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IMPROVING SCIENCE LEARNING OUTCOMES THROUGH THE MAKE A MATCH MODEL IN ELEMENTARY SCHOOLS

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Abstract: This study aims to apply the Make a Match type of cooperative learning model to improve Natural Science (IPA) learning outcomes of fourth-grade students at SD Negeri 61 Lubuklinggau. Based on initial observations, students experienced difficulties in understanding science concepts when learning was dominated by lecture-based methods, resulting in low learning outcomes and limited classroom participation. The study employed Classroom Action Research (CAR) using the Kemmis and McTaggart model, conducted in two cycles consisting of planning, action, observation, and reflection stages. The research subjects were 25 fourth-grade students. Data collection techniques included pre-tests, post-tests, and classroom observations. In Cycle I, the average pre-test score was 52, with only 20% of students achieving mastery, while the post-test average increased to 69.2, with 68% of students achieving mastery. In Cycle II, the post-test results showed a further improvement, with an average score of 87.6 and 88% of students achieving mastery. These results demonstrate a significant improvement in students' science learning outcomes after the implementation of the Make a Match learning model. In conclusion, the Make a Match cooperative learning model is effective in improving students' science learning outcomes while simultaneously increasing learning motivation and active participation. This study implies that cooperative and game-based learning models can serve as effective alternatives to traditional teaching methods in elementary science instruction. Future research is recommended to apply the Make a Match model to other science topics, grade levels, or subjects to examine its broader applicability and long-term impact.

INTRODUCTION

Education consists of learning and the learning process. Learning consists of several subjects or fields of study that form the content of the curriculum. One of these subjects is Natural Sciences (IPA). Education also involves the subject and object of educational activities. Etymologically, education comes from the Greek word "pedagogie,"which consists of the words "paes," meaning child, and "agogos," meaning to guide, so pedagogy means guidance

given to children. In Roman language, education originates from the word “educate,” which means to bring out something that is inside. In English, education is referred to as “to educate,” which means to improve moral character and train the intellect. (Hidayat et al. 2019:23)

Students are both the subjects and objects of educational activities. Therefore, the meaning of the learning process is the learning activities of students in achieving a learning objective. Learning objectives will be achieved if students actively strive to achieve them. The activity of students is not only required in terms of physical activity, but also in terms of mental activity. If only physical activity is present and mental activity is absent, then the learning objectives have not been achieved. This is the same as students not learning, because students do not feel any change within themselves. Learning is essentially a “change” that occurs within a person after carrying out learning activities. (Shite, et al. 2024:1-2)

Khadijah states that learning is a lifelong process. Almost all human abilities, skills, knowledge, habits, interests, and attitudes are formed, modified, and developed through learning. Thus, learning is an important process that occurs in everyone's life. Therefore, a correct understanding of the concept of learning is essential for educators who are directly involved in the learning process. (Salsabila, et al. 2024:101)

Akhiruddin, et al (2020:5-60) state that learning is essentially a process, namely the process of managing and organizing the environment surrounding students so as to nurture and encourage them to engage in the learning process. Learning is also described as the process of providing guidance or assistance to students in engaging in the learning process.

Science learning is a science tha studies living things and all their life processes. Susanto (Sakila, et al. 2023:119) states that science is a human endeavor tounderstand the universe through accurate observation of the target, as well as using procedures, and explained with reasoning so as to arrive at a conclusion. Science is one of the subjects that must be studied at the elementary level with the aim of providing students with knowledge, ideas, and organized concepts about the surrounding environment obtained through, among other things,investigation, compilation, and presentation of ideas.

A learning model is a framework of learning activities created by teachers in carrying out the learning process in the classroom. The nature of this learning model is systematic, so that learning activities can run optimally. If learning activities can run well, then the designed learning objectives can be achieved properly. (Sarumaha, 2023:17-18)

Based on the results of observations conducted by researchers at SD Negeri 61 Lubuklinggau, researchers found several obstacles experienced by students, especially in science learning. The low science learning outcomes of fourth-grade students at SD Negeri 61 Lubuklinggau were the main obstacle for researchers. Based on the results of observations and interviews with fourth-grade teachers, two main factors were identified as the causes, namely internal factors related to the students and external factors related to the teaching methods applied by the teachers. From these problems, the researcher sought solutions to improve student learning outcomes. The solution found by the researcher was to apply the cooperative learning model of the make a match type.

The make a match learning model is a group learning model that encourages students to understand learning concepts and topics in an exciting situation through answer cards and question cards. In its implementation, this model has a predetermined maximum time limit. (Riyanti, 2018:441).

According to Rusman (Budiyanto, 2016:136), the Make A Match model is one type of cooperative learning method. One of the advantages of this technique is that students find partners while learning about a concept or topic in a fun atmosphere.

The Make A Match learning model, or partner exchange, is a learning technique that gives students the opportunity to work with others. This technique can be used in all subjects and for all age levels of students, Lie (Suhono, 2022:7).

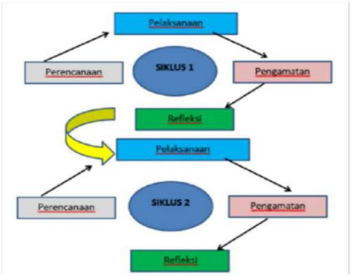
The use of the make a match learning model can improve student learning outcomes, as evidenced by previous research. Research conducted by Aditya Ayu Perdana, et al. (2018) on learning outcomes in experimental classes after being given treatment in the form of a make a match cooperative learning model. Meanwhile, learning outcomes in the control class, which did not receive any treatment, decreased because the n-gain calculation showed a figure of -0.1. This shows that the make a match cooperative learning model has a positive effect on the learning outcomes of fourth-grade students at SDN Semolowaru 1 Surabaya.

Based on the existing background, the following problem can be formulated: "Can the implementation of the make a match cooperative learning model improve the learning outcomes of fourth-grade students at SD Negeri 61 Lubuklinggau?

METODOLOGI

Research Design

This study uses classroom action research (CAR). Suharsimi (Salim, et al. 2015:19) explains CAR through a combination of definitions from three words, namely "Research" + 'Action' + "Classroom". The meanings of each word are as follows. Research is the activity of observing an object using certain methods and methodologies to obtain data or information that is useful in solving a problem being studied. Action is an activity that is deliberately carried out with a specific purpose. The actions carried out in PTK take the form of a series of activity cycles. Class is a group of students who, at the same time, receive the same lessons from the same teacher. Students do not only learn within a classroom, but also when they are doing field trips, practicums in laboratories, or learning in other places under the guidance of a teacher.



Gambar 1. Model Kemmis & MC Taggrat

Research Subject

This research was conducted at SD Negeri 61 Lubuklinggau. The subjects of this research were fourth-grade students at SD Negeri 61 Lubuklinggau in the second semester of the 2024/2025 academic year, consisting of 13 male students and 12 female students.

Data Collecting (font Times New Roman 13, Bold)

Data collection techniques for this research were gathered using observation and test result

1. Observation

Observation was conducted in this study to collect data through direct observation of the situation in Grade IV of Lubuklinggau Public Elementary School 61.

2. Test results

Tests are procedures for measuring learning outcomes in research that are systematically designed to measure specific indicators. The tests were conducted three times. The test instrument used consisted of 10 multiple-choice questions to measure the students' level of ability.

Data Analysis

This research technique was conducted using quantitative techniques. Quantitative data was obtained through test results at the end of each cycle. The indicators used to calculate student learning outcomes were at each cycle.

$$KI = \frac{SP}{SM} \times 100\%$$

Explanation:

KI: individual completeness

SP: total score obtained

SM: maximum total score

Classical completeness is calculated using the following formula:

$$pd = \frac{\text{Students who have completed their studies}}{\text{student}} \times 100\%$$

Classical mastery is measured by comparing the number of students who achieve mastery (scores above or equal to 70%) with the total number of students. If the number of students

who achieve mastery reaches 70% or more of the total number of students, then learning is said to be classically mastered.

The class average (mean) is calculated using the following formula:

$$Me = \frac{NPD}{SPD}$$

Explanation:

Me: average

NPD: total student scores

SPD: total number of students

Data collected on student achievement, classical achievement, and student average scores in each cycle will be analyzed to observe significant changes in student learning outcomes and overall average scores. By comparing data from each cycle, researchers can see student development and progress over time. If there is a significant improvement, this indicates that the actions taken in learning are effective in improving student learning outcomes. However, if there are no significant changes, researchers can evaluate and adjust strategies to achieve better results in the next cycle.

RESEARCH RESULT

Finding

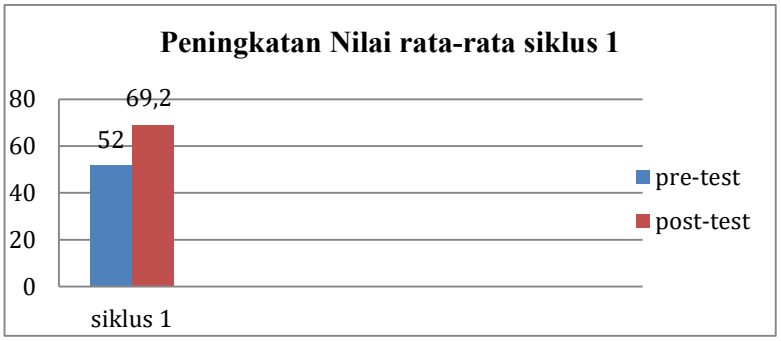
This study was conducted at SD N 61 Lubuklinggau, located on Jl. Raya Tugumulyo, Kelurahan Ekamarga, Kec. Luubuklinggau selatan II, Kota Lubuklinggau. This school is equipped with adequate learning facilities, including comfortable classrooms and seating arrangements that support the learning atmosphere. The research population was in grade IV, with a sample of 25 students from class IV B. The composition of the sample was 13 male students and 12 female students. The focus of this research was science learning on the subject of plant parts. This research took the form of Classroom Action Research (CAR) conducted in two cycles or two meetings. The first cycle consisted of three activities: in the first activity, the researcher gave pretest questions to the students; in the second activity, the researcher conducted the treatment; and in the last activity, the researcher gave posttest questions to the

students. Meanwhile, the second cycle consisted of two activities, namely treatment and posttest only.

The data collected was in the form of student learning outcomes, which were obtained through a test instrument consisting of 10 multiple-choice questions given to all students in class IVB, to determine the extent to which the Make A Match learning model was applied to improve the learning outcomes of students in Grade IV of SD N 61 Lubuklinggau.

Tabel 4.1 Presentase Rekapitulasi Ketuntasan Hasil Belajar IPA Siklus 1

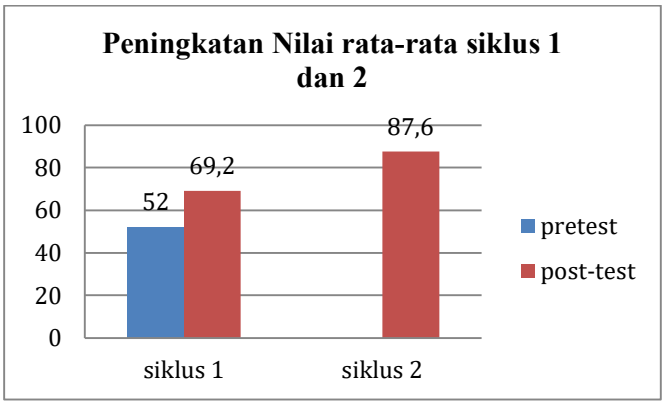
No	Siklus	Treatment	Nilai Rata-rata	Tidak Tuntas		Tuntas		Jumlah	
				F	Persen (%)	F	Persen (%)	F	Persen (%)
1.	Siklus 1	Pre-test	52	20	80%	5	20%	25	100 %
		Post-test	69,2	8	32%	17	68%	25	100 %



Gambar 4.1 Peningkatan Nilai Rata-Rata Siklus 1

Tabel 4.2 Presentase Rekapitulasi Ketuntasan Hasil Belajar IPA Siklus 1

No.	Siklus	treatment	Nilai rata-rata	Tidak tuntas		Tuntas		jumlah	
				F	Persen (%)	F	Persen (%)	F	Persen (%)
2.	Siklus II	Post-test	87,6	3	12%	22	88%	25	100%



Gambar 4.2 Peningkatan Nilai Rata-Rata Siklus 1 Dan 2

1. Cycle 1

In accordance with the steps outlined in Classroom Action Research (CAR), the activities carried out in the first cycle include planning, observation, and reflection. The activities in the first cycle are described as follows.

a. Planning

Planning for this cycle was carried out in only one meeting, which was held on May 30, 2025, with a duration of 2 x 35 minutes. The material taught in this cycle was the material in "phase B" in CHAPTER 1, Topic A: Parts of Plants and Their Functions. The planning stage for cycle 1 began with the preparation of teaching modules and pre-test and post-test questions in the form of 10 multiple-choice questions. The teaching modules compiled with material on Plant Body Parts and Their Functions for grade IV were designed based on the independent curriculum in accordance with the material to be taught and the preparation of learning tools to be used during the learning process, such as textbooks and others.

b. Implementation

The learning activity begins with the teacher saying hello, greeting the students with "Hello, children," asking them how they are doing with "How are you today?" The students respond with "Alhamdulillah, great, Allahuakbar." After that, the teacher asks the class to pray together before starting the lesson, then the teacher checks the students' attendance by checking each student while calling their names.

The teacher asks the question, "Does anyone know what we are going to learn today?" Then the teacher informs the students that today they will learn about science, Chapter 1 Topic A: Parts of Plants and Their Functions. Then the teacher

asked the students some stimulating questions, such as: Have you ever seen the parts of a plant? How many parts are there in a plant? What are the parts of a plant, and does each part have its own function? Next, the teacher explained the learning objectives. To boost the students' enthusiasm for learning, the teacher invited the students to clap their hands. Next, the teacher gave a pre-test consisting of 10 multiple-choice questions.

In the next stage, the teacher began explaining the material to be taught in today's lesson, namely Plant Parts and Their Functions, by explaining directly based on the textbook. After the lesson was over, the teacher invited the students to play a game. The teacher divided the students into two groups. The teacher gave Group 1 cards with questions and Group 2 cards with answers. The teacher explains the rules of the game. Group 1 must find the answers in group 2. After successfully finding the answers, the teacher asks the students to present their results in pairs between groups 1 and 2, while checking whether their presentations are correct or not. After the game is over, the teacher reflects on the learning process by asking the students questions such as, “Children, how did you feel about learning today?” “Did you understand the material I explained?” “Are there any questions?”

The lesson ended, and the teacher invited the students to summarize together about Plant Parts and Their Functions. Then the teacher gave a post-test consisting of 10 multiple-choice questions. After the students finished, the teacher ended the lesson by saying goodbye.

c. Observation

At this stage, observation activities were carried out simultaneously during the learning process. Researchers observed the learning situation of students in science learning with material on plant parts.

d. Reflection

Evaluation was carried out at the end of cycle 1 to assess the effectiveness of the actions that had been implemented. Student learning outcome data showed that the pre-test average score was 52, with only 20% or 5 out of 25 students achieving mastery. After the intervention, the post-test average score increased to 70. However, the mastery percentage only reached 68% or 17 out of 25 students.

2. Cycle 2

a. Planning

Based on the results of the Cycle I test, the learning process in Cycle II must be more focused. Educators need to provide more guidance and direction to students so that learning can take place more effectively. In Cycle II, classroom management skills must be improved to create a more conducive atmosphere. Time allocation must also be more efficient with the appropriate amount of time allocated to explaining the material.

The researcher designed teaching modules and prepared a multiple-choice test consisting of 10 questions. Cycle II consisted of one meeting with a time allocation of 2 x 35 minutes.

b. Implementation

Cycle II was conducted on May 31, 2025, according to the predetermined schedule. Cycle II was held in class IVB at SD N 61 Lubuklinggau. In the implementation of Cycle II, the researcher acted as a teacher or educator, with 25 students in attendance. In the implementation of Cycle II, the teacher again applied the Make A Match learning model with the help of cards as follows:

The teacher conveyed the learning objectives, then explained the material. After explaining the material, the teacher invited the students to play a game. Before playing the game, the teacher asked the students to concentrate, and the students responded, “Let's concentrate.” The teacher divided the students into two groups. Group 1 held the question cards, and group 2 held the answer cards. The teacher informed the students of the time limit for the game. After finishing, the teacher asked the students to present their results in turns while checking whether the cards they got were correct or incorrect.

The game ended, and the teacher invited the students to summarize today's lesson. The teacher reflected on the students' performance. After that, the teacher gave a post-test consisting of 10 multiple-choice questions. After completing the questions, the teacher invited the students to do an ice-breaking activity called “Tepuk WOW.” The lesson ended, and the teacher expressed her gratitude and said her closing remarks to end today's lesson.

c. Observation

At this stage, observation activities were carried out simultaneously during the learning process. The researcher observed the learning situation of students in science learning with the material on Plant Parts.

d. Reflection

After the second cycle of learning was completed, the researcher conducted a reflection. Of the 25 fourth-grade students at SD N 61 Lubuklinggau, 22 students (88%) successfully achieved the learning outcome criteria (KKTP) and were declared to have completed the cycle. Meanwhile, 3 students (12%) scored below the KKTP (<70) and were declared to have not completed the cycle.

The results of the post-test in cycle II showed the highest score of 100 and the lowest score of 50 with an average score of 87.6 (88%). Based on this data, the students who achieved the KKTP in cycle II exceeded the set standard, which was 70% of the total students. Therefore, the discussion of this material was considered sufficient up to cycle II.

Discussion

This study used the make a match cooperative learning model in an effort to improve science learning outcomes in chapter 1 of the material on Plant Parts and Their Functions. This study was conducted over two cycles, with each cycle applying the make a match cooperative learning model. This section presents a bar chart summarizing the percentage of science learning outcomes as described above to facilitate understanding and comparison of the results of each cycle. The following bar chart summarizes the percentage of science learning outcomes in each cycle.

Figure 4.3 Summary of the percentage of completion for cycles 1 and 2

Based on Figure 4.3, the results of the pre-test and post-test at the beginning and end of cycle 1 learning showed an increase in the average student score from 52 to 69.2. The number of students who did not pass the pre-test in cycle 1, 20 students (20%), increased in the post-test to 17 students (68%). In the post-test of cycle 2, there was another increase in the average score of students to 87.6 with 22 students (88%) passing and 3 students failing. This increase shows that the learning model used began to have a positive impact on student understanding. This shows that the cooperative learning model of the make a match type can improve student learning outcomes.

CONCLUSION

The results of this study definitively indicate an increase in the science learning outcomes of fourth-grade students at SD N 61 Lubuklinggau. This observation was made after implementing the Make a Match learning model with the help of matching cards in science learning. The data supporting this finding is clear and shows a comparison of the average scores of students in the two learning cycles. In cycle I, the average pre-test score of students was 52, with 5 out of 25 students (20%) achieving mastery. After the initial intervention, the average post-test score increased to 69.2 with 17 students (68%) but still did not meet the mastery

criteria. Cycle II showed more significant improvement. The average post-test score of students in this cycle reached 87.6, with 22 students (88%) achieving mastery. This significant improvement confirms that the application of the Make a Match learning media in science learning can achieve learning mastery.

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