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The Influence Of An Interactive Learning Model Game Based Learning Using The Wordwall Application On The Geographic Literacy Of Class X Students In MA AN-Nur Gio Parigi Moutong District

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ABSTRACT

The aim of this research is to determine the influence of the interactive game-based learning model using the Wordwall application on the technological literacy of class X students in Geography Learning at MA An-Nur Gio. This research uses quantitative research methods with a Quasi Experimental research type. Data collection techniques include observation, tests and documentation to determine the effect of the interactive game based learning model using the Wordwall application on students' Geography literacy. Through a series of data analysis tests which include pretest and posttest, as well as implementing various analysis tests using the SPSS IBM 25 application. Based on the results of the n-gain test results in the experimental class it was 60.15% while for the control class it was 17.66%, so it can It was concluded that the n-gain in the experimental class had increased compared to the control class. Based on the hypothesis test, there is a difference in scores between the posttest class and the experimental class, the control class reached 69.16, the posttest reached 83.46. This proves that the Game Based Learning interactive learning model using the Wordwall application has an influence on increasing students' Geography literacy at MA AN-Nur Gio Parigi Moutong Regency.

KEYWORDS

Game based learning
Wordwall
geographical literacy

1. Introduction

Learning is a mental and emotional process that involves individual thoughts and feelings, resulting in changes in behavior in the form of knowledge, attitudes and skills. This change occurs through interaction with the environment gradually and continuously (Nurvita 2016).Through the use of digital tools and interactive approaches, students can access and evaluate information from a variety of sources, strengthening their critical abilities in responding to contemporary challenges. Geography literacy also allows someone to better understand and appreciate the beauty and complexity of the earth to be able to participate in creating a harmonious environment and culture (Elbow in Khotimah 2022).

Based on the results of initial observations and interviews with geography subject teachers conducted at MA An-Nur Gio, the learning model implemented still uses a conventional learning model, namely a one-way teaching method where the teacher functions as the main source of information and students act as passive recipients. Several students expressed that the lack of interaction and practical activities meant that they were not actively involved in the learning process, so that the material presented felt monotonous and difficult to remember. During the learning activities, several students showed less enthusiasm in participating in class learning, which could be seen from the small number of students asking questions related to the material that had been presented by the teacher previously. In addition, when the teacher asked questions, some students were unable to provide correct answers regarding the material that had been presented.

The low level of student literacy can be seen from their inability to analyze arguments well, formulate problems clearly, and ask or answer questions in depth and relevance. This is exacerbated

by students' low interest in learning, which has an impact on their geographic literacy. This can be seen from the average daily test score for class This shows that many students have not met the expected competencies.

This condition is proof that several class X students at MA An-Nur Gio do not fully understand the material or concepts taught by the teacher. This can be seen from the low level that during learning activities, some students show less enthusiasm in participating in class learning, which can be seen from the small number of students who ask questions related to the material that has been presented by the teacher previously. In addition, when the teacher asked questions, some students were unable to provide correct answers regarding the material that had been presented. the level of student participation in the learning process, such as students rarely asking questions or discussing the material presented. answering questions asked by the teacher also shows that their understanding has not reached the expected level. The impact is that their geographic literacy becomes less developed, and they may not be ready to face the complex challenges that exist in today's global society.

Based on the various kinds of problems that occur in the classroom, an effective and enjoyable learning model is needed. As educators, teachers need to adapt to changes in 21st century learning. Teachers are required to have skills in designing interesting learning. One effort that can be made is to utilize learning media to create an interesting and effective learning process (Putra et al.,2024). One learning model that can be utilized in geography learning is to apply a learning model that encourages students' active participation directly which makes the class atmosphere fun and enjoyable, such as playing, so that the material presented can be received and understood better by them. Students who learn through games tend to achieve better results compared to students who use traditional methods (Martono inPKembau2023). Of course, this approach is expected to encourage students to learn actively and increase their geographic literacy.

One form of learning model that can be used is the Game Based Learning (GBL) learning model. Game Based Learning (GBL) emerged as an innovative solution to overcome this challenge, by utilizing game elements to create a more engaging and effective learning experience. Game Based Learning is a learning method that utilizes games to support student learning processes.

Currently there are various educational game applications that support the Game Based Learning model. One of them is the Wordwall application. Wordwall allows students to compete, student learning motivation can increase with this. Apart from being able to be used as a learning resource, Wordwall can also be used as an assessment tool from teachers to students to measure student understanding. Wordwall can be thought of as a web application used to create fun quiz-based games. This application is very suitable for designing and evaluating learning assessments (Pamungkas et al., 2023).

2. Theoritical review

A. Learning model

A learning model is a systematic framework or approach used by educators to design and manage the learning process. These models help organize how information is presented, how students engage in learning, and how assessments are conducted.

B. Game Based Learning

Game Based Learning is a learning approach that uses game elements in an educational context. This approach integrates game elements such as challenge, achievement, competition, and excitement into the learning process to increase student engagement, motivation, and understanding.

According to Prasetya in Arbayu (2018) Game Based Learning is a form of learning centered on learning that uses electronic or digital games for learning purposes. This game-based learning process utilizes digital games as a medium to convey learning, improve understanding and knowledge, assessment or evaluation of material in a scientific discipline to students. Many studies have revealed that Game Based Learning is very effective if it is actually applied in learning.

C. Wordwall App

Wordwall is a digital learning platform that allows educators to create various types of interactive learning activities, from word games to quizzes and skills drills. This app is designed to help increase student engagement and facilitate an active and enjoyable learning process.

Wordwall is a digital gamification-based application with various game and quiz features that can be used by educators to deliver learning evaluations. This application is suitable for educators who can create learning assessment methods, besides this game can be played offline (Nur et al., 2021). Wordwall is a collection of words displayed on walls, bulletin boards, whiteboards in the classroom (Purnamasari et al., 2022).

The advantages and disadvantages of the Wordwall application according to Mujahidin (2017) for users, both educators and students:

• Advantages.
- Able to provide a meaningful learning system that can be easily followed by students.
- The assignment mode is in the Wordwall software, which students can access via cellphone.
- Be creative.

• Disadvantages.
- When used, it is prone to fraud and the font size cannot be changed.
- It takes longer to make
- Can only be seen because of visual media.

D. Geography Literacy

Geographic Literacy is the ability to understand, analyze and use geographic information to interpret the relationship between humans and the environment, as well as social, cultural, economic and political dynamics in various places. This includes skills in reading and understanding maps, analyzing geospatial data, as well as developing awareness of environmental and sustainability issues.

National Geographic in Nisa et al., (2017) defines Geographical Literacy as the ability to utilize geographic understanding and reasoning in the decision-making process. The term Geographic Literacy was first introduced by National Geographic, which used various media to explain this concept to the wider public.

3. Method

This type of research is quantitative with a quasi-experimental approach, namely a type of experiment that involves providing treatment, measuring impacts, and experimental units, but does not use random assignment to create comparisons. This method is used to conclude the changes caused by the treatment (Cook in Abraham 2022).This research was carried out at MA An-Nur Gio Jl. Student No. 57B, Gio Village, Moutong District, Parigi Moutong Regency.

This research was carried out in the odd semester of the 2024/2025 academic year, precisely from 21 October to 6 November 2024. In collecting data, various methods were used to ensure the data obtained was accurate and thorough, including observation, test methods, and documentation. Before research is carried out on a sample, the test instrument that will be used is first tested to ensure its validity and reliability. The validity test aims to assess whether the instrument is truly capable of measuring the aspect in question, while the reliability test is carried out to ensure that the instrument provides consistent results when used in similar conditions. This process is very important to ensure that the data obtained can be trusted and used as a solid basis for drawing research conclusions.

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Fig 1. Research location 2024

(source Nispa 2024)

4. Results and Discussion

4.1 Result

This research aims to find out the influence of the Wordwall application as a learning medium in increasing the literacy of class X students at MA An-Nur Gio in geography subjects. In this research, the data collection instrument used was a test in the form of wo questions. This test is specifically designed to evaluate students' level of understanding regarding Atmosphere material. Before being used on the sample, this essay test was first tested on class XI, which were students who had previously studied atmospheric material. This trial process is carried out to obtain initial data that can be analyzed in order to find out the level of validity and reliability of the questions. By carrying out this trial, researchers can ensure that the essay questions that will be used in the research are appropriate and able to measure students' level of understanding accurately. Validity and reliability testing was carried out using the IBM SPSS statistics 25 program. Reliability validity testing research was carried out on 21 students from class XI social sciences.

Students' geographic literacy levels are measured using an assessment rubric filled in by the assessor. The students' geographic literacy intervals are presented as follows:

Table 1. categories of geographic literacy level

Intervals	Categories
80-100	Very Good
60-79	Good
40-59	Enough
10-39	Not enough
0-9	Very less

Source: (Yonelson & Nurvita, 2019).

A. Validity test

Table 2. Validity Test

Correlations							
		S1	S2	S3	S4	S5	total
S1	Pearson Correlation	1	.000	.000	.931**	-.050	.650**
	Sig. (2-tailed)		1.000	1.000	.000	.815	.001
	N	24	24	24	24	24	24
S2	Pearson Correlation	.000	1	1.000**	-.044	.274	.672**
	Sig. (2-tailed)	1.000		.000	.838	.196	.000
	N	24	24	24	24	24	24
S3	Pearson Correlation	.000	1.000**	1	-.044	.274	.672**
	Sig. (2-tailed)	1.000	.000		.838	.196	.000
	N	24	24	24	24	24	24
S4	Pearson Correlation	.931**	-.044	-.044	1	-.051	.624**
	Sig. (2-tailed)	.000	.838	.838		.811	.001
	N	24	24	24	24	24	24
S5	Pearson Correlation	-.050	.274	.274	.051	1	.421*
	Sig. (2-tailed)	.815	.196	.196	.811		.040
	N	24	24	24	24	24	24
total	Pearson Correlation	.650**	.672**	.672**	.624*	.421*	1
	Sig. (2-tailed)	.001	.000	.000	.001	.0	
	N	24	24	24	24	24	24

Source: SPSS 25 Application data processing results

Table 2 shows the questions tested in this research. The validity of the instrument was measured with a significance of 5% (N) 0.404 through a two-way test. Based on the calculation results, it shows that the questions have valid status.

B. Reliability test

Table 3. Reliability Test Results

Reliability Statistics	
Cronbach's Alpha	**N of Items**
.604	**5**

Reliability test results are considered reliable if they have a Cronbach's Alpha value > 0.600. Based on table 4.3, it can be concluded that the instrument used is reliable because it has a sufficient level of reliability because it obtained a Cronbach's Alpha value of 0.604.

C. Data processing results

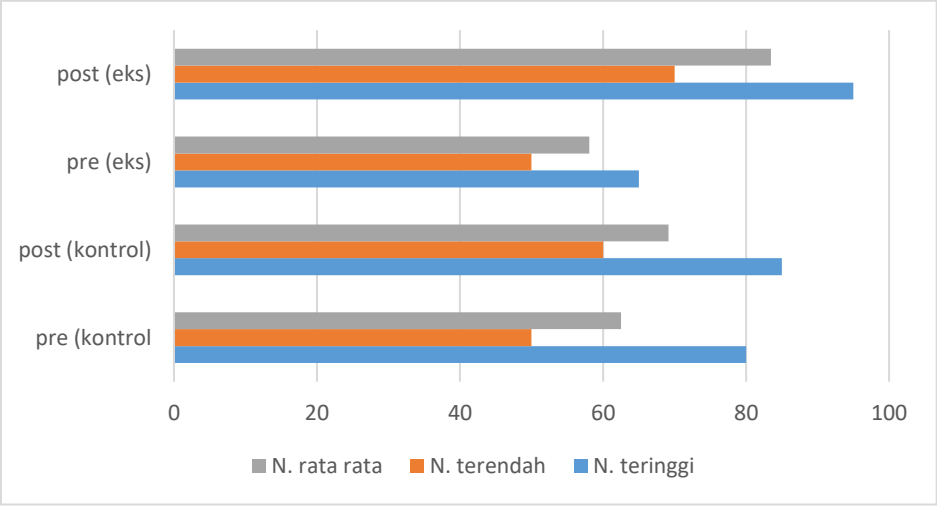

Fig. 2. Diagram of students' geographic literacy levels

Based on diagram 4.1, it can be concluded that there is a change in students' geographic literacy levels before and after learning activities using the wordwall application. This is different from conventional learning where students' geographic literacy levels have not increased.

D. Normality Test

Table 4. Normality Test

Tests of Normality

	Class	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	Df	Sig.
Geography Literacy	pretest_control	.212	12	.141	.908	12	.200
	posttest_control	.284	12	.008	.867	12	.159
	pretest_eksperimental	.191	12	.200*	.906	12	.187
	posttest_eksperimental	.342	12	.000	.817	12	.115

Source: SPSS statistics 25 data processing results

Based on table 4.6, the significant values (sig) of the data testing results are as follows: Control Pretest 0.200, Control Posttest 0.159, Experimental Pretest 0.187, and Posttest 0.115. The criteria for testing normality with the Shapiro-Wilk test state that if the significant value is <0.05, then the data is not normally distributed, whereas if the significant value is >0.05, the data is considered normally distributed. Therefore, it can be concluded that the data on variable X and variable Y meet the normal distribution criteria, because the significant value is greater than 0.05.

E. Homogeneity test

The homogeneity test aims to determine whether the variances of several populations are the same or not. This test can be carried out if the data used follows a normal distribution.

Table 5. Results of Homogeneity Analysis

Test of Homogeneity of Variance

Levene Statistic	df1	df2	Sig.

Geography Literacy	Based on Mean	.014	1	23	.907
	Based on Median	.021	1	23	.886
	Based on Median and with adjusted df	.021	1	22.660	.886
	Based on trimmed mean	.001	1	23	.980

Source: Data processing results from the SPSS statistics 25 application

Based on the table, the significance value for students' geographic literacy is 0.907. Because the significance value is greater than 0.05, it can be concluded that the data used is homogeneous.

F. N-Gain Test

The N-Gain test is a method that is often used to measure how effective a lesson or intervention is in improving student learning outcomes. This method provides a strong basis for assessing the extent to which a learning program contributes to students' understanding (Sukarelawa et al., 2024).

Table 6. N-Gain Test

N-Gain score test results			
No	**Control class N-Gain score %**	**No**	**Experimental class N-Gain %**
1	25,00	1	33,33
2	25,00	2	75,00
3	14,29	3	62,50
4	00,00	4	62,50
5	16,67	5	70,00
6	25,00	6	66,67
7	14,29	7	88,89
8	20,00	8	57,14
9	20,00	9	66,67
10	12,50	10	25,00
11	25,00	11	60,00
12	14,29	12	57,14
		13	57,14
Average	**17,6687**		**60,1526**
Minimal	**00,00**		**25,00**
Maximum	**25,00**		**88,89**

Source: SPSS Statistics 25 N-Gain Test Data Processing Results

Based on the table above, it can be concluded that the N-Gain value for the control class is 17.66%, while for the experimental class it reaches 60.15%. According to the N-Gain classification in percentage, if N-Gain ≥ 0.7 (70%) then it is included in the high category, if 0.3 (30%) ≤ N-Gain < 0.7 (70%) it is included in the medium category, and if N-Gain < 0.3 (30%) it is in the low category. Therefore, N-Gain in the experimental class is in the medium category with a value of 60.15%, while

N-Gain in the control class is in the low category with a value of 17.66%. Thus, it can be concluded that the N-Gain in the experimental class shows an increase compared to the control class.

G. Hypothesis testing

Hypothesis testing is carried out to determine whether the research hypothesis is accepted or rejected based on the data obtained from the research. This test uses the t test carried out through the SPSS 25 for Windows program. This analysis focuses on the hypothesis which states that there is a difference in the level of geographic literacy between students who are taught using a game-based learning model using the Wordwall application and students who are taught using a conventional learning model.

Table 7. T-test

Group Statistics

	kelas	N	Mean	Std. Deviation	Std. Error Mean
Geography Literacy	post kontrol	12	69.1667	6.68558	1.92996
	post eksperimen	13	83.4615	6.88737	1.91021

Source: Data Processing Results from the SPSS Statistics 25 Application

Table 8. Independent Sample Test Analysis Results

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
Geography Literacy	*Equal variances assumed*	.014	.907	-5.258	23	.000	-14.29487	2.71882	-19.91918	-8.67056
	Equal variances not assumed			-5.264	22.934	.000	-14.29487	2.71545	-19.91311	-8.67664

Source: Data Processing Results from the SPSS Statistics 25 Application.

4.2 Disscusion

The Wordwall application has various advantages that make it an effective tool in learning. One of them is its ability to make learning more interactive and fun through various types of educational games that can be adapted to the learning material. Wordwall is a platform that can help increase student interaction and involvement in the learning process. Wordwall, can create various types of interactive learning activities such as crossword games, word puzzles, word cards, and others. Wordwall learning media is an interactive media that is easy to use and can increase student interest and motivation. Wordwall learning media influences students' interest and motivation to learn so that their geographic literacy increases.

Research conducted at MA AN-Nur Gio, the Wordwall application was proven to be influential in increasing students' geographic literacy. This can be seen from the posttest results of students in the experimental class, which showed a higher average score compared to the control class. The N-Gain test results in the experimental class reached 60.15%, while the control class was only 17.66%, which shows a significant increase in the experimental class compared to the control class. Apart from that, the results of the hypothesis test showed that there was a difference in scores between the

control class and the experimental class, with an average score for the control class of 69.16 and the experimental class 83.46. This proves that the use of the Wordwall application is effective in increasing the geographic literacy of class X students at MA AN-Nur Gio.

5. Conclusion

Based on the results of this research, it can be concluded that the application of the Game Based Learning model using the Wordwall application has had an influence on increasing the geographic literacy of class X students in geography subjects at MA AN-Nur Gio, Parigi Moutong Regency.

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