforest-Based Multimedia in Teaching Writing to Visual Students

The researcher measured the differences of students' learning achievement in writing skills from the students' post-test in experimental I that were taught by using Powtoon and experimental II that were taught by using Renderforest to visual students. The data was calculated using

Independent Sample T-test. The table below and Independent Sample T-test: represented the result of Group Statistics

Table 17 Group Statistics of Powtoon and Renderforest to Visual Students

Group Statistics						
		Class	N	Mean	Std. Deviation	Std. Error Mean
Students' Learning Achievement		Post-Test Experimental 1 Visual (Powtoon)	12	82,42	4,719	1,362
		Post-Test Experimental 2 Visual (Renderforest)	17	83,29	5,253	1,274

The table above represented the result of students' post-test mean score in experimental I was 82,42 with the standard deviation were 4,719. Meanwhile, students' post-test mean score in experimental II were 83,29 with the standard deviation were

5,253. Based on this interpretation, it indicated that students' post-test mean score in experimental II that were taught by using Renderforest was higher that students' post-test in experimental I that were taught by using Powtoon.

Table 18 Independent Sample T-test of Powtoon and Renderforest to Visual Students

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Students' Learning Achievement	Equal variances assumed	,515	,479	-,462	27	,648	-,877	1,901	-4,778	3,023
	Equal variances not assumed			-,470	25,335	,642	-,877	1,865	-4,716	2,961

According to the table 18 above, it showed the significance value of Lavene's Test Equality of Variances was 0,479, which means the significance value was higher than 0,05 ($0,479 > 0,05$). It indicated H_0 was accepted and H_a was rejected. It claimed that visual students in experimental I and II had the same variants. Moreover, the significance value of T-test for Equality of Means was 0,648, which means the significance value was higher than 0,05 ($0,648 > 0,05$). It indicated H_0 was accepted and H_a was rejected. It deduced that there was no significant difference between the effectiveness of Powtoon-based multimedia and Renderforest-based multimedia in teaching writing to visual students.

The Differences between the Effectiveness of Powtoon-Based Multimedia and Renderforest-Based Multimedia in Teaching Writing to Auditory Students

The researcher measured the differences of students' learning achievement in writing skills from the students' post-test in experimental I that were taught by using Powtoon and experimental II that were taught by using Renderforest to auditory students. The data was calculated using Independent Sample T-Test. The table below represented the result of Group Statistics and Independent Sample T-Test:

Table 19 Group Statistics of Powtoon and Renderforest to Auditory Students

Group Statistics						
		Class	N	Mean	Std. Deviation	Std. Error Mean
Students' Learning Achievement		Post-Test Experimental 1 Auditory (Powtoon)	24	83,54	6,143	1,254
		Post-Test Experimental 2 Auditory (Renderforest)	21	80,33	5,416	1,182

The table above represented the result of students' post-test mean score in

experimental I was 83,54 with the standard deviation were 6,143. Meanwhile, students'

post-test mean score in experimental II were 80,33 with the standard deviation were 5,416. Based on this interpretation, it indicated that students' post-test mean score

in experimental I that were taught by using Powtoon was higher than students' post-test in experimental II that were taught by using Renderforest.

Table 20 Independent Sample T-Test of Powtoon and Renderforest to Auditory Students

Independent Samples Test		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper	
Students' Learning Achievement	Equal variances assumed	,070	,793	1,846	43	,072	3,208	1,738	-,297	6,713
	Equal variances not assumed			1,862	42,995	,069	3,208	1,723	-,267	6,683

According to the table 20 above, it showed that the significance value of Lavene's Test Equality of Variances was 0,793, which means the significance value was higher than 0,05 ($0,793 > 0,05$). It indicated H_0 was accepted and H_a was rejected. It claimed that auditory students in experimental I and II had the same variants. Moreover, the significance value of T-test for Equality of Means was 0,072, which means the significance value was higher than 0,05 ($0,072 > 0,05$). It indicated H_0 was accepted and H_a was rejected. It deduced that there was no significant difference between the effectiveness of Powtoon and Renderforest in teaching writing to auditory students.

The Relation Between Interactive Multimedia-Based Learning Using Powtoon and Renderforest and Students' Learning Styles in Teaching Writing

The researcher measured the relation among interactive multimedia-based learning, students' learning styles, and students' learning achievement in writing skills. Here, the researcher calculated the data using Two-Way ANOVA. The following table elaborates the result of Between-Subjects Factors, Descriptive Statistics, Lavene's Test, and Test of Between-Subjects Effects to answer the seventh hypothesis:

Table 21 Between-Subjects Factors

Between-Subjects Factors			
		Value Label	N
Interactive Multimedia-Based Learning	1	Powtoon	36
	2	Renderforest	38
Students' Learning Styles	1	Visual Learning Style	29
	2	Auditory Learning Style	45

There were 36 students from experimental I that were taught by using Powtoon and 38 students from experimental II that were taught by using Renderforest. If the total of students divided into two learning styles, there were 29 visual students and 45 auditory students from both classes. Based on this interpretation, those classes did not have significantly different in total of students, but had a dominant in the total of

auditory students. It can be proved that more than half students from the classes of experimental I and II had auditory learning styles.

Furthermore, after knowing the number of students from each of classes, the following table will elaborate the descriptive statistics of interactive multimedia-based learning and students' learning styles:

Table 22 Descriptive Statistics

Descriptive Statistics				
Dependent Variable: Students' Learning Achievement				
Interactive Multimedia-Based Learning	Students' Learning Styles	Mean	Std. Deviation	N
Powtoon	Visual Learning Style	82,42	4,719	12
	Auditory Learning Style	83,54	6,143	24
	Total	83,17	5,664	36
Renderforest	Visual Learning Style	83,29	5,253	17
	Auditory Learning Style	80,33	5,416	21
	Total	81,66	5,479	38
Total	Visual Learning Style	82,93	4,971	29
	Auditory Learning Style	82,04	5,973	45
	Total	82,39	5,583	74

The table above interpreted that students mean score taught using Powtoon were 83,17, meanwhile students mean score taught using Renderforest were 81,66. According to the classes, it proved students were taught using Powtoon had a higher mean score rather than students were taught using Renderforest, which means that if that multimedia were compared, Powtoon was more effective to improve students' learning achievement in writing skills to visual and auditory students. Moreover, according to students' learning style, visual students had higher mean score rather than auditory

students, whereby visual students mean score were 82,93, meanwhile auditory students mean score were 82,04. It means visual students had a great improvement in their writing skills when they were taught by using Powtoon and Renderforest in the classroom. Furthermore, the relation among Powtoon, Renderforest, and students' learning styles in teaching writing can be calculated using Test Between-Subject Effects. The following table elaborated the result of Test Between-Subject Effects of the data:

Table 23 Test Between-Subject Effects

Tests of Between-Subjects Effects					
Dependent Variable: Students' Learning Achievement					
Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	134,564 ^a	3	44,855	1,466	,231
Intercept	469346,611	1	469346,611	15344,779	,000
Media	23,475	1	23,475	,767	,384
Styles	14,561	1	14,561	,476	,492
Media * Styles	72,129	1	72,129	2,358	,129
Error	2141,071	70	30,587		
Total	504619,000	74			
Corrected Total	2275,635	73			

a. R Squared = ,059 (Adjusted R Squared = ,019)

Based on the interpretation of the relation in each interactive multimedia-based learning and each student's learning styles, the result of the relation between interactive-multimedia based learning and students' learning styles showed the same as well. The significance value of media*styles was 0,129, which means that the significance value were bigger than 0,05. It indicated that there was no relation between interactive multimedia and students' learning styles in teaching writing, whereby based on the hypothesis H₀ was accepted and H_a was rejected. There was no relation between interactive multimedia-based

learning and students' learning styles due to both of Powtoon and Renderforest could improve students' learning achievement in writing skills to the visual and auditory students.

DISCUSSION

This section elaborated the discussion of the effectiveness of interactive-multimedia based learning using Powtoon and Renderforest in teaching writing to students with different learning styles and linkages with the related previous studies and the theoretical studies.

The Effectiveness of Powtoon-Based Multimedia in Teaching Writing to Visual Learning Styles' Students

The result represented students' post-test had a higher mean score rather than their pre-test, whereby the mean score of students' post-test were 82,42 meanwhile the pre-test were 66,83. Additionally, paired sample t-test result also represented the significance value were $0,00 < 0,05$. This result proved Powtoon-based multimedia was effective for teaching writing to visual students. It indicated that visual students had a great improvement in their writing achievement after they got the treatment using Powtoon for teaching writing in the classroom.

Regarding to the findings, it was related to the studies from Suprianti, Mahayanti, & Suarjaya (2020); Suprianti (2020); Megawati & Utami (2020). They mentioned that teaching video using Powtoon is equipped with animation and illustrations can decrease the verbalization of understanding the learning material. In this case, this media can solve the limitations of time, place, and facilities experienced by students. Therefore, the findings in this study which proved Powtoon as an effective media due to the display of Powtoon was interesting and it provided a complex explanation of the material supported by images, videos, and text in the video that make visual students can focus and enjoy the learning activity then produce a great improvement in their achievement in writing skills.

The Effectiveness of Powtoon-Based Multimedia in Teaching Writing to Auditory Learning Styles' Students

The result represented students' post-test had a higher mean score rather than their pre-test, whereby the students' post-test mean score were 83,54 meanwhile the pre-test were 68,33. Additionally, paired sample t-test result also represented the significance value were $0,00 < 0,05$. This result proved Powtoon-based multimedia was effective for teaching writing to visual learning

styles' students. It indicated that auditory students had a great improvement in their writing achievement after they got the treatment using Powtoon for teaching writing in the classroom.

Regarding to findings of this study, it was related to the studies from Rioseco, Nogués, & Muñoz (2017); Hakim & Yulia (2021) also revealed that the program was suitable for the learning of contents and skill development due to Powtoon offers to express or transmit information through audio-visual creation. In this case, students have a positive opinion about using Powtoon during learning activities development. It means Powtoon showed an improvement of students' writing achievement for auditory students because Powtoon provided illustrations and equipped with background music and voice recording to support currently displayed animation and illustration video in front of the class that make them feel easy to understand the learning material.

The Effectiveness of Renderforest-Based Multimedia in Teaching Writing to Visual Learning Styles' Students

The result represented students' post-test had a higher mean score rather than their pre-test, whereby the students' post-test mean score were 83,29 meanwhile the pre-test was 66,82. Additionally, paired sample t-test result also represented the significance value were $0,00 < 0,05$. This result proved Renderforest-based multimedia was effective for teaching writing to visual learning styles' students. It indicated that the visual students had a great enhancement in their writing achievement after they got the treatment using Renderforest for teaching writing in the classroom.

Regarding to this research finding, it was related to the studies from Rosidah, Imamah, & Madjid (2020). They found Renderforest was incredibly good for students' stimulation and improved learning achievement. Hereby, Renderforest was ideal for teachers looking to strengthen classroom activity, encouraging creativity,

improving collaboration, streamlining work as a teaching tool during classroom activity. In this case, it is appropriated with the implementation of Renderforest for teaching writing in this current study that proved it was effective media due to Renderforest provided free services video creation which let the teacher to be creative for creating unique and attractive video that make students feel challenged to complete in answering questions properly and correctly.

The Effectiveness of Renderforest-Based Multimedia in Teaching Writing to Auditory Learning Styles' Students

The result represented students' post-test had a higher mean score rather than their pre-test, whereby the students' post-test mean score were 80,33 meanwhile the pre-test were 63,43. Additionally, paired sample t-test result also represented the significance value were $0,00 < 0,05$. This result proved Renderforest-based multimedia was effective for teaching writing to auditory learning style' students. It indicated that auditory students had a great enhancement in their writing achievement after they got the treatment using Renderforest for teaching writing in the classroom.

Regarding to this research finding, it was related to the studies from Febriani (2020); Sari & Fathoni (2022) that has proven Renderforest media has a positive impact in increasing students' imagination skills in writing skills by seeing the illustration and listening to the voice recording that explained the illustration. Regarding to the findings and the previous studies, it revealed illustration which supported by sound and voice recording shown become a complex learning video can increase students' imagination and comprehension in learning material. Hereby, students can improve their abilities and their imagination in writing skills.

The Differences between the Effectiveness of Powtoon-Based Multimedia and Renderforest-Based Multimedia in

Teaching Writing to Visual Learning Styles' Students

The result showed students' post-test mean score in experimental I were 82,42 meanwhile students' post-test mean score in experimental II were 83,29. It means that both of Powtoon and Renderforest showed that they were effective to improve students' learning achievement in writing skills. In addition, independent sample t-test result represented the significance value was 0,648, which means the significance value was $0,648 > 0,05$. It deduced that there was no significant difference between students' post-test score that were taught using Powtoon and Renderforest for teaching writing to visual students.

According to the findings, it can be inferred that both of Powtoon and Renderforest were equally effective for teaching writing to visual students. The effectiveness of Powtoon and Renderforest were equal in teaching writing due to both of Powtoon and Renderforest were audio-visual media which is they have similar function in presenting learning material, as it was align to the study from Rioseco, Nogués, & Muñoz (2017) that revealed positive opinion about using Powtoon in the development of learning activities wherein Powtoon offers to express or transmit information through audio-visual creation. It revealed that Powtoon and Renderforest provided services for creating animated video and graphic design. In this case, it proved both Powtoon and Renderforest can improve students' learning achievement in writing skills because of the same function of those applications.

The Differences between the Effectiveness of Powtoon-Based Multimedia and Renderforest-Based Multimedia in Teaching Writing to Auditory Learning Styles' Students

The result showed students' post-test mean score in experimental I were 83,54 meanwhile students' post-test mean score in experimental II were 80,33. It proved that Powtoon was better than Renderforest for

teaching writing to auditory learning styles' students. In addition, regarding to independent sample t-test result, it represented that the significance value was $0,072 > 0,05$. It means that there was no significant difference between students' post-test score that was treated by using Powtoon and Renderforest for teaching writing to auditory students.

According to the result, it can be inferred that both of Powtoon and Renderforest were also equally effective for teaching writing to auditory learning styles' students since both of Powtoon and Renderforest were audio-visual media which is they have similar function in delivering learning material. Sulistyaningrum & Zubaidah (2021) mentioned that it offered to express or transmit information through audio-visual creation that consisted of a variety of features and functions that can be used to create unique and attractive video. In this case, the differences of Powtoon and Renderforest were only in the display of video templates provided by each application. It means that both of the interactive multimedia played the same roles as presentation modes in teaching writing because Powtoon and Renderforest performed the same function as a teaching media to present the learning material by capturing students' attention while displaying and listening to the animation video in front of the class.

The Relation between Interactive Multimedia-Based Learning using Powtoon and Renderforest and Students' Learning Styles in Teaching Writing

The researcher calculated students' post-test by using the test of two-way ANOVA. Regarding to the results of Between-Subject Effects test, it proved that the significant value of media*styles was 0,129, which means that the significance value was bigger than 0,05. It indicated that there was no relation among Powtoon, Renderforest, and students' learning styles for teaching writing. There was no relation between interactive multimedia-based learning and

students' learning styles due to both of Powtoon and Renderforest could improve students' learning achievement in writing skills to visual and auditory learning styles' students. As a result, there was no relationship between interactive multimedia-based learning and students' learning styles in teaching writing.

These findings were revealed by Harianja et al. (2021); Ironsi (2022); Hafour & Al-Rashidy (2020) that mentioned teaching and learning media significantly improved various writing instruction areas, wherein it was congruent with these studies showing that learning media were highly successful and efficient in writing instruction. On the other hand, the studies from Sauhana & Yeni (2021); Rachman, Haq, Pratama, & Prasetyo (2019) mentioned that there was significant correlation between English achievement and students' learning styles. Regarding to those previous studies, different things were found in this study. The result in this study proven that there is not always a relationship between the use of teaching media and students' learning style. Therefore, visual and auditory learning styles' students represented an equal achievement in writing skills due to Powtoon and Renderforest supported visual and auditory students in teaching writing.

CONCLUSION

First, according to the result of pre- post-tests of visual learning styles' students in the class of experimental I taught using Powtoon, it inferred that there was a significant difference between pre- post-tests score of visual learning styles' students taught using Powtoon-based multimedia for teaching writing. It was revealed by the significant improvement of students mean score in pre- and post-test after they got the treatment.

Second, as the first hypothesis, the result of pre- post-tests of auditory learning styles' students in the class of experimental I taught using Powtoon, it inferred that there was a significant difference between pre- post-tests score of auditory learning styles'

students taught using Powtoon-based multimedia for teaching writing. It was revealed by the significant improvement of students mean score in pre- and post-test after they got the treatment.

Third, another interactive multimedia was Renderforest. In this case, pre- and post-tests were calculated by using statistical analysis. According to the result of pre- and post-tests of visual learning styles' students in the class of experimental II taught using Renderforest, it inferred that there was a significant difference between pre- post-tests score of visual learning styles' students taught using Renderforest-based multimedia for teaching writing. It was revealed by the significant improvement of students mean score in pre- and post-test after they got the treatment.

Fourth, as the third hypothesis, the result of pre- and post-tests of auditory learning styles' students in the class of experimental II treated by using Renderforest represented there was a significant difference between pre- post-tests score of auditory learning styles' students taught using Renderforest-based multimedia for teaching writing. It was revealed by the significant improvement of students mean score in pre- and post-test after they got the treatment.

Fifth, in comparing Powtoon and Renderforest for visual learning styles' students, post-test in both classes were calculated. According to the result of post-test of visual learning styles' students taught using Powtoon and Renderforest, it inferred that there was no significant difference between post-test mean score of visual learning styles' students treated by using Powtoon and Renderforest. In this case, it can be revealed that both of Powtoon and Renderforest were equally effective for teaching writing to visual learning styles' students since that students' post-test mean score from both classes were higher than students' pre-test mean score.

Sixth, the comparison between Powtoon and Renderforest also was done to auditory learning styles' students, thus post-test in both classes were calculated. According to

the result of post-test of auditory learning styles' students treated by using Powtoon and Renderforest, it inferred that there was no significant difference between post-test mean score of auditory learning styles' students taught using Powtoon and Renderforest. In this case, it can be revealed that both of Powtoon and Renderforest were equally effective for teaching writing to auditory learning styles' students since that students' post-test mean score from both classes were higher than students' pre-test mean score.

Seventh, for the relationship between interactive multimedia-based learning using Powtoon and Renderforest and students' learning styles in teaching writing, students' post-test in both classes were calculated. According to the test result, it represented there was no relation between interactive multimedia-based learning using Powtoon and Renderforest and students' learning styles for teaching writing. It inferred that both interactive multimedia had similar effectiveness for teaching writing to visual and auditory students. In other words, there were no media that dominate the students' learning achievement in writing skills based on their learning styles since both of Powtoon and Renderforest could improve students' learning achievement in writing skills to visual and auditory students.

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