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Development of Wordwall Web-Based Interactive Learning Media on Living Things Classification Materials to Increase Students Interest In Learning

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ABSTRACT. Learning media is a very important means in the process of student learning activities. The boring learning process makes students' interest in learning decrease, this is because teachers still use the lecture method as the learning method used. This study uses the research and development/RnD method with the ADDIE model consisting of Analysis, Design, Development, Implementation, and Evaluation. The data analysis technique used in measuring the level of validity is using a Likert scale and to measure the effectiveness of a medium, a Paired Sample T-Test hypothesis test is carried out. The average percentage results obtained from the validity test of media experts were 95% with a very valid category, from material experts it was 90% with a very valid category, and from user assessments it was 93.75% with a very valid category. The results obtained from the normality test show that the pre-interest value data has a Sig. (2-tailed) value of 0.200, while the post-interest value also has a value. Sig. (2- tailed) of 0.200. A significance value greater than 0.05 indicates that the pre-interest and post-interest data are normally distributed. Meanwhile, the Paired Sample T-Test hypothesis test in the student learning interest questionnaire received a score of sig. (2-tailed) by 0.00, so sig. (2-tailed) < 0.05. Then H0 is rejected and H1 is accepted. Based on these data, it can be concluded that web-based interactive learning media word wall has a significant influence in increasing learning interest in classification materials.

Keywords: word wall, learning media, student learning interest, classification of living beings

INTRODUCTION

The implementation of education in Indonesia cannot be separated from the guidelines used, namely the curriculum. The curriculum is needed so that education can focus on the same goal. The curriculum in Indonesia is always changing because it is adjusted to the needs of students and the development of the times. The curriculum used at this time is the Independent Curriculum. In implementing the Independent Curriculum, students will be more involved in the learning process, they are also encouraged to explore interests, develop activity-based projects, and learn through real experiences. The Independent Curriculum gives students the freedom to explore topics of interest to them, ask questions, and find solutions independently. This encourages them to look at problems from various perspectives, analyze information critically, and develop more creative thinking (Suja'i, 2023)

Good learning is learning that can increase students' creativity and interest in learning, where the learning process provides opportunities for students to actively participate in building their own knowledge. Learning that creates an active and educational situation, namely interaction between teachers and students, is called interactive learning. Memorable and interactive learning for students is inseparable from the components that must be designed by teachers, one of which is learning media. Learning media has an important role in the learning process because it is a means or tool to convey information to students (Jalinus, 2016). Interactive learning media is expected to help students to more easily understand the material and work on evaluation questions, encourage and stimulate students to think creatively and critically

and can foster students' interest in learning, so that students are able to enjoy a fun, practical and effective learning process (Situmorang, 2020).

Based on the results of interviews and observations conducted by researchers in one of the schools in the Nganjuk East Java, the use of interactive learning media in the teaching and learning process is still not fully implemented by teachers and learning is more using the lecture method and occasionally doing practicum in the science laboratory. The learning media used is only a package book or worksheet, this makes students less interested in learning in class, students are also less enthusiastic in answering questions given by the teacher during the learning process. According to the science maple teacher at the school, the material that is difficult or needs more understanding is the classification of living things. This material can also feel complicated for students, especially if it is only delivered through the traditional lecture method.

The results of observations with students about the needs analysis stated that 86.2% of students answered that teachers often use the lecture method, 65.5% of students answered that science teachers did not use interactive learning media during the learning process and 75.9% of students answered that the explanation from the teacher was not sufficiently understood by students, due to the lack of variety of learning media used by teachers. From the description above, the learning theory that is compatible with the development of web-based interactive learning media word wall is the learning theory of constructivism. The theory of constructivism was developed by Piaget under the name of individual cognitive constructivist theory and Vygotsky in his theory called social cultural constructivist theory (Utami, 2016). Constructivist learning theory is an approach or perspective in the field of education that emphasizes the active role of students in building new knowledge and understanding. Constructivism argues that learning is an active process in which students are actively involved in the construction of their own knowledge through interaction with information, experiences, and the environment around them (Suparlan, 2019)

In the development of web-based interactive learning media word walls, materials presented in the form of applications that are easy for students to use, as well as practice questions packaged in the form of web word walls which are certainly interactive and fun will make students more interested and motivated to learn material that is considered difficult or boring if taught conventionally. Based on research conducted by Nadhirotuz Zulfah stated that word wall educational game media can increase students' interest in learning, this is evidenced by the results of the analysis of the observation sheet of students' learning interest obtained a percentage of 78% with a good category in cycle I, in cycle II obtained a percentage of 83.6% with a very good category, while in cycle III a percentage of 91% with a very good category (Zulfah, 2023). In addition, research conducted by Novia Lestari et al on the use of multimedia in interactive learning media can increase students' interest in learning, utilizing multimedia media in interactive learning can make teachers more enthusiastic in presenting learning materials to students, so that it can attract students' enthusiasm and interest in learning (Lestari et al, 2019). Research conducted by Tatsa Galuh Pradani stated that the use of word wall learning media can increase students' interest and motivation in learning science in elementary schools, this is evidenced by the results of observations that state that the aspect of student activity increases (Pradani, 2022)

Based on previous research, the researcher decided to develop a word wall-based interactive learning media that is expected to provide solutions to the above problems. This web-based interactive learning media wordwall is expected to function as a tool to support feasible and effective learning activities in the classroom, and can provide variety and innovation in the development of learning media.

METHOD

The methodology section describes the steps taken to execute the study. Therefore, it should be presented in sufficient detail for readers to understand why the methods used are reliable and valid in presenting the findings. This section must include elements such as the sampling technique, data collection methods, and the measures used. This study uses the research and development (R&D) method, because this study aims to obtain the results of product feasibility tests in increasing students' interest in learning (Sugiyono, 2016). The model used is the ADDIE model, this model consists of five stages, namely Analysis, Design, Development, Implementation and Evaluation. The ADDIE development model focuses on evaluating how each component interacts with each other according to the existing phases (Rayanto et al, 2020).

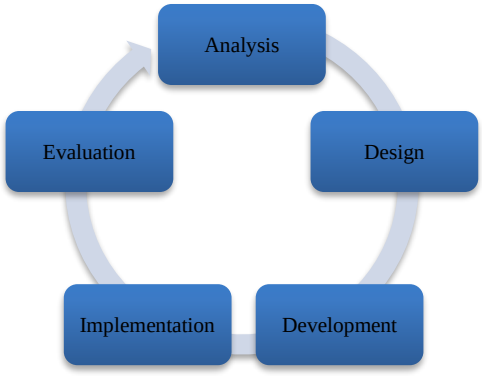

Figure 1. ADDIE Research and Development Model

The reason for using this research and development model is because the ADDIE research and development model is systematic and structured in the development of interactive learning media. ADDIE's research model is also focused on in-depth needs analysis which can later increase learning effectiveness, especially in achieving the goal of increasing students' interest in learning and learning outcomes. The ADDIE model consists of several stages, including: (a) Analysis, Needs analysis is carried out by providing questionnaires to students and conducting interviews with teachers to find out the learning conditions and media used during the learning process. Meanwhile, curriculum analysis is carried out to establish assumptions and limitations regarding the content that will be presented in the development of web-based interactive learning media word wall; (b) Design, In the creation of a web-based interactive learning media design, word wall is developed using storyboards and storylines. Storyboard is a general initial design that includes template design, navigation buttons, menu presentations, and presented materials, while storyline is a design of learning flows, stories, and image or animation planning that will be applied to present material on the media that has been developed. The creation of web-based interactive learning media word walls is assisted by the smart app creator application; (c) Development, At the development stage, the researcher continued the design stage which had previously prepared all the necessary components and assembled them into one with the help of the smartapp creator application. At this development stage, validation and consultation with two material experts, two media experts, and five user assessments are carried out gradually to produce good learning media. The results of the review from experts are then used as guidelines for revising the product before entering the implementation stage; (d) Implementation, The web-based interactive learning media that has been created and revised will be implemented and tested to students on a large scale, namely 20 students, and involves a data collection process in the form of a student learning interest questionnaire to respond to the web-based interactive learning media word wall that has been developed can increase students' interest in learning, to find out the influence of learning media that has been developed can improve

student learning outcomes. At the implementation stage, it is hoped that students can master the material in order to achieve the learning goals that have been set; (e) Evaluation, At the evaluation stage of the ADDIE development model, it aims to assess the learning media products that have been developed, both in terms of appearance and content of the learning media, in accordance with the user. The results obtained from the evaluation stage make the reference as a product improvement to better suit the needs of users.

The media that has been developed must be tested first, the trial design of the web-based interactive learning media product word wall is divided into two stages, namely the validity test stage by media expert validators and material expert validators on media products that have been developed before implementation, this is to find out the feasibility of the product in terms of media appearance and function, and the next step is the product trial stage in the field. The instruments used in this study are observation sheets and interviews used at the analysis stage, media validity questionnaires that include the feasibility and suitability of the interactive learning media developed, and student learning interest questionnaires based on interest indicators, such as feelings of pleasure, student engagement, interest, and student attention.

The validation analysis of the web-based interactive learning media word wall used in this research and development uses a likert scale to test the feasibility and suitability of the material based on CP (Learning Outcomes). The Likert scale serves to collect evaluation data from validators after observing the developed learning media (Sudaryono, 2016)

Table 1. Eligibility Guidelines for using the Likert Scale

No	Score	Information
1	4	Strongly Agree
2	3	Agree
3	2	Disagree
4	1	Strongly disagree

After obtaining the assessment results from the experts, the next step is to find the average score obtained calculated using the following formula: $\mathbf{P = \frac{\sum x}{N} x\ 100\%}$, Information: P is Validity percentage, $\sum \mathbf{x}$ is the number of scores for each selected criterion and N is Maximum number of scores

Table 2. Validity Criteria For Validator Assessment Questionnaires

No	Validity Criteria	Validity Level
1	85,1%-100%	Highly Valid
2	70,1%-85%	Valid
3	50,1%-70%	Less Valid
4	01%-50%	Invalid

Table 3. Student Learning Interest Questionnaire Grid

Indicators of Interest	Question Indicators	Question Items	Total Grains
Feeling of Pleasure	Students views/opinions about science lessons on classification of living things	1, 2, 3	3
	Students feelings during the science lesson on the classification of living things	4, 5	2
	Student opinions about science teachers	6, 7	2
Student Engagement	Activeness during learning science classification material for living things	8, 9, 10	3
	Awareness of learning science at home	11, 12	2

Indicators of Interest	Question Indicators	Question Items	Total Grains
Interest	Student response to wordwall-based interactive learning media	13, 14	2
	Curiosity about science lessons classification material for living things	15, 16, 17	3
Student attention	Students attention during classroom learning	18, 19, 20	3

In this study, the researcher will conduct a prerequisite test, namely a data normality test before a hypothesis test is carried out, after the results of the data obtained are normal, then a hypothesis test is carried out. The hypothesis test used by the researcher is a paired sample t test. The normality test was carried out to find out whether the distribution of respondent data was normally distributed or not. In this study, the normality test uses the Lilifors test using SPSS software version 20.0 with the test criterion, namely if the probability value (sig.) is greater than $\alpha = 0.05$, then the zero hypothesis is accepted. Decision making criteria: If the significance value $\geq$ 0.05 then H0 is accepted meaning that the data is normally distributed. If the significance value $<$ 0.05, then H0 is rejected, meaning that the data is not normally distributed.

The paired sample t-Test is a test of two paired samples used to assess the effectiveness of the treatment, marked by a difference in the mean before and after the treatment. Paired samples were the same subjects, but underwent different treatments. The Paired Sample T-Test hypothesis test was carried out using IBM SPSS 22. The Paired Sample T-Test test model is used to analyze the development of web-based interactive learning media word wall on learning interests. The hypothesis in this study is as follows: Ho: There is no significant influence on the development of web-based interactive learning media word wall on living things classification material to increase learning interest. While H1: There is a significant influence on the development of web-based interactive learning media word wall on the classification material of living things to increase learning interest.

RESULT AND DISCUSSION

Wordwall web-based interactive learning media development procedure

The learning media developed in this study is a web-based interactive learning media word wall which is used to increase students' interest in learning, especially in the classification of living things. Based on the results of observations and interviews conducted by researchers with maple teachers, it was stated that the lack of variety of learning media so that students are easily saturated and can reduce students interest in learning, so the researcher developed a web-based interactive learning media word wall.

Abdul Haris and Nurhayati stated that it is important to foster interest in students in the learning process, because interest makes students more active in receiving lessons taught by teachers (Haris et al, 2014). Interest is also a key element in teaching and learning activities, without interest, the process will not run effectively and efficiently. According to Daryanto, media is used as a tool in education because it can help teachers deliver material from various subjects more effectively. This media has a great influence on the success or failure of material delivery by teachers. The use of appropriate teaching materials can grow and increase students' interest, and even improve their learning outcomes (Daryanto, 2013).

From this presentation, it can be said that the web-based interactive learning media wordwall on the classification material of living things is able to stimulate students to learn, so that students' interest in learning increases. This is evidenced by the results of the hypothesis test which states that the value of sig. (2-tailed) got a value of 0.000, where there was a significant difference between pre-interest and post-interest scores, where the post-interest score was

significantly higher than that of pre-interest. Students' interest in learning increased after the implementation of this word wall web-based learning media.

The process of developing web-based interactive learning media word wall uses the ADDIE development model which has five stages in the form of Analysis, Design, Development, Implementation and Evaluation. The analysis stage includes needs analysis, and curriculum analysis. The design stage includes the selection of the format and the initial design of the media. The development stage includes the results of validation by media experts, material experts, and user assessments. The implementation stage includes the results of student learning interest questionnaires. At the evaluation stage, the researcher evaluates and makes improvements based on suggestions from media experts and material experts.

Feasibility of web-based interactive learning media application word wall

Present the findings concisely while providing enough detail to support the conclusions. The analysis of the data obtained from the validation stage, including filling out questionnaire instruments and evaluating word wall web-based interactive learning media products has been completed.

Table 4. Analysis Results of Validation Recapitulation by Material Experts

Validator	Score	Highest score	Percentage (%)
I	52	60	86,6%
II	56	60	93,3%
		Average	90%

The results of the feasibility assessment of web-based interactive learning media word wall by material expert I were 86.6%, while the assessment by material expert II reached 93.3%. Thus, the average feasibility score of the web-based interactive learning media word wall is 90%, which meets the criteria of "Very Valid".

Table 5. Analysis Results of Validation Recapitulation by Media Experts

Validator	Score	Highest score	Percentage (%)
I	96	100	96%
II	94	100	94%
		Average	95%

The result of the assessment of the feasibility of web-based interactive learning media word wall by media expert I was 96%, while the assessment by media expert II reached 94%. Thus, the average feasibility score of the web-based interactive learning media word wall is 95%, which meets the criteria of "Very Valid"

Table 6. Analysis Results of Validation Recapitulation by Users

Validator	Score	Highest score	Percentage (%)
I	61	64	95,3%
II	60	64	93,75%
III	61	64	95,3%
IV	60	64	93,75%
V	58	64	90,6%
		Average	93,75%

The results of the assessment of the feasibility of the web-based interactive learning media word wall by user I were 95.3%, the assessment by user II reached 93.75%, the assessment by user III reached 95.3%, the assessment by user IV reached 93.75%, while the assessment by user reached 90.6%. Thus, the average feasibility score of the web-based interactive learning media word wall is 93.75%, which meets the criteria of "Very Valid"

Effectiveness of Word wall Web-Based Interactive Learning Media Application Development

The effectiveness of the development of web-based learning media word wall on the classification of living things material was obtained from filling out student learning interest questionnaires. The researcher used the Kolmogorov-Smirnov formula through the IBM SPSS Statistics 22 for Windows application to conduct a normality test on students' pre-interest and post-interest scores.

One-Sample Kolmogorov-Smirnov Test

		PRA1	POST1
N		20	20
Normal Parameters[a,b]	Mean	34.15	76.40
	Std. Deviation	5.547	2.998
Most Extreme Differences	Absolute	.139	.147
	Positive	.073	.129
	Negative	-.139	-.147
Test Statistic		.139	.147
Asymp. Sig. (2-tailed)		.200[c,d]	.200[c,d]

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. This is a lower bound of the true significance.

Figure 2. Normality Test Result

The calculation results show that the pre-interest value data has an Asymp value. Sig. (2-tailed) is 0.200, while the post-interest value also has an Asymp value. Sig. (2- tailed) of 0.200. In the Kolmogorov-Smirnov test, if the significance value (Asymp. Sig.) is greater than 0.05, then it can be concluded that the pre-interest and post-interest data are normally distributed.

Based on the results of the normality test that has been carried out, it is known that the pre-interest and post-interest data are normally distributed. Therefore, the data can be continued to the next stage, namely hypothesis testing analysis. To test the hypothesis in this study, the researcher used the Paired Sample T-Test. The purpose of the Paired Sample T-Test hypothesis test on students pre-interest and post-interest data is to determine whether there is a significant difference between the mean of pre-interest (before using media) and post-interest (after using media) scores.

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	PRA - POST	-39.550	9.070	2.028	-43.795	-35.305	-19.501	19	.000

Figure 3. T-test Result for Student Interest

The results of the Paired Sample T-Test hypothesis test obtained a sig. (2-tailed) 0.000. The data condition that meets the significance criteria is that the data obtained is less than 0.05. With this, it is stated that there is a significant influence between the use of word wall-based interactive learning media development on living creature classification materials on students' learning interests, so Ho is rejected and H1 is accepted.

CONCLUSION

The conclusion consists of a summary of the article. The web-based interactive learning media word wall was developed using the ADDIE development method which includes five stages, namely Analysis, Design, Development, Implementation and Evaluation. Based on the

results of the development that has been carried out, it can be concluded that word wall-based learning media is a learning medium that can increase students' interest in learning. The web-based interactive learning media developed by the word wall received a valid category and is suitable for use as one of the interactive learning media on the classification of living things. This is based on the assessment from material experts who get an average of 90% with a very valid category, while the assessment from media experts gets an average result of 95% with a very valid category, and the results from user assessments get an average of 93.75% with a very valid category. The assessment of student learning interest questionnaire on the development of web-based interactive learning media word wall of living creature classification material stated that the results of pre-interest and post-interest data were normally distributed, this was evidenced by the normality test of getting a value of 0.200 on pre-interest and post-interest that were more than 0.05. While the results of the hypothesis test stated that there was a significant influence between the use of word wall-based interactive learning media development on living creature classification materials on students learning interests, this was evidenced by the hypothesis test that got a score of 0.00 in pre-interest and post-interest that were less than 0.05, then Who was rejected and H1 was accepted.

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