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The Influence of Water Cycle Diorama as a Learning Medium on Enhancing Learning Motivation of Grade V Students at SDN 1 Keling, Jepara Regency

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ABSTRACT:

Abstract: The water cycle learning in Grade V at SDN 1 Keling still uses conventional methods like lectures and textbooks, leading to low student motivation and engagement. Interactive media, such as Dioramas, are believed to be more effective in helping students understand abstract concepts. This study examines the use of Dioramas in water cycle lessons and their impact on student motivation. Using a quasi-experimental method with a One-Group Pretest-Posttest design, students showed a significant increase in motivation and learning outcomes after being taught with Dioramas. The findings suggest that Dioramas are effective in enhancing student motivation, and it is recommended that teachers use varied learning media consistently. Future research should explore other factors that may further boost student motivation.

Introduction

Learning is an educational action aimed at developing the potential of students, encompassing cognitive, affective, and psychomotor aspects. According to Article 2 of the Minister of Education and Culture Regulation No. 103 of 2014, to achieve learning objectives, teachers must implement activity-based learning that includes the following characteristics: (1) interactive and inspirational; (2) enjoyable, challenging, and motivating for students to participate actively; (3) contextual and collaborative; (4) providing ample space for students' initiative, creativity, and independence; and (5) in accordance with students' talents,

interests, abilities, and physical and psychological development. By implementing such learning, students are expected to achieve the predetermined competencies. Based on the 2013 curriculum, the competencies that elementary school students must achieve in the realm of knowledge include having factual and conceptual knowledge based on curiosity about science, technology, arts, and culture within the context of national humanity, statehood, and civilization related to phenomena and events in the home, school, and playground environments.

The achievement of competencies in learning can be seen from the learning outcomes obtained by students. According to Wina Sanjaya (2010:15), several variables can influence the success of learning, including teacher factors, facilities and infrastructure factors, and environmental factors. One effort that a teacher can make to create an enjoyable and memorable learning atmosphere is by utilizing engaging learning media and basing the material on the taught content. With the help of learning media, students can quickly understand the content of the lesson, and they will also be motivated to observe directly.

Learning media are all tools that can be used to achieve learning objectives. According to Ridwan (2020:29), learning media play a very important role in learning activities for both teachers and students. Learning media can be used to deliver teaching materials in all subjects, one of which is in the field of Natural Sciences (IPA). Natural Sciences is a mandatory subject in elementary schools that is important for shaping students' understanding of natural phenomena and attitudes towards the environment. However, learning Natural Sciences, especially on the topic of the water cycle at SDN 1 Keling, faces various challenges such as limited learning media, the dominance of lecture methods, and minimal student involvement. Students tend to be unfocused, have low material comprehension, and the learning process is too dependent on textbooks. The water cycle material is important because it teaches care for nature, but the difficulty in directly observing this process makes supportive learning media very necessary. Observations show that the use of media in schools is limited, and the monotonous learning process results in low learning outcomes, with 45% of students not reaching the minimum competency standard of 70.

To improve students' understanding of the water cycle, interactive media that can visualize the concept concretely is needed. One proposed solution is the use of dioramas as learning media. Dioramas, as 3D visual media that can be viewed from various angles, are considered capable of helping students understand

the stages of the water cycle in depth, not just memorizing the material. With dioramas, it is hoped that learning will become more interactive, engaging, and effective in enhancing students' understanding and learning outcomes.

Literature Review

There are several studies relevant to the research on the influence of diorama learning media on the water cycle in improving the learning motivation of fifth-grade students at SDN 1 Keling, Jepara Regency, namely:

1. The study conducted by Anang Yuliawan (2014) titled "The Influence of School Facilities and Infrastructure on Students' Learning Motivation at SD Muhammadiyah Special Program Wonogiri for the Academic Year 2013/2014". This research is a type of quantitative study with statistical analysis. Data analysis used simple regression statistical analysis. The results showed that facilities and infrastructure positively influenced both intrinsic and extrinsic motivation of students in learning at SD Muhammadiyah Wonogiri.
2. Similarly, the study conducted by Kartika Wahyuningrum (2015) titled "The Influence of School Learning Facilities on the Learning Motivation of Fifth Grade Elementary School Students in Dabin IV, Pituruh District, Purworejo Regency". This research method is ex post facto with a quantitative approach. Data collection techniques used questionnaires, and data analysis used simple regression analysis. The results showed that 4.4% of students' learning motivation was influenced by school learning facilities.
3. The study conducted by Anang Nugroho (2015) titled "The Influence of Using PowerPoint-Based Learning Media with Animation Videos on Learning Motivation and Achievement in Clutch Unit Maintenance Material for Second Grade Students of Light Vehicle Engineering at SMK Piri 1 Yogyakarta". This research used a quasi-experimental method. Data collection was done through tests and learning motivation questionnaires. The results showed that there was an influence of using video and animation learning media on both learning motivation and achievement.

Methods

Research methodology is defined as a scientific way to obtain valid data with the aim of discovering, developing, and proving certain knowledge so that it can be used to solve, understand, and identify problems. Based on the issues examined in this research and considering its objectives and benefits, this type of research falls under the category of pseudo-experimental research with a One-Group Pretest-Posttest Design approach. In conducting this research, a Pretest and Posttest Control Design was implemented. The researcher had one class which was given a pretest-treatment-posttest to determine the initial state of the students and to identify the differences in student learning outcomes after being given treatment using diorama media.

Result and Discussion

Result

This research is titled "The Influence of Diorama Learning Media on the Water Cycle in Increasing Learning Motivation of Fifth Grade Students at SDN 1 Keling, Jepara Regency." This research was conducted at SDN 1 Keling, Jepara Regency. The study has obtained pretest and posttest scores on the water cycle material for fifth grade to observe changes in students' learning motivation. The pretest scores in the study were used to assess the initial learning motivation of the students, while the posttest scores were used to assess the final learning motivation of the students after using the water cycle diorama media. The pretest and posttest scores can be seen in the following table:

Tabel 1. Hasil Nilai Pretest dan Posttest

Jumlah Siswa	*Pretest*	*Postest*
20	75	85

Based on Table 1, it shows an increase in scores between the pretest and posttest. This means that after using the water cycle diorama learning media, students' learning motivation increased or changed from 75 to 85. This increase in scores indicates that the water cycle diorama learning media positively contributed to the improvement of students' learning motivation. This media is more effective in making students more interested and enthusiastic about learning the water cycle material. The increase in scores shows that students

feel more engaged and understand the material better after using the water cycle diorama learning media.

Meanwhile, the normality test is used to determine whether the sample used in this study comes from a normally distributed population or not. This normality test uses the Shapiro-Wilk test in SPSS 27 for Windows because the sample size is less than 30, as follows:

Tabel 2 Uji Normalitas

Tests of Normality		
	Shapiro-Wilk	
Statistic	*Df*	*Sig.*
0.939	20	0.231
0.879	20	0.017

Based on Table 2, it is found that the data can be considered normally distributed if, in the Shapiro-Wilk output, the Asymptotic Sig Coefficient is greater than the determined alpha value of 5% (0.05). Conversely, if the Asymptotic Sig Coefficient is less than 0.05, the data is considered not normally distributed. In the normality test data above, it can be seen that the significant values for the pretest and posttest (0.23 and 0.17) indicate that the Asymptotic Sig Coefficient for Class V is greater than the alpha value (0.05), thus the data can be considered normally distributed.

The hypothesis test in this study uses a paired t-test. The paired t-test is used to compare the pretest and posttest data results, so that a statement can be obtained about whether there is an effect of a treatment using the Water Cycle Diorama media or without treatment.

$H_{o:}$ There is no significant difference between the pretest and posttest scores using the water cycle diorama media and the pretest and posttest scores of students without using the water cycle diorama media in science learning on the water cycle topic for Grade V students at SDN 1 Keling

Ha : There is a significant difference between the pretest and posttest scores using the water cycle diorama media and the pretest and posttest scores without using the water cycle diorama media in science learning on the water cycle topic for Grade V students at SDN 1 Keling

Tabel 3 Uji Hipotesis

One-Sample Test						
	Test Value = 0					
	T	df	*Sig. (2-tailed)*	*Mean Difference*	*95% Confidence Interval of the Difference*	
					Lower	*Upper*
Prestest	21.504	19	.000	57.00000	51.4520	62.5480
Postest	42.147	19	.000	76.25000	72.4634	80.0366

Based on Table 3, the hypothesis test results show that the average pretest score is 57.00, while the average posttest score is 76.00, with a total of 20 respondents. Since the average pretest score is lower than the posttest score, this indicates a difference or increase in learning outcomes. Based on the paired t-test results using SPSS, the significant value is 0.000, thus Ho is rejected and Ha is accepted. Therefore, it can be concluded that there is an effect of using diorama media in increasing students' learning motivation.

The learning motivation data collected from 20 respondents quantitatively shows that the scale used in this questionnaire is the Likert Scale, meaning that respondents choose from 4 alternatives: SB (very good), B (good), KD (sometimes), TB (not good), and STB (very not good) with a score range of 1 – 5. Overall, students showed a very good response to the use of diorama media in increasing their learning motivation.

The general function of motivation is to drive, move, and direct actions. Driving means influencing the emergence of behavior or actions. Moving means providing the power to act, while directing means guiding actions to achieve goals or desires. The function of learning is to gain knowledge, acquire skills, and form attitudes. Besides the general functions of motivation and learning objectives, learning motivation functions as a driver, mover, and director towards learning goals, namely gaining knowledge, skills, and forming attitudes to achieve performance. According to Sardiman (2011:85), good motivation in student learning activities will show good results as well.

Discussion

Based on the research results, the use of diorama media in teaching the water cycle in Grade V at SDN 1 Keling shows a significant increase in students' motivation and learning outcomes. Students' learning motivation scores increased from 75 to 85, and the pretest-posttest results also showed an average increase from 57 to 76. These results reinforce the findings that interactive learning media like dioramas contribute positively to enhancing students' motivation and understanding.

These findings are consistent with Anang Yuliawan's (2014) research, which shows that school facilities and infrastructure, including learning media, have a positive influence on students' learning motivation, both intrinsically and extrinsically. The use of dioramas as interactive learning tools helps students become more interested and engaged in the learning process, similar to how school facilities also affect students' motivation in Kartika Wahyuningrum's (2015) research. Although the influence of learning facilities on students' motivation in that study was only 4.4%, it shows that media and educational facilities still contribute to the learning process.

Additionally, these research results are consistent with Anang Nugroho's (2015) findings, which show that visual-based media like animated videos increase students' motivation and academic performance. In the context of science learning, visual and interactive media like dioramas facilitate students' understanding of abstract concepts such as the water cycle, similar to how animated videos help students understand complex material. The significant increase in learning motivation is also shown through the paired t-test, indicating a real effect of using dioramas in learning.

Thus, relevant studies and these research results underscore the importance of using interactive and visual learning media to enhance students' learning motivation. Dioramas as learning media have proven effective in overcoming the limitations of lecture methods and textbooks, as well as increasing student engagement in the learning process.

Conclusion

Based on the research results, it can be concluded that the use of diorama media in teaching the water cycle in the fifth grade at SDN 1 Keling has proven

effective in increasing students' motivation and learning outcomes. The increase in student motivation is evident from the rise in motivation scores from 75 to 85, as well as the pretest-posttest results showing an increase in the average score from 57 to 76. This indicates that diorama media not only attracts students' interest but also helps them better understand abstract concepts like the water cycle.

The use of dioramas as interactive learning media provides a more enjoyable learning experience and encourages active student engagement in the learning process. Additionally, statistical test results show that there is a significant influence of using this media on students' motivation and learning outcomes. Therefore, dioramas can be recommended as an alternative learning media that can be implemented in science subjects to improve the quality of learning in elementary schools.

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