DEVELOPMENT OF AUDIOVISUAL LEARNING MEDIA BASED ON WORDWALL APPLICATIONS TO IMPROVE LITERACY SKILLS

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Article Information	ABSTRACT
	In the world of education, teachers are required to play an important role in supporting students' learning. Efforts that can be made are using learning media. One of them is the use of *audiovisual learning media* to clarify the material so that learning objectives can be achieved. However, its use is often inappropriate, where in learning, student literacy is lacking and even student interest in knowledge is very low. Based on these problems, improving student literacy can be overcome using the *online game learning media Wordwall.* The aim of this research is to increase the literacy of fourth grade elementary school students. R&D research method the sampling technique used is *purposive sampling.* The sample for this research consisted of 33 four grades students, namely 13 students at SDN 1 Tamanan and 20 students at SDN 1 Karanganyar. the results of the paired sample *t-test* showed that H_0 was rejected and H_a was accepted so that there were differences before and after the use of *audiovisual* learning media based on *the wordwall game* application to increase the literacy of elementary school students with the effectiveness value through the N -*Gain test* showing an increase, So it can be concluded that *audiovisual* learning media based on *the wordwall game* application is able to increase student literacy and is an interesting, fun, valid and practical media to be applied in the learning process in elementary schools. *This is an open access article under the <u>CC BY-SA</u> license.*

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1. INTRODUCTION

Education cannot be separated from the learning process, efforts to create learning conditions that foster interest and talent in students optimally, so that learning goals can be achieved (Nugroho, 2021) explains that education is understanding directed ways to create learning situations and methods so that students actively advance their potential to have religious spiritual strength, self-control, personality, moral intelligence, nobleness and skills needed by themselves, the nation's community and the State. Education today has one goal, one of which is increasing competence, namely literacy. Literacy itself is a set of individual abilities and skills in reading, writing, speaking, calculating and solving problems. Education cannot be separated from the learning process, efforts to create learning conditions that optimally foster interest and talent in students, so that learning goals can be achieved. According (Subandiyah, 2017) to the realm of learning, literacy skills are an important ability that every student must have to master various subjects. Based on the fact that there is very low interest in reading among elementary school students in Indonesia, this is known based on the " *Most Littered Nation In The World* " study conducted by *Central*

Connecticut State University in March 2016, it was stated that Indonesia was ranked 60th out of 61 countries. who were surveyed. This fact is very concerning for education in Indonesia, even though we know that reading activities have a very strong cultural influence on students' literacy development. Through reading books, we can gain a lot of knowledge, we can even freely expand our horizons.

The results of observations and interviews with four grades teachers conducted at SDN 1 Tamanan Trenggalek, there were several problems found including (1) in the learning process students tend to be passive. (2) students' poor conception of science learning material, (3) students' low reading ability which causes students' literacy to be classified as poor, and (4) inappropriate use of learning media in instilling concepts in students. This problem shows that there are more passive students than active students. From the observation questionnaire, why so many students are passive, this is because learning has not run optimally due to many influencing factors, one of which is learning media, most of which only use thematic package books and worksheets, thus making students less interested in learning.

One solution to solving the problem of low literacy in elementary schools is that we need media that is able to provide meaningfulness in terms of learning while playing so that students will remember and apply it in everyday life (Dewinta, Santosa, & Nugroho, 2022). Factors that influence teachers in learning success are the teacher's skills in delivering material, presentation that is interesting and not boring can have a positive impact on students (Awaludin, Wibawa, & Winarsih, 2020). Therefore, it is necessary to develop more creative digital-based learning media that refers to question instructions through *wordwall games.* Learning media are tools that are able to assist the teaching and learning process and function to clarify the meaning of the message or information conveyed, so that the planned learning objectives can be achieved (Mutmainnah & Ismaniar, 2018). (Djamarah & Zain, 2013) states that *audiovisual media* is media that has elements of sound and images. This type of media has better capabilities, because it includes both the first and second types of media. Therefore, it can be concluded that *audiovisual media* is media that has sound and image elements which are used as a link to convey material to achieve learning objectives.

One type of *audiovisual media* is digital-based learning media that uses the *wordwall application* . The *wordwall* application is an example of *audiovisual- based learning media.* This application can help better learning. According to , the use of the (Shofiya Launin, Wahyu Nugroho, & Angga Setiawan, 2022)*online game* learning media Wordwall is to be able to find out the extent of the *game's influence* as a medium that can increase students' interest in learning. *Wordwall* educational game according to(Lestari, 2021) is a very interesting browser application with its aim as a source for students to learn, as a medium, and a fun assessment tool for students. So the *wordwall game application* is an interactive learning medium that can hone students' creativity and is packaged in a very interesting and fun way. So that innovation and uniqueness in learning using the *wordwall game application* can help learning and can also help students to be more interested in learning and less likely to be passive. *Audiovisual* learning media based on *the wordwall game* application aims to overcome student boredom in learning, so that students become more active in receiving learning material. The *wordwall game* application itself is designed to create quiz-based educational games that can help teachers measure students' level of understanding.

Relevant previous research was conducted by (Putri, 2020), with the title "Effectiveness of Using the *Wordwall Application in Online* Mathematics Learning in Grade 1 Whole Number Material at MIN 2 South Tangerang City". The research results show that the use of *wordwall media* in online mathematics learning activities is very effective. Furthermore, research was carried out (Auliya, 2021)with the title "Development of a *Wordwall- Based Evaluation Instrument* for seventh grades Middle School Science Subjects". The research results show that the development of a *wordwall-* based evaluation instrument for science subjects is considered very practical. Based on the results of this research , it can be concluded that the *Wordwall application* is effective and practical in improving learning, especially literacy.

Based on the explanation above, researchers realize the importance of *wordwall application media* which is useful for students' literacy skills. So researchers are interested in conducting research entitled "Development of *Audiovisual* Learning Media Based on the *Wordwall* Application to Improve Students' Literacy Abilities".

2.   RESEARCH METHODS

Researchers use research and development or what is usually called Research And Development (R&D). According to (Sugiyono, 2017), the Research and Development (R&D) method is a research method used to produce certain products, and test the effectiveness of these products. The sample used by researchers is representative of the population that will be used as subjects in research or is often called purposive sampling. According to (Sugiyono, 2017) Purposive sampling is a technique for sampling data sources with certain considerations.

The research implementation time is approximately 3 weeks starting on May 15 2023 until June 3 2023 at SDN (Public Elementary School) 1 Tamanan, Trenggalek District, Trenggalek Regency, East Java and SDN 1 Karanganyar, Trenggalek District, Trenggalek Regency, East Java. In this research, researchers took a sample of 33 students in fourt grades at elementary schools in Trenggalek. The sample was taken from 13 fourt grades students at SDN 1 Tamanan and 20 fourt grades students at SDN 1 Karanganyar.

Researchers conducted interviews to collect data which were used by means of questions and answers with the class teacher to obtain information about the class with the aim of finding out information about the conditions, media used, and problems in the class. Researchers used a questionnaire to find out information from respondents. The instruments used include media, material, language, practitioner and student response questionnaires. Researchers also chose to use a test consisting of 5 questions in the form of descriptions to determine students' literacy abilities. According to (Purwanti, 2018) the explanation, a test is a set of tasks that must be done or several questions that must be answered by students to measure the level of understanding and mastery of the material covered. Tests are given to students individually for pretest at the initial stage and posttest at the final stage.

This research instrument has been tested for validity and reliability in data processing using the SPSS version 29.0 program which aims to find out whether each question item is valid to use and reliable. Next, a data normality test and a data homogeneity test were carried out with the help of SPSS version 29.0 to find out whether the data was normally or not normally distributed and to find out whether the set of data being measured was from the population used in two variants or more homogeneous (same) groups. After that, the researcher tested the hypothesis using the paired sample t-test, the aim was to find out the difference with the conditions if the sig. < 0.05, so that later Ha is accepted and H0 is rejected or vice versa. The final step, researchers also used the N-Gain Test which researchers use to determine the effectiveness of implementing learning media. This test uses the paired sample t-test formula with the help of SPSS 29.0. If the Sig value. (2-tailed) is smaller than 0.05, then changes occur before and after using learning media and vice versa.

3.   RESULTS AND DISCUSSION
Results

The results of product development that have been created are audiovisual learning media based on the wordwall application, so before applying it to the field, researchers first test the media with experts, namely media experts, language experts and material experts. When the media needs to be revised and then tested again by experts until there are no further revisions and it can be said to be valid for application in the field. The data obtained from the expert assessment is then recapitulated to determine the feasibility and effectiveness of audiovisual learning media based on the wordwall application that has been developed. Data obtained from experts is shown in the following table:

Table 1. Recapitulation of Expert Tests

No	Data source	Score	Criteria
1	Media Expert	86.36 %	Very valid
2	Materials Expert	96.15 %	Very valid
3	Linguist	93.75 %	Very valid
	Average	**92.09 %**	**Very valid**

Trial results Before carrying out this research, the researcher conducted a trial of the instrument. Before giving the research instrument to the sample, the data validity was tested with the help of the SPSS 29.0 program. The following is a validity test table:

Table 2. Validity Test

Statement No	r table	r count	Information
1	0.282	0,324	valid
2	0.282	0.348	valid
3	0.282	0.481	valid
4	0.282	0.395	valid
5	0.282	0.436	valid

To determine the suitability of the statements in the questionnaire instrument, the next step is a reliability test using the SPSS 29.0 program with the Alpha Cronbach formula. If the statements on the instrument are reliable, they are then used as statements in the questionnaire for use in the pretest and posttest. The following is a table of results from the reliability test output:

Table 3 . Reliability Test

No	Question	Cronbach alpha	Standard	Reliability
1	Question 1	0.801	0.7	Reliable
2	Question 2	0.761	0.7	Reliable
3	Question 3	0.794	0.7	Reliable
4	Question 4	0.763	0.7	Reliable
5	Question 5	0.812	0.7	Reliable

The next step is the data analysis prerequisite test, which is used to determine whether the results of the data analysis being used for hypothesis testing can be continued or not. This analysis requires that the data comes from a normally distributed population and the groups being compared are homogeneous. This research uses a data normality test and a homogeneity test. Data normality test results using the Shapiro Wilk technique with the help of the SPSS 29.0 program. The results of the student pretest data normality test obtained a significant value of 0.468. The sig value indicates that the pretest value is ≥ 0.05, so it can be concluded that the data is normally distributed. Meanwhile, the posttest data obtained a significant value of 0.60. A significant value indicates that the posttest value is ≥ 0.05. Based on these results, it shows that the data is normally distributed, so the next step is to carry out a homogeneity test.

Table 4. Normality Test Results

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest	.118	33	.200*	.970	33	.468
Posttest	.174	33	.013	.938	33	.060

A homogeneity test is carried out with the aim of determining whether data from two or more groups are homogeneous (the same) or heterogeneous (not the same). This homogeneity test was carried out using One-way ANOVA which was calculated using the SPSS 29.0 program. with the significance level the results will be obtained if the significance value shows > 0.05 then the data variance is homogeneous. The following is a homogeneity test table:
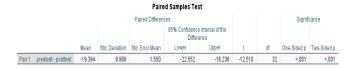
Table 5. Homogeneity Test Results

Test of Homogeneity of Variance[a]

		Levene Statistic	df1	df2	Sig.
prestest	Based on Mean	.415	4	27	.796
	Based on Median	.516	4	27	.724
	Based on Median and with adjusted df	.516	4	20.916	.725
	Based on trimmed mean	.438	4	27	.780

It is known that the measurement data from the students' pretest and posttest has a significant value of 0.780 > 0.05, which means the data is homogeneously distributed or has the same variance. Next, the hypothesis test used in this research was carried out, namely the Paired Sample T-Test with the aim of making a decision whether the research hypothesis being carried out was accepted or rejected. The Paired Sample T-Test test results can be shown in the following table:

Table 6. Hypothesis Testing

Paired Samples Test

		Paired Differences							Significance	
					95% Confidence Interval of the Difference					
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	One-Sided p	Two-Sided p
Pair 1	prestest - posttest	-19.394	8.906	1.550	-22.552	-16.236	-12.510	32	<,001	<,001

Based on the hypothesis above, a significance value of 0.001 (<0.05) was obtained. Based on these results, it shows that H0 is rejected and Ha is accepted, which means there are differences before and after the use of audiovisual learning media based on the wordwall game application as an increase in elementary school students' literacy. Then an N-Gain test was carried out to calculate the difference in scores and the

level of difference between before and after the use of audiovisual learning media based on the wordwall game application from the pretest and posttest results. The following is the N-Gain test table:

Table 7. N-Gain Test

Descriptive Statistics

		Minimum	Maximum	Mean	Std. Deviation
N_Gain	33	.20	1.00	.5709	.18359
Valid N (listwise)	33				

The results of the N-Gain test, the pretest and posttest scores obtained by students at SDN 1 Tamanan and SDN 1 Karanganyar obtained a significance value of 0.5709 (< 0.7). Based on these results, it shows that the influence of the use of audiovisual learning media based on the wordwall game application can be said to be effective in the application of learning media.

Discussion

The results of the development of audiovisual learning media based on the Wordwall application for class V students show significant effectiveness based on various tests and data analysis. Initial evaluation of the media by media, language, and materials experts indicates that the media has achieved a very high level of validity with an average score of 92.09%, indicating that it is ready for use after necessary revisions. This validity is in line with research which (Erbay, Ömeroğlu, & Çağdaş, 2012) emphasizes the importance of validation by experts to ensure the quality of learning media, so as to optimize teaching effectiveness.

The instrument validity test carried out with the help of the SPSS 29.0 program shows that all statements in the research instrument are valid with a calculated r value that is greater than the r table. This is consistent with previous findings by (Cizek, 2020) underlining that good instrument validity is essential to obtain accurate and reliable data. The reliability test also shows that all question items in the questionnaire have a Cronbach alpha value above 0.7, indicating that the instrument is reliable and can be used for pretest and posttest, in line with the reliability standards recommended by Nunnally and Bernstein (Heale & Twycross, 2015).

Furthermore, prerequisite analysis which includes normality and homogeneity tests of data shows that data from students' pretest and posttest are normally and homogeneously distributed. The normality test using Shapiro-Wilk produces a significant value greater than 0.05, which is in accordance with the results of research which (Krishnaswamy, Sivakumar, & Mathirajan, 2012) shows that data is normally distributed if the significance value is greater than 0.05. The homogeneity test carried out with One-way ANOVA also showed a significance value of 0.780, which shows that the variance of the pretest and posttest data is homogeneous. This supports appropriate data analysis methods and the relevance of the results obtained, as presented by (Hair, Black, Babin, & Anderson, 2019).

The results of hypothesis testing using the Paired Sample T-Test show a significance value of 0.001, which is smaller than 0.05, indicating that there are significant differences before and after the use of learning media. This finding is in line with the results of research (An, Xi, & Yu, 2024; Riapina, 2021) which shows that the use of technology-based media such as game applications can significantly improve student learning outcomes. The N-Gain test shows an average N-Gain value of 0.5709, which shows the effectiveness of learning media in increasing student understanding. These results are in accordance with findings from research which (Anggita Ahsani, Ellynlouis Berthania, Rizki Pramana, Putri Kumala Dewi, & Nisa Asy Syifa, 2022; Sapurta, 2020; Smaldino, Russel, Heinich, & Molenda, 2004) revealed that technology-based learning media can increase student motivation and learning outcomes effectively.

From a comparative perspective with relevant studies, this research strengthens the evidence that interactive and application-based learning media, such as Wordwall, can have a significant positive impact on student learning processes. Studies by (Hidayatullah, Syihabuddin, & Damayanti, 2021; Kustandi & Sutjipto, 2011; Munger, Gopal, Nagler, & Tucker, 2021) also support the use of technology-based media to improve the quality of mathematics learning, showing that such media not only make learning more interesting but also more effective in achieving educational goals. By considering the results of the validity, reliability and effectiveness tests obtained, it can be concluded that audiovisual learning media based on the Wordwall application has proven to be effective in increasing students' mathematical literacy, making a significant contribution to the development of learning media at the elementary school level.

4.   CONCLUSION

The results of the research that has been carried out show the use of the *wordwall game application* can influence student literacy, after developing learning media *audiovisual* application based *wordwall games* in learning activities, student literacy increases. This learning media is designed to provide several types of questions with various different instructions so that it can be used as a medium to increase students' literacy regarding questions when learning takes place in a more enjoyable way by using this *wordwall game application* as a learning medium. Based on the effectiveness results, data was obtained that student scores increased beyond the Minimum Completeness Criteria (KKM). Based on the *paired sample t-test,* the results showed that H $_0$ was rejected and Ha $_a$ was accepted so that there was a difference before and after the use of *audiovisual* learning media based on *the wordwall game* application to increase the literacy of elementary school students and with the N-Gain value which showed a significant increase significant. This means that audiovisual learning media based on the wordwall game application can increase the scientific literacy of fourth grade elementary school students.

THANK-YOU NOTE

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