Jurnal Theorems (*The Original Reasearch Of Mathematics*)
Volume 9, Nomor 1, Juli 2024
URL: http://ejournal.unma.ac.id/index.php/th

e-ISSN: 2528-102X
p-ISSN: 2541-4321

THE INFLUENCE OF CLOCK MEDIA ON INTEREST IN LEARNING MATHEMATICS TIME AND CLOCK MATERIAL IN CLASS II STATE PRIMARY SCHOOL 03 JATEN ACADEMIC YEAR 2023/2024

Niswatul Chasanah [1], Koko Prasetyo[2], Meidawati Suswandari[3]
[1]Universitas Veteran Bangun Nusantara Sukoharjo; niswatulkarunia0112@gmail.com
[2]Universitas Veteran Bangun Nusantara Sukoharjo; kokoprst@gmail.com
[3]Universitas Veteran Bangun Nusantara Sukoharjo; meidawatisuswandari@gmail.com

Corresponding Author:*
Niswatul Chasanah
Universitas Veteran Bangun Nusantara Sukoharjo
niswatulkarunia0112@gamil.com
Contact Person: 0895-1817-6099

Article Info:
Received 2024-05-25
Revised 2024-06-09
Accepted 2024-06-16

How to Cite:
Chasanah, N. (2024). The Influence Of Clock Media On Interest In Learning Mathematics Time And Clock Material In Class Ii State Primary School 03 Jaten Academic Year 2023/2024. *Jurnal Theorems (The Original Research of Mathematics*, 9(1), 123-133.

ABSTRACT

Mathematics is the subject that experiences the most problems in the learning process at school and is considered the most difficult by students. This can be seen when the learning process takes place, the lack of student interest in learning mathematics. Efforts that can be made to increase interest in learning mathematics are with social media. This research aims to determine the influence of clock media on interest in learning mathematics regarding time and clocks. The type of research used was quantitative with a pre-experimental method, with a one group pretest posttest design, the sampling technique used purposive sampling by taking samples only in classes 2A and 2C with a total of 57 students. Data collection techniques include questionnaires and documentation. The data analysis techniques used are normality test, homogeneity test, and hypothesis test. Based on the calculation results, it can be concluded that there is an influence of clock media on students' learning interest in learning mathematics regarding clocks and time.

Keywords: Clock Media, Interest in Learning, Mathematics

INTRODUCTION

Education is a process that cannot be separated from humans who are the subject and object of educational efforts themselves, because it includes 3 basic aspects of the human self. Education is very important for humans because education can directly encourage changes in the quality of cognitive, affective and psychomotor abilities. This has been written in the National Education System (Law of the Republic of Indonesia Number 20 concerning the National Education System, 2003), namely as follows: National education functions to develop abilities and shape the nation's character and civilization which is useful in order to educate the nation's life, aiming for the development of students. to become a human being who believes and is devoted to God Almighty, has noble character, is healthy, knowledgeable, capable, creative, independent, and becomes a quality human being so that he is able to answer the challenges of the ever-changing times, especially changes in technological developments.

e-ISSN: 2528-102X
p-ISSN: 2541-4321

Education is the most striking change in technological development. Technological developments have changed activities in life, including in the field of education.

The development of information and communication technology in the 4.0 era is very rapid, of course it also has an influence on the world of education, especially in the use of media for learning (Takdir in Azzahra & Pramudiani, 2022). The use of learning media can be applied in various classroom lessons. One of them is in mathematics lessons, mathematics is known as a difficult subject by many students, this is because the basic characteristics of mathematics itself are abstract, and have interconnected concepts and principles (Wiryanto, 2020). The influence of learning media in the teaching and learning process can also arouse new desires and interests for students, and can increase students' understanding of learning. Observations that researchers made during the mathematics learning process regarding time and clocks showed that the learning process was often teacher-centred, making students less actively involved in learning mathematics. Then, the use of learning media in explaining mathematics material is still simple, such as through pictures in books which do not attract the focus of attention when the teacher explains the material does not last long and students are also less able to connect the time and clock material with problem objects that exist in everyday life. -day. From this, it was revealed that there was a lack of student interest in learning mathematics.

Students' interest in learning is something that is important in the smooth teaching and learning process. Students who have high interest in learning in the learning process can support the teaching and learning process to improve, and conversely, if students have low interest in learning, the quality of learning will decrease and this will affect learning outcomes. In this case, to increase students' interest in learning, teachers use new breakthroughs, namely by using media so that students' interest in learning in class 2 of SD Negeri 03 Jaten increases or changes. The problem in this research is that students' interest in learning in mathematics subjects regarding hours and time is still low because the learning media is incomplete, resulting in students not having interest in learning so that the impact of students' learning on learning is still low. Students who are interested in learning activities will try harder than students who are less interested. To overcome the low interest in learning mathematics in grade 2, the researcher will use clocks made of colored cardboard during the mathematics teaching and learning process regarding time and clocks. The clock media that researchers will use is a more detailed media that shows complete minutes and hours starting from 1 am (01.00) to 12 pm (00.00). This makes children understand the material presented by the teacher better and makes children enthusiastic, interested and enthusiastic about learning mathematics. With this clock media, children can use it directly by taking turns with other friends who want to try it.

e-ISSN: 2528-102X
p-ISSN: 2541-4321

Figure 1. Clock Media

Media is closely related to the learning process. According to Ega Rima Wati in Rosalinda, (2020) that, Media is a tool that convinces messages as well as tools to help teachers convey messages so that they are easily understood by students. Media is used as an easy communication tool to convey messages from the audience to the listeners. With the aim of making it easier to understand the message that has been conveyed. Due to the lack of interest, the researcher used clock media to increase interest because with clock media that is uniquely made in the shape of a sunflower and an attractive color combination, it makes students more enthusiastic, interested, and students are more creative when participating in mathematics learning. A clock is a tool for measuring time for a day and a night; certain moment; time and moment. From this definition, it can be concluded that clock media is a medium that can be made using cardboard or plywood, there is also clock media made from melamine which has a circular shape resembling a clock. This clock media is used to explain time and clock material so that students can understand and understand more about time and clock material. Apart from that, this clock media really helps teachers to explain time and clock material so that students are more enthusiastic about learning and increase students' interest in learning mathematics. This research is also in line with previous research, namely research by Linda Indiyarti Putri & Abdul Basir (2020), that this research also succeeded in making students' interest better developed in participating in mathematics learning activities. Students' attention to learning and students' understanding of the subject matter were much better than students in the control class. In other words, the use of corner clock props influences students' mathematics learning outcomes.

Interest in learning is an interest, a sense of enjoyment, student involvement and student attention to a lesson which then encourages individuals to study and pursue that lesson. In this research, the researcher taught the mathematics subject of time and clocks. According to (Prasasty & Utaminingtyas, 2020) the essence of mathematics learning is a teaching and learning process that contains two types of activities that cannot be separated. The Mathematics learning

e-ISSN: 2528-102X
p-ISSN: 2541-4321

process can be implemented as an activity when there is interaction between students and teachers, students and students, and between students and the environment while Mathematics learning is taking place. The presence of clock and time material invites students to learn to determine and read hours or times, write down hours, and the length of time or hours. You can see a summary of the mathematics of time and clocks below:

1. Reading and Determining the Hours

Shalom is never late for school. He always followed his lessons diligently. Not long after, break time arrived. Shalom and his friends play in the school yard.

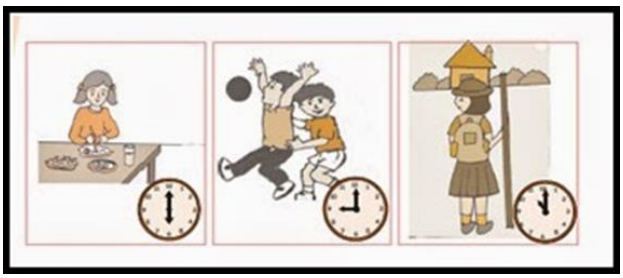

Figure 2. Children's activities

Look at the picture above!

a. What time does Shalom have breakfast?
b. What time is Shalom school break time?
c. What time does Shalom come home from school?

Now, let's look at the clock image below. Example question:

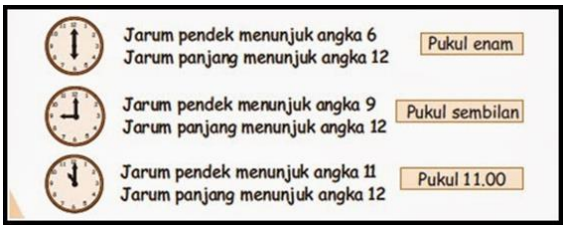

Figure 3. Questions about clocks

2. Write down the time

Faro starts studying at 7 p.m. He does all the homework given by the teacher. Faro also repeated the lessons he had been given at school. Look at the clock image below. What numbers do you see?

Figure 4. Clock

e-ISSN: 2528-102X
p-ISSN: 2541-4321

There are numbers 1 to 12, there are 24 hours a day and a night. So in a day, the clock turns completely 2 times. After 12.00 noon, the time writing does not return to 01.00. Writing continues from 13.00 to 24.00. 24.00 is the same as 12 at night. Ali starts studying at 7 pm. 7 pm is also called 19.00.

3. Length of Time

Shalom is very happy with Scout activities. In the afternoon Shalom returned to school to take part in Scout activities. When I left home, the clock showed 15.00.

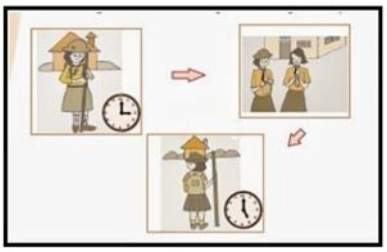

Figure 5. Children's activities

Finally, the scouting activities were finished. At that time the clock showed 17.00. Shalom go home immediately. Look at the short needle image above. When Shalom left, the short hand of the clock pointed to number 3. When Shalom returned home, the short hand pointed to number 6. From number 3 to number 5 there were 2 steps. So Ami took part in Scouting activities for 2 hours. Easy, right. Now try to count!

a. How long do you study at school every day?
b. How long do you study at home every day?
c. How long do you sleep every day?

This research is also in line with previous research, namely research by Linda Indiyarti Putri & Abdul Basir (2020) that this research also succeeded in making students' interest better developed in participating in mathematics learning activities. The similarity with researchers is that they both use clock media in learning. mathematics, while the difference lies in the material discussed. This research discusses the measurement of angles, while the researcher discusses time and clocks. Research from Izzatul Lailah Wijayanti & Budiyono (2015) shows that the angle clock media has a significant effect on the learning outcomes of angle measurement material for grade 5 students. The similarity with the researcher is that they both use clock media, while the difference lies in the class taught by the researcher, namely grade 2, whereas This research is class 5. As for research from Dyah Rohmawati, Reza Syehma Bahtiar, Tri Dayat (2019), the results of research in elementary schools can be concluded that the use of time board media in learning time calculations for class III elementary school students in the 2017-2018 academic year is effective. , the similarity in the research above with the research conducted by researchers is that they both use clock media with measurement material and the difference lies in the subjects of this research being in class III while the researchers are in class II. As

e-ISSN: 2528-102X
p-ISSN: 2541-4321

for research from Novita Dewi (2021), learning using angle clock media to improve student learning outcomes in angle measurement material is very good for implementation at MIN 2 Aceh Jaya because it can improve student learning outcomes. carried out by researchers, namely both using clock media, while the difference lies in the mathematics material. This research discusses angle measurement material in class III, while the researcher will discuss time and clock material in class II.

RESEARCH METHODS

This research is quantitative research and the sampling technique in this research uses a purposive sampling technique which determines the number of samples to be studied, namely class 2A and class 2C samples, totaling 57 students. The type of research used is Pre-Experimental according to Sugiyono (2016:74), why can it be said to be pre-experimental, because this is not yet an experiment that has been carried out seriously and there are still external variables that influence the formation of the dependent variable. So the experimental results which are the dependent variables are not solely influenced by the independent variables. This happens because there are no control variables and the sample was not chosen randomly. With the one group pretest posttest design according to Sugiyono, (2016), the implementation of this design before being given treatment, the sample will be given a pretest in the control class first, after being treated the sample will be given a posttest in the experimental class. Can be seen in the image below:

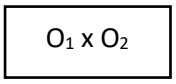

Figure 6. One Group Pretest Posttest Design

The data collection technique is a test in the form of a questionnaire about interest in learning mathematics, totaling 25 questions. The assessment uses a Likert scale, where Strongly Agree (SS) has a value of 4, Agree (S) has a value of 3, Disagree (TS) has a value of 2, Strongly Disagree (STS) has a value of 1.

No.	Pernyataan	Nilai
1	Sangat Setuju (SS)	4
2	Setuju (S)	3
3	Tidak Setuju (TS)	2
4	Sangat Tidak Setuju (STS)	1

Figure 7. Likert scale

The data results were tested using the Kolmogorov Smirnov normality test to determine whether the research results were normal or not, then tested using the one-way ANOVA homogeneity test to determine whether the data were homogeneous or not. Then, to test the hypothesis, use the paired

e-ISSN: 2528-102X
p-ISSN: 2541-4321

sample t test to determine whether or not the use of clock media has an influence on students' interest in learning mathematics.

Data Analysis Technique

The data analysis technique used is the normality test to determine whether the collected research data is normal or not, to test the normality of the data using the Kolmogorov Smirnov test. Then it was tested using a homogeneity test to find out whether the sample was homogeneous or not, the homogeneity test used the one-way anova test. Next, test the hypothesis on the basis of decision making: Ho is accepted if tcount < ttable and Ho is rejected if tcount > ttable, ttable is taken from the t distribution table with df = n-1 and α = 5%.

RESEARCH RESULT

The results of the pretest carried out in the control class were 28 students in class 2C of SD Negeri 03 Jaten before using the jam media, students who got the lowest questionnaire score of 44 and the highest score of 65 with an average score of 54.03. The results of the student posttest carried out in the experimental class were 29 students in class 2A of SD Negeri 03 Jaten after using the clock media, students who got the lowest questionnaire score of 68 and the highest score of 85 with an average of 75.10. From the results of these calculations it can be concluded that there is an increase in students' interest in learning mathematics and a significant difference between the pretest in the control class and the posttest in the experimental class. It can be seen in table 1 as follows:

Table 1. Students' Interest in Learning Mathematics

	Mean	Standar Deviasi	Minat Belajar Siswa	
Kontrol	54,03	5,315	Nilai Terendah	44
			Nilai Tertinggi	65
Eksperimen	75,10	4,973	Nilai Terendah	68
			Nilai Tertinggi	85

The results of the normality test using the Kolomogorov Smirnov test obtained a pretest significant value of 0.200 and a posttest significant value of 0.200, so the pretest significant value was 0.200 > 0.05 and the posttest significant value was 0.200 > 0.05 so that both data could be said to be normally distributed. It can be seen in table 2 as follows:

e-ISSN: 2528-102X
p-ISSN: 2541-4321

Table 2. Kolmogorov Smirnov Normality Test Results

One-Sample Kolmogorov-Smirnov Test

		kontrol	eksperimen
N		28	29
Normal Parameters[a]	Mean	54.04	75.10
	Std. Deviation	5.316	4.974
Most Extreme Differences	Absolute	.107	.113
	Positive	.107	.113
	Negative	-.101	-.077
Test Statistic		.107	.113
Asymp. Sig. (2-tailed)		.200	.200

The Test of Homogeneity calculation aims to find out whether the sample used is homogeneous. If the sample is not homogeneous then the one way anova test cannot be carried out. This calculation produces a sig value of 0.986 > 0.05, so the decision taken is a homogeneous sample. The homogeneity test results can be seen in table 3 as follows:

Table 3. One-Way Anova Homogeneity Test

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
minat	.000	1	55	.986

ANOVA

minat

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6322.907	1	6322.907	238.903	.000
Within Groups	1455.654	55	26.466		
Total	7778.561	56			

It can be concluded that the sig value of the test results is 0.000 < 0.05, then H0 is rejected and Ha is accepted, meaning there is a difference in interest in learning mathematics for class II students using clock media. Meanwhile, the results of Fcount compared to Ftable 1⁄55 are at a significant level of 0.05, namely 4.02. So it can be seen that the Fcount value is greater than Ftable or 238.903 > 4.02, so Ha is accepted.

Based on the results of the analysis using the paired sample t test, a sig (2-tailed) value can be obtained, namely 0.000. It can be concluded that the sig (2-tailed) value is 0.000 < 0.05 which can be said to be that H0 is rejected and Ha is accepted. Meanwhile, the results of tcount compared to ttable with df (n-1) are (28-1=27) at the 5% significance level, namely 2.052. So it can be seen that the value of tcount is greater than ttable or 13.656 > 2.052, so Ha is accepted. The test results can be seen in table 4 as follows:

e-ISSN: 2528-102X
p-ISSN: 2541-4321

Table 4. Paired T-Test Results

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	kontrol - eksperimen	-21.07143	8.16464	1.54297	-24.23735	-17.90551	-13.656	27	.000

Based on the results of the analysis above, it is stated that the hypothesis is that there is an influence of clock media on interest in learning mathematics in the material of time and clocks in class II State Elementary School 03 Jaten in the 2023/2024 school year.

DISCUSSION

Research carried out in class 2 of SD N 03 Jaten during the mathematics learning process regarding time and clocks, showed that the learning process was often teacher-centred, making students less actively involved in learning mathematics. Then, the use of learning media in explaining mathematics material is still simple, such as through pictures in books which do not attract the focus of attention when the teacher explains the material does not last long and students are also less able to connect the time and clock material with problem objects that exist in everyday life. -day. From this, it was revealed that there was a lack of student interest in learning mathematics. At State Elementary School 03 Jaten, students' interest in learning in mathematics subjects regarding hours and time is still low because the learning media is incomplete, resulting in students not having interest in learning so that the impact of student learning on learning is still low. Interest in learning is relatively low because during the teaching and learning process students do not pay enough attention to the teacher's explanations, students also often disturb their classmates when doing assignments given by the teacher, and students often fall asleep in class.

To overcome the low interest in learning mathematics in grade 2, the researcher will use clocks made of colored cardboard during the mathematics teaching and learning process regarding time and clocks. The clock media that researchers will use is a more detailed media that shows complete minutes and hours starting from 1 am (01.00) to 12 pm (00.00). This makes children understand the material presented by the teacher better and makes children enthusiastic, interested and enthusiastic about learning mathematics. With this clock media, children can use it directly by taking turns with other friends who want to try it. This is supported by previous research, namely research by Linda Indiyarti Putri & Abdul Basir (2020), that this research also succeeded in making students' interest better developed in participating in mathematics learning activities. Students' attention to learning and students' understanding of the subject matter were much better than students in the control class. In

e-ISSN: 2528-102X
p-ISSN: 2541-4321

other words, the use of corner clock props influences students' mathematics learning outcomes. Research from Izzatul Lailah Wijayanti & Budiyono (2015) stated that the angle clock media had a significant effect on the learning outcomes of angle measurement material for fifth grade students at Panjunan State Elementary School, Sidoarjo. Students who learn using angle clock media understand the material better than students who learn using protractor media.

After the researchers conducted research using clock media, based on the results of hypothesis testing using the paired sample t-test, the average value of the questionnaire results for the control class was 54.03 while for the experimental class it was 75.10. From this calculation, the sig (2-tailed) value can be obtained, namely 0.000 or meaning 0.000 < 0.05 and the hypothesis test result is 13.656 or means 13.656 > 2.052 which means Ha is accepted. Based on the results of the calculations above, it can be stated "There is an influence of clock media on interest in learning mathematics in time and clock material in Class II State Elementary School 03 Jaten for the 2023/2024 academic year."

CONCLUSION

Based on the results of data analysis using a paired sample t-test regarding the influence of clock media on interest in learning mathematics in time and clock material in Class II State Elementary School 03 Jaten for the 2023/2024 academic year, it can be concluded that there is an increase in students' interest in learning mathematics after using clock media. It can be proven that the mean or average of the questionnaire results for the control class is 54.03 while the experimental class is 75.10. Therefore, the mean of the experimental class is higher or greater than the control class. Based on the results of the paired sample t-test above, it can be concluded that the tcount result is 13.656 then compared with dk = (n-1) to (28-1) = 27 with a significance level of 5%, namely 2.052. So it can be seen that 13.656 > 2.052 or the tcount value is greater than ttable. If we look at the significant value obtained at 0.000 < 0.05, it can be concluded that "There is an influence of clock media on interest in learning mathematics in the material of time and clocks in class II elementary school. Negeri 03 Jaten Academic Year 2023/2024."

SUGGESTION

Based on the research that has been carried out, there are several suggestions that researchers can give regarding the use of clock media as follows. The suggestion is that teachers are expected to improve their ability to manage the class, especially in mathematics, clock and time material by using clock media so that students' interest in learning can be achieved. increases and the material presented can be absorbed well. Suggestions for students can focus on the explanations from the teacher who is delivering the material and not just treat learning using jam media as a game so that when the teacher

e-ISSN: 2528-102X
p-ISSN: 2541-4321

explains the material it can be conducive and easy to understand. Suggestions for future researchers are to develop clock media in mathematics learning using time and clock material.

BIBLIOGRAPHY

Azzahra, M. D., & Pramudiani, P. (2022). Pengaruh Quizizz sebagai Media Interaktif terhadap Minat Belajar Siswa pada Pelajaran Matematika Kelas V di Sekolah Dasar. *Jurnal Cendekia : Jurnal Pendidikan Matematika*, *6*(3), 3203–3213. https://doi.org/10.31004/cendekia.v6i3.1604

Dewi, N. (2021). Penggunaan Media Jam Sudut untuk Meningkatkan Hasil Belajar Peserta Didik pada Materi Pengukuran Sudut Kelas III MIN 2 Aceh Jaya. In *Journal of Business Theory and Practice* (Vol. 10, Issue 2). http://www.theseus.fi/handle/10024/341553%0Ahttps://jptam.org/index.php/jptam/article/view/1958%0Ahttp://ejurnal.undana.ac.id/index.php/glory/article/view/4816%0Ahttps://dspace.uii.ac.id/bitstream/handle/123456789/23790/17211077 Tarita Syavira Alicia.pdf?

Prasasty, N., & Utaminingtyas, S. (2020). Penerapan Model Discovery Learning Pada Pembelajaran Matematika Siswa Sekolah Dasar. *Jurnal Riset Pendidikan Dasar (JRPD)*, *1*(1), 57–64. https://doi.org/10.30595/.v1i1.7932

Putri, L. I., & Basir, A. (2020). Papan Jam Analog: Media Edukatif Pembelajaran Matematika Madrasah Ibtidaiyah. *Edumatika: Jurnal Riset Pendidikan Matematika*, *3*(1), 33. https://doi.org/10.32939/ejrpm.v3i1.501

Rohmawati, D., Bahtiar, R. S., & Dayat, T. (2019). Efektivitas Penggunaan Media Papan Waktu pada Pembelajaran Perhitungan Waktu Bagi Siswa Kelas III Sekolah Dasar. *Jurnal Bidang Pendidikan Dasar*, *3*(1), 14–23.

Rosalinda. (2020). Penggunaan Media Flash Card dalam Pembelajaran Bahasa Arab di SD Negeri 09 Dewantara. *Serambi Konstruktivis*, *2*(4), 1–15. https://doi.org/10.1016/j.fcr.2017.06.020

Undang Undang Republik Indonesia Nomor 20 Tahun 2003 Tentang Sistem Pendidikan Nasional (2003). https://doi.org/10.24967/ekombis.v2i1.48

Wijayanti, I. L., & Budiyono. (2015). Pengaruh Penggunaan Media Jam Terhadap Hasil Belajar Matematika Materi Pengukuran Sudut Siswa Sekolah Dasar. *Jpgsd*, *3*, 861–870.

Wiryanto. (2020). Proses Pembekajaran Matematika di Sekolah Dasar di Tengah Pandemi COVID-19. *Jurnal Review Pendidikan Dasar : Jurnal Kajian Pendidikan Dan Hasil Penelitian*, *6*(2).