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USING HELIOSPHERE LEARNING MEDIA TO MOTIVATE ELEMENTARY SCHOOL STUDENTS

[1]Putri Zudhah Ferryka 1, [2]Esti Rahmawati [3]Abinda Nova Aulia, [4]Adinda Putri Sabila, [5]Ainun Nadia, [6]Alfina Sukma, [7]Alfonsa Maria Hayu Dwi Sasanti, [8]Angga Budi Saputra
Universitas Widya Dharma, Indonesia
[1]zudhah_putri@yahoo.com, [2]abindanovaulia@gmail.com,
[3]dindahelya123@gmail.com, [4]ainunnadia0202@gmail.com,
[5]alfinasukma25@gmail.com, [6]alfmaria3@gmail.com, [7]anggabudis74@gmail.com

ABSTRACT

This study aims to use heliosphere media to increase the learning motivation of SDN 3 Ketan's grade VI science students. Sixteen students are the subjects of the classroom action research (CAR) methodology. Questionnaires, documentation, interviews, and observation were used to gather data and subjected to qualitative descriptive analysis. The study's findings demonstrated that Heliosphere successfully raised pupils' motivation for learning. According to observations and survey results, up to 75% of students reported feeling more motivated after using this medium for studying. In conclusion, heliosphere media can be valuable for raising primary school pupils' motivation to learn science.

Keywords: heliosphere, learning motivation, IPAS, elementary school

INTRODUCTION

Education is a fundamental aspect of building the character and competence of students. Natural and Social Sciences (IPAS) is often considered difficult by students. This subject covers various topics that require a deep understanding of concepts and the relationship between the multiple materials taught, namely basic concepts about nature, living things, and social relationships around students. At SD N 3 Ketandan, many students have difficulty understanding the IPAS material, resulting in low learning motivation. One of the factors that influences low learning motivation is the use of teaching methods that are less interesting and less interactive. Several previous studies have also shown that learning not involving interactive media often makes students quickly bored and less motivated to learn (Suyitno, 2021). Therefore, innovation is needed in learning media that can attract interest and increase students' learning motivation.

Education is a process undertaken by individuals to acquire and expand knowledge. Education is essential for forming a community and creating a more

prosperous civilisation. This is because, in every life, there is always harmony and connection with the progress of the times. Along with this development, various problems previously unimaginable by society have emerged (Siregar, 2019). In the context of 21st-century learning, especially in the Merdeka curriculum, students learn learning materials through various examples, applications, and authentic experiences, both in the school environment and outside of school. To realise these demands as part of implementing the Merdeka curriculum, it is essential to use technology in an appropriate, sustainable, and accessible way for all parties.

Innovation in learning media is significant to improve the quality of education. The right learning media can help students understand the material more efficiently and increase their interest in the lesson. One learning media that can be used is HelioSphere, a technology-based learning media that allows students to learn through interactive simulations and engaging visualisations. Using HelioSphere, students can see and experience the learning material directly, which is expected to improve their understanding of science and natural sciences concepts.

Learning motivation is a key factor in learning success. Students with high motivation tend to be more involved in learning, so they can more easily understand the material. According to Fadilah (2020), students actively involved in the learning process have a better understanding of the subject matter. However, in reality, many students feel less interested in science subjects, mainly because the learning methods can stimulate their curiosity and interest. Therefore, a new approach is needed to increase student motivation and interest and make it easier for them to understand science concepts, which are sometimes quite complex.

Interesting learning media can increase students' attention and tendency to learn, as mentioned (Launin, 2022). One solution can be implemented using technology-based learning media, such as HelioSphere. Technology-based learning media has been proven effective in increasing students' learning motivation. A study by Suryani and Fauzi (2022) showed that using technology in learning can activate student engagement because the media can present material more visually and interactively. HelioSphere, with features

such as simulation and visualisation, allows students to explore science concepts through direct experience, making it easier to understand. For example, a simulation of the solar system in HelioSphere can provide a more realistic picture of how the planets move, rather than just listening to a verbal explanation.

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LITERATURE REVIEW

Technology-based learning media has been proven effective in increasing students' learning motivation. A study by Suryani and Fauzi (2022) showed that using technology in learning can activate student engagement because the media can present material more visually and interactively. HelioSphere, with features such as simulation and visualisation, allows students to explore science concepts through direct experience, making it easier to understand. For example, a simulation of the solar system in HelioSphere can provide a more realistic picture of how the planets move, rather than just listening to a verbal explanation.

On the other hand, learning motivation is one of the main components influencing students' success in the learning process. Learning motivation can be interpreted as an internal or external drive that makes students want to learn and achieve

specific learning goals. Sardiman (Trygu, 2021) explains that motivation comes from the word "motive," which means the drive or strength within a person to do something. This motivation acts as a driving energy that directs individuals to take specific actions, including in the context of learning.

Uno (2016) added that motivation is an internal force that can move and direct a person's actions to achieve predetermined goals. Motivation is a vital driving force for students in learning activities. Students with high motivation tend to be more diligent and focused and try their best to understand and master the subject matter. Conversely, less motivated students tend to give up easily, are less enthusiastic, and find it challenging to achieve optimal learning outcomes.

Learning motivation can arise from two sources: intrinsic and extrinsic. Intrinsic motivation is a drive from within the student, such as a desire to know, curiosity, or personal interest in a subject matter. Students with intrinsic motivation usually learn because they like the learning process or feel happy when they master the material. Meanwhile, extrinsic motivation arises from external influences, such as encouragement from teachers, parents, and peers, or rewards, such as awards or good grades (Djamarah in Lestari, 2020).

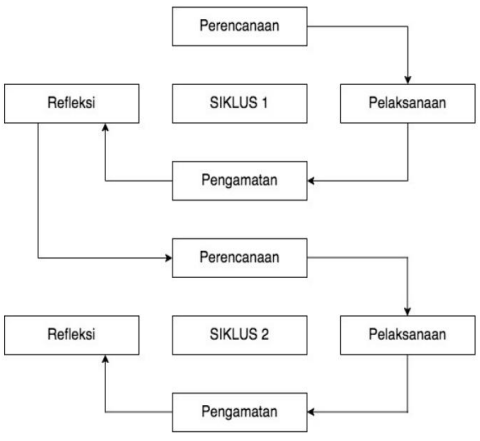
Sardiman (2016) also emphasised that motivation makes students want to learn and determines the direction, strategy, and perseverance in the learning process. Students with high learning motivation tend to overcome difficulties better, not give up quickly, and continue trying until they achieve their goals. Conversely, students with low motivation will more easily get bored and less diligent when learning, so the learning outcomes tend to be less than optimal.

Heliosphere learning media is a moving miniature solar system. There are several ways to introduce the solar system to children, such as using picture books, teaching aids, or visiting a planetarium. The rapid development of technology today also plays a role in learning media. It can be easier to understand things that are more difficult to understand by using fun and helpful learning media, with learning media that displays three-dimensional objects and animations using technology. Using technology can make it easier for children to understand the material they get, one of which is using technology called augmented reality (Atmaja, 2018). This augmented reality learning media can make it easier for children to understand what they are learning and become one of the efficient

ways for meaningful learning for children (Kartini et al., 2020). Augmented reality learning media can increase children's curiosity and make it easier to understand the material they are studying. Atmaja (2018) explains learning media as Heliosphere learning media. AR technology can enhance students' understanding with more realistic and interactive visualisations, making it easier to understand abstract objects like the heliosphere, which involves solar wind and magnetic fields that affect planets. With AR, children not only learn about the movement of planets but can also see how the heliosphere functions, how solar wind affects planets, and how these interactions occur dynamically.

METHODOLOGY

The type of research used is classroom action research with the Kemmis & McTaggart model. This research model consists of four stages: planning, implementing actions, observation, and reflection. These four components are the steps of a cycle, so Kemmis and Mc Taggart combine these actions and observations and then use them as the basis for the next step, namely reflection, a modification is compiled in the form of actions and observations again, and so on (Winarsih, 2022). The reason for using this model is because there are problems in the learning process. The research design used in this study can be observed based on the image 1.



Kemmis and Mc. Taggart's classroom action research cycle

The place of this research was conducted at SDN 3 Ketandan. The subjects of the study were all students of SDN 3 Ketandan, consisting of 15 students. Data

collection techniques used observation sheets, interviews, questionnaires, and documentation. Observation sheets were used to determine teacher learning activities' implementation in the discovery learning model—documentation collected and analysed data, including written documents, images, and electronics. The data analysis technique in this study used descriptive analysis with a percentage. The achievement of determined indicators of success in this study:

1. Scores or values obtained from teacher performance observations and student observations that reach a minimum percentage of 75%.
2. Furthermore, this study is considered successful if at least 75% of students state that they strongly agree and agree with the questionnaire, indicating that the implementation of learning media has succeeded in increasing learning motivation through the use of HelioSphere learning media.

RESULTS AND DISCUSSION

This research was conducted in two cycles, namely cycle one and cycle two. The stages of classroom action research are performed in cycles of planning, implementation, observation, and reflection. Various learning devices were determined at the planning stage, and those would be used as a guide. Next, observation and reflection were conducted. More details are described as follows:

Cycle 1

In implementing cycle 1, the researcher applied the HelioSphere learning media to the subject of Science on the Solar System material. Cycle 1 was carried out in 1 meeting. At the planning stage, the researcher and collaborators discussed the problems faced by the class teacher as a collaborator. In addition, the researcher prepared a teacher activity observation guideline sheet and a student activity observation sheet. Cycle 1 was carried out on Monday, March 17, 2025, with 2x35 minutes starting at 07.35-08.45. The initial learning activity began with prayer, attendance, and apperception or motivation. The core activity started with the teacher dividing the students into three groups by counting from 1 to 5; then, the students were asked to sit according to their respective groups according to the place determined by the teacher. After that, the teacher gave material and explained about the solar system. The results of observations in cycle 1 showed that

students were enthusiastic about participating in learning to answer teacher questions. There were several weaknesses in cycle one learning, including students who actively participated in group activities were not; the teacher had difficulty conditioning students to be active and focused during the learning process. The HelioSphere learning media that was applied was proven ineffective in increasing students' learning motivation; the results can be seen in Table 1. Students learning motivation in cycle 1 with 13 students, the average percentage of strongly agreeing was 30.77%, and the average percentage of agreeing was 56.41%, source: processed data (2024).

Table 1. Results of Student Learning Motivation in Cycle 1

No.	Indicator	Score
1.	Number of students	13
2.	Average Percentage Strongly Agree	30,77%
3.	Average Percentage Agree	56,41%

Sumber: processed data (2025)

Table 1 shows that the level of student learning motivation has not reached 75%, so it must be continued to cycle two because the success criteria in this study are if 75% of students agree or strongly agree.

Based on the description of the research results in cycle I by implementing the HelioSphere learning media, it has been carried out well, but some shortcomings still need to be fixed in the next cycle. The teacher has carried out the learning process according to the tools that have been made; it's just that some activities are not carried out optimally, so in cycle I, there are still some obstacles and weaknesses, including student involvement in learning, is still lacking, the division of study groups is still homogeneous so that active students are not evenly distributed in each group. In the implementation of learning, some students make noise, so the learning atmosphere in the classroom is not conducive. From these obstacles and problems, the researcher made a plan for improvements that will be carried out in cycle II, including involving students more intensively in learning so that students better understand the material being studied.

Study groups are divided evenly so that active students can motivate other students. Students who often make noise are given the responsibility as group leaders.

Cycle 1

In implementing cycle 2, the researcher applied the HelioSphere learning media to the subject of science on the solar system material. Cycle 2 was carried out in 1 meeting. In the planning stage, the researcher and collaborators discussed the improvements needed to overcome the problems in cycle 1. The researchers also created learning tools with a problem-based learning model consisting of teaching modules, teaching materials, student worksheets and learning evaluations. In addition, the researcher prepared a teacher activity observation guideline sheet and a student activity observation sheet.

Cycle 2 was carried out on Wednesday, January 19, 2025, with 2x35 minutes starting at 07.35-08.45. The researcher acted as a teacher using HelioSphere learning media. In contrast, the class teacher acted as an observer to observe learning activities using observation sheets prepared and made to plan cycle II. The teaching and learning process refers to the learning tools made. Three activities were carried out, namely preliminary activities, core activities, and closing activities. The learning activities follow the learning syntax in the problem-based learning model.

The results of the observation of cycle II during the learning process show the teacher has carried out the learning well with the HelioSphere learning media that has been made, with the teacher's score getting 89.58%, which shows excellent performance in teaching with HelioSphere media. Students get a score of 89.58%, which reflects involvement and positive responses to learning. All syntax of the problem-based learning model has been carried out systematically. The teacher can condition students to remain active and focused during learning. The results can be seen in table 2 below:

Table 2. Student Learning Motivation in Cycle 2

No.	Indicator	score
1.	Number of students	13
2.	Average Percentage Strongly Agree	83,08%
3.	Average Percentage Agree	22,01%

Sumber: processed data (2025)

Based on Table 2, students' learning motivation in cycle II shows that from 13 students, the average percentage of strongly agreeing is 83.08%, while the average percentage of agreeing is 22.01%. At the reflection stage, the researcher analysed and compared cycles I and II to determine whether the increase in students' learning

motivation results was to the criteria for the success of the actions that had been chosen. The comparison of the average percentage of strongly agreeing increased from cycle I by 30.77%, while in cycle II, it obtained 83.08%. This increase has reached the success indicator in this study, which has been determined at 75% of the number of students. Based on the study results, it can be stated that the study was stopped in cycle II.

DISCUSSION

Based on the results of student learning motivation in cycles I and II, data obtained showed that student learning motivation experienced a significant increase in science on the solar system material. This can be seen from the average percentage of students who agree or strongly agree with Cycle I and II's learning motivation questionnaire. In cycle I and cycle II, teachers used HelioSphere learning media. In cycle I, implementing HelioSphere learning media has been carried out well, but some shortcomings must be fixed in the next cycle. This can be seen from the evaluation test scores conducted in cycle I.

The data on science learning motivation shows that the average percentage of those who agree or strongly agree with the questionnaire is 30.77% and 56.41%. In cycle II, there was a significant increase compared to cycle I. In cycle II, the data on student learning motivation shows that the average percentage of those who agree or strongly agree with the questionnaire is 22.01% and 83.08%. The value obtained from the observation of teacher performance and student observation reached a minimum percentage of 75%; namely, the teacher got a score of 89.58%, which shows excellent performance in teaching with HelioSphere media. Students got a score of 89.58%, which reflects involvement and positive responses to learning. The following is a diagram of the increase in student learning motivation seen from the average value of the percentage of those who agree or strongly agree in the student questionnaire from cycle I and cycle II.

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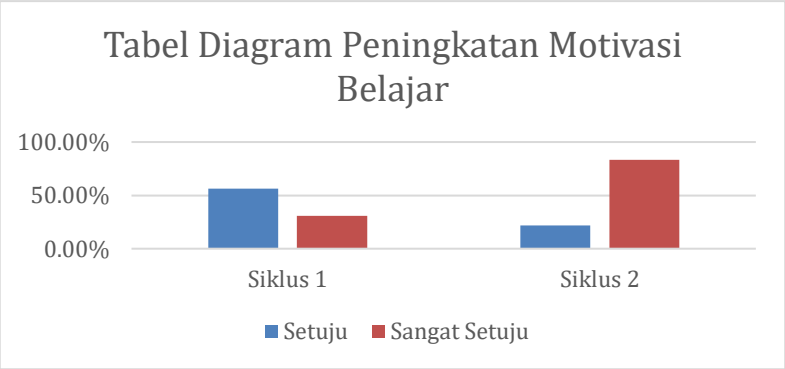

Based on the diagram above, it can be seen that learning using HelioSphere learning media in cycle II resulted in a significant increase in learning motivation from cycle I. This is in line with research conducted by Wahyudi (2024), which shows that the media positively impacts students' learning motivation. These results show that the average percentage of student questionnaires has reached the criteria and the student learning motivation completion rate.

CONCLUSION

Based on the results of Classroom Action Research that has been carried out for two cycles using HelioSphere learning media in the subject of Science implemented at SDN 3 Ketandan, the following conclusions can be drawn: HelioSphere Learning Media can increase the learning motivation of students of class SDN 3 Ketandan. The values obtained from observations of teacher performance and student observations reached a minimum percentage of 75%; namely, the teacher got a score of 89.58%, which shows excellent performance in teaching with HelioSphere media. Students got a score of 89.58%, which reflects involvement and positive responses to learning. The increase in learning motivation of students of SDN 3 Ketandan in the subject of Science carried out using HelioSphere learning media is shown by the average value of the percentage of student learning motivation in cycles I and II. In cycle I, the average student value was 30.77% and 56.41% to 83.08% and 22.01% in cycle II. The action was stopped in cycle II because the students' learning outcomes had met the criteria for the success of the action that had been determined in this study. Namely, 75% of students stated that they strongly agreed and agreed in the questionnaire, which showed that the application of learning media successfully increased learning motivation.

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