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THE EFFECT OF ARTICULATE STORYLINE *BASED INTERACTIVE MULTIMEDIA ON* 5^{th} *GRADE STUDENT IN THEMATIC LEARNING OUTCOMES*

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ABSTRACT
This research is a quasi-experimental study that aims to describe the use of interactive multimedia based on articulate storylines, to determine the learning outcomes of class V students, and to determine the effect of interactive multimedia based on articulate storylines on thematic learning outcomes of class V students UPT SPF SD Inpres Perumnas Antang III Manggala District, Makassar City. The type of research conducted in this research is quantitative experimental with a nonequivalent control group design, with pretest, treatment, and posttest stages. The population and sample in this study were students of class V UPT SPF SD Inpres Perumnas Antang III, Manggala District, Makassar City with a total of 94 students and determined by non-probability sampling technique with a sample of 62 students. Data collection techniques used are learning outcomes tests, observation sheets and documentation. Data were analyzed using descriptive and inferential analysis. The results of the descriptive analysis show that the use of interactive multimedia based on articulate storylines on teacher observation sheets has increased from the first meeting in the good category and the second meeting in the very good category. The application of interactive multimedia based on articulate storylines on student observation sheets also increased from the first meeting in the good category and the second meeting with the very good category. The results of the pretest in the experimental class showed a poor category and the posttest results showed a good category. Meanwhile, the results of the control class pretest showed a poor category and the posttest results showed a poor category. Then based on the results of inferential statistical analysis, P = 0.000 is smaller than = 0.05. It can be concluded that there is an influence of interactive multimedia based on articulate storylines on the thematic learning outcomes of class V UPT SPF SD Inpres Perumnas Antang III District Manggala Makassar City.

INTRODUCTION

The development of the era of technology 4.0 has made a tremendous impact on human life, one of the fields that has an influence on technological development is the field of education. Involving technology into learning results in making it easier for students to get any information that has no boundaries. The use of technology in learning has also been regulated in the Regulation of the Minister of Education and Culture Number 65 of 2013 concerning the principles that must be used as the basis for implementing the teaching and

learning process in the classroom. One of the uses is to increase the efficiency and effectiveness of the learning itself. The use of technology must be realized not only by schools, but also by teachers as subjects who play an important role in guiding the learning process. Teachers must be able to support student teaching and learning activities by using technology-based facilities available in schools. Teachers need to be able to develop and also create an idea for technology-based learning media and use the available tools.

Learning media is a tool to communicate messages to students, and learning media is also a teacher's tool to assist teachers in understanding learning materials to students. Abdullah (2016) stated that the use of learning is closely related to improving the quality of the desired learning. It is expected that teachers use learning media to create a more meaningful learning experience. One type of learning media is multimedia. Multimedia itself is a learning media that combines text, audio, graphics, animation, and sound. Interactive multimedia is one type of multimedia that is currently developing. According to Miftah (2018) stated that learning media as message transmission, sound, and design in the same period described as an intuitive PC-based correspondence framework that can create, store, present and access data as messages, illustrations, sound, video, or live broadcasts, enabling storage, handling, and introducing back sounds and recordings in a computerized design.

According to Prior Yanto (2019) interactive media are learning media whose use can link clients/users with learning media by influencing each other and giving each other activities and responses in delivering learning material. Therefore, it can be said that the media is obtained from educators/teachers to students who in their use establish collaboration between students and learning media in an interconnected manner and provide the same activities and responses to one another. From the above understanding, it can be concluded that interactive multimedia is one of the multimedia that can help teachers / teachers in providing material or delivering interactive material which can increase the efficiency and effectiveness of learning.

Based on the results of observations on January 19, 2022 with Mrs. Azisah Hamusta, S.Pd. one of the fifth grade teachers of UPT SPF SD Inpres Perumnas Antang III through interviews that student learning outcomes in thematic learning are still below the minimum completeness criteria (KKM) 75. This is evident through student learning outcomes in thematic learning on daily assessments that are still relatively low, namely ≤ 50 % of students who achieved the KKM score of 75. One of the factors that caused the low learning outcomes was the use of media used by teachers and the activeness of students in participating in learning. So far, teachers use simple or less varied media and focus on the teacher. Teachers use textbooks, videos taken from YouTube or use less interactive PowerPoint, which causes students to be passive, easily bored and unable to catch the message conveyed by the teacher in learning well so that learning is less meaningful. And in online learning, teachers rely on the WhatsApp application and occasionally take advantage of the zoom meeting application. Therefore, learning like this makes students less active in the teaching and learning process in the classroom and affects student learning outcomes. Not only that, there are factors that affect the level of student desire to learn, which comes from the influence of online learning that was previously done at home. As many

as 90% of fifth grade students have gadgets. Most of the students use gadgets to play games so that there is very little access to learning due to the attractive appearance of the game which makes students interested in accessing it continuously.

Based on the problems above, it is necessary to apply learning media whose presentation is more attractive and interactive with visual displays such as games in general and can involve students directly to use them. One of the software that can be used is to make good interactive multimedia, namely articulate storyline.

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> Articulate storyline is a program that is supported by simple smart brain ware with interactive tutorial procedures through templates that can be published online or offline so that it is easier for users to change them in the form of personal web, CD, word processing, and Learning Management System (LMS). (Rohmah & Bukhori, 2020, p.173)

The results of research conducted by Mahmud (2020) show that the use of interactive multimedia products for traditional Indonesian homes using an articulate storyline in social studies subjects is stated to be very practical or feasible in terms of media user responses by class IV B SD Telkom Makassar where the value obtained is 78, 27%. Meanwhile, the results of previous research conducted by Mudeing Jais & Ulil Amri (2021) showed that the application of articulate storyline interactive learning media in science lessons had an effect on student learning outcomes at SDN 2 Gantarang Keke, Bantaeng Regency.

Based on the problem and based on the previous research, the researcher will conduct a study entitled "The Effect of Articulate Storyline-Based Interactive Multimedia on Learning Outcomes of Class V Students in UPT SPF Thematic Learning"

METHOD

The type of research used in this research is experimental research with a quantitative approach. The research design used in this study is a Quasi Experimental research design. This research uses a nonequivalent control group design type. The research design can be described as follows:

Table 1. Research Design Draft

Pretest	Treatment	Posttest
O_1	X	O_2
O_3	-	O_4

Source: (Sugiyono, 2017)

Description:

O_1 = The value of the initial ability (pretest) of the experimental class

O_2 = The final ability score (posttest) for the experimental class

O_3 = Initial ability score (pretest) for control class

O_4 = Final ability score (posttest) for control class

X = Treatment without using interactive multimedia learning media articulate storyline.

- = Treatment without using interactive multimedia based on articulate storylines

The population in this study were all fifth grade students at UPT SPF SD Inpres Perumnas Antang III, Manggala District, Makassar City which consisted of 3 classes, namely class VA collecting 32 students, VB opening 31 students and VC collecting 31 students. The sampling technique used by the researcher is using a non-probability sampling technique. Non-probability sampling is a sampling technique that does not provide equal opportunities/opportunities for each element or member. The sampling technique used is a purposive stake. By using purposive sampling, the sample is determined intentionally by the researcher based on certain criteria or considerations such as the nature or characteristics that focus on the research objectives, where classes that have relatively the same initial ability are chosen not randomly. The number of samples in this study were 62 students, Class VB was the control class and VC was the experimental class.

The data collection technique in this study was an observation technique with an observation sheet as an instrument to measure the description of the application of multimedia based on an articulation storyline and a test technique with a test sheet as an instrument to measure student learning outcomes. Before the instrument is used, it must be validated by an expert in the field.

The data analysis technique in this study is in the form of descriptive analysis, which serves to describe or provide an overview of the object under study through sample or population data as it is without analyzing and making applicable conclusions. the prerequisite analysis test is normality and homogeneity test and the final analysis (hypothesis testing) is the analysis of the Independent Sample t-test. Independent Sample t-test. The test criteria if the probability value is greater than the significance level of 0.05 then Ho is accepted and Ha is rejected. Then the Normalized Gain Calculation test was conducted to compare the increase in students' higher order thinking skills between the experimental and control groups.

RESULTS AND DISCUSSION

This research was conducted with 4 meetings in the experimental class and 4 meetings in the control class. The research results obtained will be analyzed with descriptive statistics and inferential statistics using SPSS Version 25. The results of the research are described as follows:

Table 2 Observation Result of Articulate Storyline Interactive Multimedia Implementation

Teacher observation

Description	Treatment 1	Treatment 2

Earning score/ Maximum score	13/15	14/15
Percentage	86,66%	93,00%
Category	Effective	Very Effective

Student observation

Description	Treatment 1	Treatment 2
Earning score/ Maximum score	12/15	14/15
Percentage	80%	93,00%
Category	Effective	Very Effective

Based on the data in table 2, observations were made from two aspects, namely teacher and student observations. The data shows that the application of interactive multimedia based on articulate storylines on teacher observation sheets has increased, namely the first meeting with a percentage of 86.66% which is included in the good category and the second meeting with a percentage of 93.00% is included in the very good category. The data shows that the application of interactive multimedia based on articulate storylines on student observation sheets also experienced an increase, namely the first meeting with a percentage of 80.00% which was included in the good category and the second meeting with a percentage of 93.00% which was included in the very good category.

Student Learning Outcomes

The pretest of the experimental group and the control group was carried out to find out and get an initial picture of students' higher order thinking skills before giving treatment (treatment). The description of the pretest results of the experimental group students can be seen in the table below:

Table 3 Description of Student Pretest Results

Descriptive statistics	Statistical Value	
	Experiment	Control
Number of Samples	31	31
Lowest Value	20	20
The highest score	64	56
Mean	43,32	40,19
Standard Deviation	8,433	10.861
Median	44	40
Modus	36	36

Table 3 above, shows the pretest statistics of the experimental class students' learning outcomes, which amounted to 31 students, with the lowest score obtained by the experimental class students was a score of 20, the highest score obtained by the experimental class students was a score of 64, it means that the highest score

for the students' pretest at the experimental class has not reached the KKM value determined by the school, which is 75, while the median value is 44, then most students in the experimental class get a pretest score of 36, this can be seen from the acquisition of the mode value of 36 and the average value (mean). is 42.32 which means that the category of student learning outcomes is in the very poor category. Student learning outcomes are then grouped into four categories with frequency and percentage scores. And and the control class pretest showed the learning outcomes of the control class students, which amounted to 31 students, with the lowest score obtained by the experimental class students was a value of 20. The highest score obtained by the control class students was 56, it means that the highest score for the pretest students in the control class have not reached the KKM value determined by the school, namely the value of 75. While the median value is 40, then most students in the control class get a pretest score of 36, this can be seen from the acquisition of the mode value which is 36 and the average value (mean) in the class control is 40.19 which means the category of student learning outcomes is in the very poor category. Student learning outcomes are then grouped into four categories with frequency and percentage scores.

Table 4. Description of Student Post Results

Descriptive statistics	Statistical Value	
	Experiment	Control
Number of Samples	31	31
Lowest Value	56	56
The highest score	92	68
Mean	75,10	53,55
Standard Deviation	9.562	8.683
Median	76	56
Modus	76	60

Table 4 above, shows the posttest statistics on student learning outcomes in the experimental class conducted by 31 students, with the lowest score obtained by the experimental class students being 56. The highest score obtained by the experimental class students was 92, while the median value was 76. Then most students the experimental class got a posttest score of 76, this can be seen from the acquisition of a mode score of 76. The average value (mean) is 75.10 which means that the category of student learning outcomes is in the good category, it means that the posttest score of students in the class The experiment reached the KKM score determined by the school, namely 75. Student learning outcomes then progressed into four categories with frequency and percentage scores. while the posttest statistics for the control class students' learning outcomes were 31 students, with the lowest score obtained by the control class students was 36. The highest score obtained by the control class students was 68, while the median score was 56. Then most students in the control class got a score the posttest result is 60, this can be seen from the acquisition of the mode score, which is 60.

The average value (mean) is 53.55 which means the category of student learning outcomes is in the very poor category, it means that the posttest score of students in the control class has not reached the The KKM determined by the school is a score of 75. Student learning outcomes are then grouped into four categories with frequency and percentage scores.

Table 5. Comparison of the Average Value of Class Pretest and Posttest Results Experiment and Control

Class	*Pretest*	*Posttest*
Eksperimen	42,32 Very Less	75,10 Effective
Kontrol	40,19 Very Less	53,55 Very Less

From the results of the experimental class pretest, the average score (mean) was 42.32 and the posttest value was 75.10. Meanwhile, at the pretest the control class obtained an average value (mean) of 40.19, while the posttest value of 53.55. From the measurement results, it can be concluded that a significant change in value occurred in the experimental class from the very poor category to the good category. While in the control class there was no significant change where the average value (mean) of the pretest and posttest remained in the very poor category.

The effect of using articulate storyline-based interactive multimedia on student learning outcomes

Whether or not there is an effect of applying the SAVI model to students can be seen from the results of inferential statistical analysis, namely hypothesis testing. This analysis is used to analyze sample data, where the results apply in general or generalizations (applies to the population). Before testing the hypothesis using the independent sample t test, what must be done first is to test the assumptions of data analysis. The data analysis assumption test consisted of normality test and homogeneity test. data. The results of the data normality test are presented in the table 6:

Table 6. Normality test

Data	Probability Value	Description
Pretest Experimental Group	0,142	0,142 > 0,05 = normal
Pretest Control Group	0,151	0,151 > 0,05 = normal
Posttest Experimental Group	0,151	0,151 > 0,05 = normal
Posttest Control Group	0,160	0,160 > 0,05 = normal

Based on table 6, it can be seen that the results of the pretest and posttest both for the experimental class and the control class are normally distributed. After the normality test for the four groups was carried out, the probability value was greater than 0.05. This shows that the distribution of data in the experimental class and control class that has carried out the normality test is in the normal distribution category. The data can be said that the results of the pretest and posttest normality tests of the experimental class and control class obtained data that were normally distributed so that the data could be analyzed with a paired t-test sample.

Table 8. Homogeneity Test

Data	Probabilities Value	Description
Experiment and Control Group Pretest	0,176	0,176 > 0,05 = homogenous
Experiment and Control Group Posttest	0,872	0,872 > 0,05 = homogenous

Based on the data in table 8, it shows that the results of the homogeneity test of the experimental group and control group and the posttest experimental group and control group are said to be homogeneous because the probability value is > 0.05 and can be continued for hypothesis testing.

The hypothesis test used in this study, namely the independent sample t-test. The independent sample t-test aims to determine whether there is a difference in the learning outcomes of the two samples, namely the experimental class pretest and control class pretest, as well as the experimental class posttest and control class posttest.

Table 9. Test Results Pretest Independent Sample t-Test

Data	t	df	*Sig* (2-tailed)	Description
Pretest experimental group and pretest control group	0,698	60	0,488	0,698 > 0,05 = No difference

The criteria for the test are, Ho is accepted if the value of sig (2-tailed) > 0.05 and Ho is rejected if the value of sig (2-tailed) < 0.05. Based on the table above, it shows that the value of sig (2-tailed) is 0.488. Then the value of sig (2-tailed) > 0.05, it means that there is no difference between the pretest value of the experimental class and the pretest value of the control class before the treatment is given. The t_{count} value from the results of this test is 0.698. The value of t_{table} whose significance level = 0.05 and the value of df = 60 is 2,000. Because t_{count} is smaller than t_{table}, it can be concluded that there is no significant difference.

Then analyzed by testing the posttest mean of the experimental group and the posttest of the control group. The data is said to have a difference if the probability value is <0.05. The following table shows the results of the Independent Sample t-Test between the posttest experimental group and the control group:

Table 10. Test Results Pretest Independent Sample t-Test

Data	t	df	*Sig* (2-tailed)	Description
Experimental group posttest and control group posttest	9,289	60	0,000	0,000 < 0,05 = There is a difference

The criteria for the test are, Ho is accepted if the value of sig (2-tailed) > 0.05 and Ho is rejected if the value of sig (2-tailed) < 0.05. Based on the table above, it shows that the value of sig (2-tailed) is 0.000. Then the value of sig (2-tailed) <0.05, it means that there is a difference between the posttest value of the experimental class and the posttest value of the control class after being given treatment. The t_{count} value from the results of this test is 9,289. The value of t_{table} whose significance level = 0.05 and the value of df = 60 is 2,000. Because t_{count} is greater than t_{table}, it can be said that there is a significant difference in the experimental class posttest and posttest after giving treatment in the form of storyline-based articulation learning media. So from this analysis it shows that the hypothesis in this study is the influence of storyline-based interactive multimedia on student learning outcomes in the UPT SPF SD Inpres Class. Perumnas Antang III, Manggala District, Makassar City.

Discussion

Overview of Articulate Storyline-Based Interactive Multimedia on Thematic Learning for Class V . Students

This research was conducted on fifth grade students of UPT SPF SD Inpres Perumnas Antang III. The research subjects consisted of two groups, namely the experimental and control groups. The learning process in the experimental group used interactive multimedia articulate storyline while in the control group learning without using interactive multimedia articulate storyline. The learning process lasted for 4 meetings, namely, the first meeting by conducting a pretest, the second meeting presenting learning materials using interactive multimedia articulate storylines, the third meeting further presenting material using interactive multimedia articulate storylines, the fourth meeting giving posttests.

At the first meeting of the learning process using interactive multimedia articulate storyline, the teacher's observation sheet was classified as good with a percentage of 86.66%, because several aspects of the assessment had not been carried out optimally by researchers. The second friend, the learning process is classified as very good with a percentage of 93.00%. On the observation sheet students are also classified as good at the first meeting with a percentage of 80.00% and at the second meeting they are in the very good category with a percentage of 93.00%.

By using interactive multimedia articulate storyline, it will attract the attention of students more, be able to cope with different student learning styles and be able to understand an event without seeing the incident directly. Based on this description, it can be concluded that the learning process by using interactive multimedia articulate storyline, each meeting has increased. This is in accordance with the opinion Setyaningsih & Wahyudi (2020) which states that, articulate storyline interactive learning media which is made like a game, will involve curiosity, excitement, and challenge for students so that they will not feel bored in participating in learning and not feel burdened when studying the material.

Learning Outcomes of Class V . Students

In this study, descriptive statistical analysis was conducted to determine student learning outcomes in the experimental class and control class. In the pretest experimental class and control class, students' learning outcomes before giving treatment were in the very poor category with an average score of 42.32 in the experimental class and 40.19 in the control class. This shows that the two classes have no different initial abilities before being given treatment. Then, after being given treatment in the form of the use of interactive multimedia articulate storylines in the posttest the experimental class experienced an increase in learning outcomes, namely in the good category with an average value of 75.10. Furthermore, for the control class after being given treatment without using interactive multimedia articulate storyline, it also continued to experience an increase, only that the increase was not comparable to the experimental class that used interactive

multimedia articulate storyline in the learning process. Category of learning outcomes Control class students after being given treatment are still in the very poor category, it's just that there is an increase from the average value of 53.55. This is supported by the opinion of Hosrum (Hazar, 2018) which states that the use of articulate storyline-based learning media which contains digital-based game content involving curiosity, challenge, relaxation and the effect of excitement can improve student learning outcomes.

The Effect of Using Articulate Storyline-Based Interactive Multimedia on Learning Outcomes of Class V Students

In the inferential statistical analysis, the assumption test is carried out first, namely the normality test and homogeneity test. The normality test of the pretest and posttest results in the experimental class and the control class used the Kolmogorov-Smirnov test with results showing that all data were normally distributed. After that, the homogeneity test was carried out between the pretest of the experimental class and the control class, as well as the posttest of the experimental class and control class using Levine's test with results showing that the two data groups were declared homogeneous. The next stage, namely hypothesis testing. Hypothesis testing with inferential statistics shows that there are differences in learning outcomes between the experimental class which uses the treatment in the form of the use of interactive multimedia articulate storyline in the learning process and the control class that does not use interactive multimedia articulate storyline in the learning process. The results of hypothesis testing were carried out by independent sample t-test with the help of the IBM SPSS Statistics version 25 program, the probability value was 0.000 < 0.05. So Ho was rejected, Ha was accepted. This is because there is an effect of using interactive multimedia based on articulate storylines on the learning outcomes of class V students in the thematic learning of UPT SPF SD Inpres Perumnas Antang III, Manggala District, Makassar City. This is evidenced by that the use of interactive multimedia based on articulate storylines in the experimental group has increased in learning outcomes. This statement is in accordance with the research of Mudeing Jais & Ulil Amri (2021) which states that the use of articulate storyline-based interactive learning media has an impact on student learning outcomes.

CONCLUSION

An overview of the use of interactive multimedia based on articulate storylines in the thematic learning process which lasted for two meetings and observations using student and teacher observations. The results showed that the process in the experimental group went very well because each meeting experienced an increase. Student learning outcomes in the experimental class increased more than student learning outcomes in the control class. This is evidenced by the results of the experimental class pretest showing a very poor category and the posttest value showing a good category. Meanwhile, in the pretest and posttest, the control class was in the very poor category. There is an effect of using interactive multimedia based on articulate storylines, this is evidenced by the significant difference in learning outcomes between classes experiments using interactive

multimedia based on articulate storylines. This is evidenced by the value of sig 2 tailed < 0.05. articulate storyline-based interactive and control classes without using articulate storyline-based interactive multimedia. This is evidenced by the value of sig 2 tailed < 0.05.

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