The Effect of Outdoor Learning Methods to Improve Students' Understanding of Sciences at Elementary School

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Abstract: This study aims to determine the influence of out-of-class learning methods on improving students' understanding of science in SDK Majamere. This type of research is classroom action research (CAR), with the research method used being the Kemis and McTaggart model, which consists of planning, implementation, observation, and reflection. The approach used is quantitative and qualitative. The subjects in this study were 18 students of class V SDK Majamere. The research instruments used were observation sheets and learning outcome tests. This study showed a significant increase in students' understanding of science. The results of the percentage of student learning completeness increased from 33.3% in cycle I to 77.7% in cycle II. The results of observations of questioning activities increased from 27.7% in cycle I to 72.2% in cycle II. Answering activities increased from 16.6% in cycle I to 88.8% in cycle II. The activity of noting important material increased from 22.2% in cycle I to 55.5% in cycle II. Based on the results of this classroom action research, the impact of out-of-class learning methods can improve the understanding of science in grade V students at SDK Majamere.

Abstrak: Penelitian ini bertujuan untuk mengetahui bagaimana pengaruh metode pembelajaran di luar kelas untuk meningkatkan pemahaman IPAS siswa di SDK Majamere. Jenis penelitian ini adalah Penelitian Tindakan Kelas (PTK) dengan metode penelitian yang digunakan adalah model Kemis and Mc Taggart yaitu perencanaan, pelaksanaan, observasi, dan refleksi. Pendekatan yang digunakan adalah kuantitatif dan kualitatif. Subjek dalam penelitian ini adalah siswa kelas V SDK Majamere yang berjumlah 18 orang. Instrumen penelitian yang digunakan adalah lembar observasi dan tes hasil belajar. Hasil penelitian ini menunjukkan adanya peningkatan yang signifikan pada pemahaman IPAS siswa. Hasil persentase ketuntasan belajar siswa mengalami peningkatan yaitu dari 33,3% pada siklus I menjadi 77,7% pada siklus II. Hasil observasi kegiatan bertanya mengalami peningkatan yaitu dari 27,7% pada siklus I menjadi 72,2% pada siklus II. Kegiatan menjawab mengalami peningkatan yaitu dari 16,6% pada siklus I menjadi 88,8% pada siklus II. Kegiatan mencatat materi penting mengalami peningkatan yaitu 22,2% pada siklus I menjadi 55,5% pada siklus II. Berdasarkan hasil penelitian tindakan kelas ini dapat disimpulkan bahwa dampak dari metode pembelajaran di luar kelas dapat meningkatkan pemahaman IPAS siswa kelas V di SDK Majamere.

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A. Introduction

Education is a conscious and planned effort to create a learning atmosphere and learning process so that students can actively develop their potential in having spiritual and religious strength, self-control, expertise, noble morals, and the abilities needed for themselves, society, nation, and state (Ramdani et al., 2023). Education is the main factor in determining whether a person is good or bad. One of the primary needs that all individuals need is knowledge, which can be developed through education. In formal education, knowledge acquisition is explicitly achieved through the learning process at school. Maximizing students' decision-making skills in various situations is the most important aspect of the learning process. This shows that for students and teachers to gain knowledge, they must actively participate in the learning process (Nur et al., 2023). The knowledge learned includes various fields of science, one of which is science.

Science is a science that studies nature and its contents and interactions in the universe. Implementing science learning can foster various skills, namely, scientific attitudes, critical and creative thinking, and process skills. However, the emphasis on direct experience and the need for reasoning, understanding, and analysis challenge science and scientific-related content. This makes it difficult for teachers to create learning activities that involve students (Rongga et al., 2024). Learning is a combination of humans, objects, facilities, tools, and procedures that influence each other to meet learning objectives. Learning involves the relationship between teachers and students, directly or using learning media to achieve overall behavioral changes (Badriyana et al., 2023).

Science learning significantly impacts students' understanding of scientific ideas at the elementary school level. Science education emphasizes hands-on experience to build skills in investigating and understanding nature. In the classroom, social studies teaching must be experiential. The process of learning science so students can witness nature directly (Trimansyah, 2022). Science is not just learning science in the form of understanding concepts, principles, and facts; it is also trying to carry out the discovery process. Process skills, critical and creative thinking skills, and scientific attitudes must be improved through integrated science teaching (Kua et al., 2024). Implementing science learning can help develop and improve environmental awareness and students' thinking processes.

Superior human resources are produced by a high-quality education system, which can help progress in several disciplines (Dityatulloh & Santoso, 2018). Pedagogical innovation and students' enthusiasm for learning are significant for the quality of the education process. Education is critical because it can provide knowledge and impact the learning activities of students and teachers (Bhala et al., 2024). To improve quality science learning, professionalism is needed for a teacher to design learning methods that support students well and effectively develop their skills. One way to improve the quality of learning is by implementing appropriate learning methods. Learning methods are systems built systematically and structured to support knowledge delivery to students based on the appropriate curriculum and lesson plans (Amir & Sartika, 2017).

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According to Ramdani et al (2023), the technique is how teachers carry out the design, namely achieving the intended learning objectives that have been made as practical or activity-based tasks. Therefore, a teacher who wants to teach in class develops an approach that will be applied during the learning process. Choosing the right approach is very important because the learning approach is essential to achieving learning objectives (Hartini et al., 2022). Before choosing a teaching strategy, an educator must consider several factors, such as the purpose of learning, the nature of the content, the type or format of the activity, student characteristics, time, and the facilities and infrastructure available.

Learning outside the classroom or outdoor study is one of the educational approaches that can be utilized. Learning outside the classroom takes place outside the classroom by utilizing the surrounding environment for educational activities. A learning method or approach is applied by students outside the classroom, such as at home, to help them understand the content (Subroto, 2021). This approach can produce an interesting learning environment for students. Learning outside the classroom is also a teaching method outside the classroom that is by the subject matter being discussed, involving students directly with the surrounding environment. Therefore, experiential learning and environmental education are more important forms of out-of-class education influencing children's knowledge (Gustina, 2023; Yogica et al., 2020).

Based on the observation results found by researchers at SDK Majamere, elementary school teachers rarely encourage students to participate in activities outside the classroom to improve their understanding of science through the use of learning resources around them. Educators and students only learn in the classroom using lecture methods that tend to be boring and cause boredom for students, so learning activities are very uninteresting and monotonous. To achieve the expected learning objectives, teachers must try harder. A low understanding of science is evidenced by student activities in the classroom that are very passive and boring. Based on these problems, teachers' efforts are needed to improve students' understanding of science by motivating students to learn outside the classroom and directly observing things related to lessons in the classroom.

Learning is not only carried out in the classroom but can be collaborated with fun activities outside the classroom. One of the teacher's efforts to achieve learning goals is to make learning more enjoyable by using an out-of-class learning approach that is more interesting for students to improve their understanding. Badriyana et al (2023) revealed that the outdoor learning method improves student learning outcomes which are seen on average after different treatments. Another study conducted by Ali et al (2023) learning outside the classroom or outdoor study is an activity outside the classroom that allows students to interact with the surrounding environment directly to enjoy the experience, intelligence and understanding of students.

Thus, based on the above problems, the general objective of this study is to see how learning activities are in the overall learning process that takes place indoors and outdoors (outside the classroom learning). The objective is to discover how out-of-class learning methods can improve students' understanding of science at SDK Majamere.

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B. Method

The type of research applied is Classroom Action Research (CAR), which is a type of research carried out in class by implementing actions to improve learning and achieve better results than before. This study applies the Kemmis & Mc Taggart CAR model, which consists of planning, action, observing, and reflection. The following figure shows the CAR design in Cycle I and Cycle I.

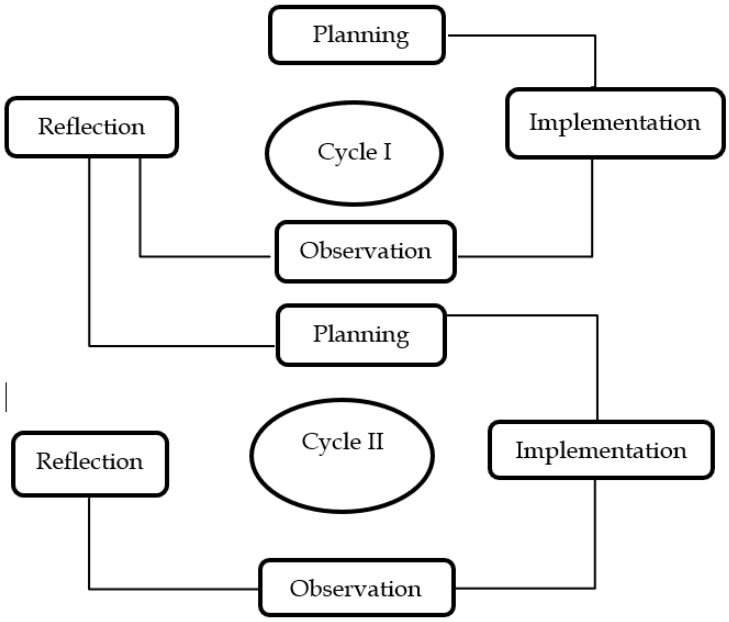

Figure 1. PTK Cycle Diagram

Based on the diagram above, it is divided into two cycles, which include four stages, namely:

1. Cycle I

a. Planning stage

The researcher observed the learning methods usually used by teachers at SDK Majamere. From the observation results, it was found that, in general, the lecture method was implemented without implementing learning media that helped students' understanding, so they quickly got bored and preferred to talk to friends and ignore the teacher's instructions. Observation helped the researcher to identify what methods could be used to improve students' understanding of science.

b. Action stage

In this action, the researcher acted as a teacher according to the predetermined plan. At this point, the researcher used a non-classroom learning strategy to observe the improvement of students' understanding of science by directly seeing and experiencing the science material being taught.

c. Observation stage

In the observation activity, the researcher tracked students' actions during learning, including asking, answering, and recording important material. The assessment took

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place through the use of observation sheets. The researcher observed activities during implementation and documented student involvement to gather information.

d. Reflection stage
Reflection is carried out to evaluate how well the methods that have been implemented have influenced students' learning activities. The researcher conducted reflection by evaluating the extent of students' understanding of the learning methods outside the classroom. Through the implementation of reflection, the researcher identified students' problems or weaknesses related to implementing learning. This can be used as a source of evaluation and improvement for the next cycle.

2. Cycle II
With the addition of deficiencies due to reflection on Cycle I, cycle II is essentially the same as the planning and implementation of Cycle I. After learning cycle I was completed, the evaluation stage was carried out in cycle II to see how much change in students' science knowledge existed between cycles I and II. The following formula is used to obtain the results of the presentation in cycles I and II:

$$P = \frac{F}{N} X\ 100\%$$

Information:
P = Percentage sought
F = Total score obtained
N = Total ideal score

This research was conducted at SDK Majamere through research targets of 18 grade V students. Data related to students' understanding of science was collected for this study. The research instruments used were observation sheets and learning outcome tests.

C. Result and Discussion

Result

The results of initial observations show that fifth-grade students' understanding of science in SDK Majamere is low. Therefore, researchers use an out-of-class learning approach to improve students' understanding of science. The learning cycle II cycle, which includes the steps of planning, implementation, observation, and reflection, is the basis of this research methodology. The study results show that students have not generally gone through out-of-class learning during cycle II. In cycle II, researchers implemented improvements that made students more active and appreciate the science subject.

Cycle I

Based on the planning learning is carried out according to the plan, using learning methods outside the classroom. In the planning stage, researchers must know the characteristics of students, prepare the material to be presented, determine what methods will be used, and prepare questions and directions to stimulate student activity. In the action stage of Cycle II, researchers carried out improvements that encouraged students to participate more actively in science lessons. At this stage, the researcher uses out-of-class

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learning methods to improve students' understanding of science by seeing and experiencing what is being learned. The approach to implementing activities using out-of-class learning methods uses the following steps:

Table 1. Approach to Implementing Learning Activities

Learning steps	Teacher activities	Student Activities
Create a fun and meaningful learning experience.	Simulate students with student materials and experiences and involve students in decision-making.	Students can be more courageous when talking about what they experience and expressing their opinions.
Using the environment as a learning resource	Providing students with hands-on experience by learning outside the classroom.	Students are more enthusiastic to learn and focused when learning outside the classroom.
Engage students actively	Involve students to be active in the learning process by using interactive lecture methods.	Collaborate with classmates and teachers, ask questions, and answer questions.

Researchers carried out the observation stage to track how students participated in learning outside the classroom. The reflection stage is carried out to assess and think about the results of activities that have been carried out and what actions will be taken for the next learning activity. According to the results of observations and tests, most of my learning cycle goals have not been achieved. Observed student activities included asking, answering, and recording important information. The following table shows the student activities observed during the cycle I.

Table 2. Observed Student Activities in Cycle I

Observed Student Activities	Number of Students Active in Observed Activities Results Percentage	of Student Activities in Cycle I
Asking Activities	5 people	27.7%
Answering Activities	3 people	16,6%
Note-taking Activities Important Materials	4 people	22,2%

The cycle I result showed that 27.7% asked questions, 16.6% responded to activities, and 22.2% recorded relevant information. Improvements were made in cycle II because the results of observations of student activities in cycle I using learning methods outside the classroom showed that the number of student presentations was still very low.

Cycle II

Continued in Cycle II, especially through observing science subjects after learning outside the classroom was implemented. This shows that teachers can utilize the surrounding environment together through learning methods outside the classroom to increase students' understanding of science and technology and create a fun, interesting, and positive learning environment for students. Learning methods outside the classroom have

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proven to be effective through excellent success. The observed student activities are asking questions, responding, and recording important information. The table of student activities seen during cycle II can be seen below.

Table 3. Observed Student Activities in Cycle II

Observed Student Activities	Number of Students Active in Observed Activities Results of	Percentage of Student Activities in Cycle I
Asking Activities	13 people	72,2%
Answering Activities	16 people	88,8%
Note-taking Activities Important Materials	10 people	55,5%

Based on cycle II, 72.2% of students asked questions, 88.8% completed assignments, and 55.5% recorded actions, including important subjects. The frequency of student presentations in learning activities outside the classroom has increased due to cycle II student activities. The following table shows the increase in student activity in cycles I and II:

Table 4. Increase in Percentage of Student Activities Observed in Cycle I and Cycle II

Observed Student Activities	Percentage Results in Cycle I	Percentage Results in Cycle II	Increase in Percentage in Cycle I and Cycle II
Asking Activities	27,7%	72,2%	45%
Answering Activities	16,6%	88,8%	72,2%
Note-taking Activities Important Materials	22,2%	55,5%	33,3%

Based on Table 4, the increase in the percentage of student actions observed in cycle I and cycle II is presented in the following diagram:

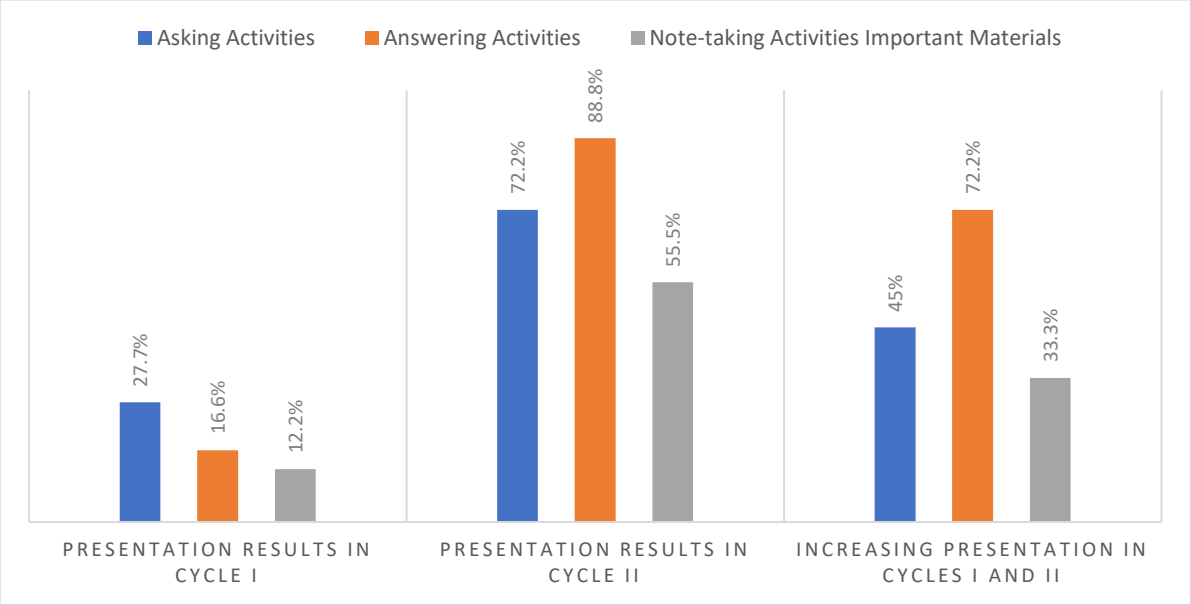

Figure 2. Percentage of Student Actions Observed in Cycle I and Cycle II

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Based on the results of Table 4 and the diagram, it can be explained that the percentage increase in cycle I and cycle II was 45% from asking questions, 72.2% from answering, and 33.3% from recording important material. Learning outside the elementary school level determines how students understand science. Learning outcomes can be defined as the level of student success in learning something as shown by test scores. Tests are carried out at the end of each cycle. From the percentage of student activity above, it shows that the average value of the following table shows student achievement:

Table 5. Percentage of Complete Learning Outcomes

Student Learning Outcomes	Meeting	
	Cycle I	Cycle II
The highest score	60	80
Lowest Value	40	50
Average	27,7	70,27
Number of Students Completed	6	14
Number of Students Not Completed	12	4
Completion Percentage	33,3%	77,7%

Based on Table 5, the completeness of student learning outcomes is presented in the following diagram:

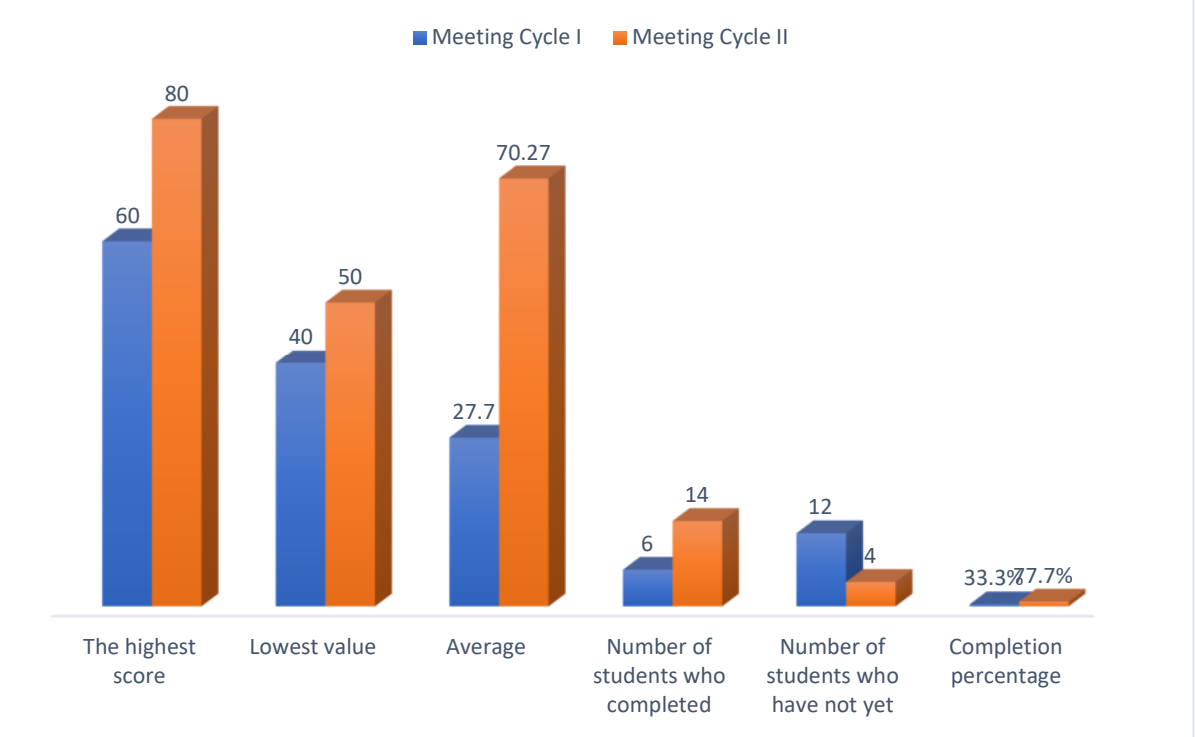

Figure 3. Meeting Cycle I and Cycle II

The percentage of completeness of student learning outcomes progressed from 33.3% from cycle I to 77.7% in cycle II.

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Discussion

Based on research findings, progress has been made to improve students' understanding of science and science through using learning methods outside the classroom. In cycle I, students' understanding of science and science was still low. In cycle II there was an increase. This increase is due to learning methods outside the classroom that make students more active and have more fun. This is supported by Husamah (2013) research that utilizing and studying the natural environment can help students understand the lessons taught at school and form a sense of love and awareness of the importance of protecting the environment. Ali et al (2023) said that learning outside the classroom is fun because this activity allows students to maximize their potential and interact with nature, so that students will be interested in participating in science learning.

Students can improve their understanding of lessons with science and technology subjects so they not only learn about the material or concepts but also learn about the role of science and science in real life (Lopa et al., 2024). Science learning cannot be separated from students' experiences and daily environment. This is in line with research conducted by Kua (2018), which confirms that students can be more interested in learning when the material being studied has a connection to the real world. Therefore, students gain knowledge of what they see by encouraging students to study outside the classroom by directly changing learning to make it more interesting and enjoyable. Nggia et al (2023) stated that the aim of learning science and science is so that students can not only know and understand ideas, but can also connect the knowledge learned through real-world situations.

This research was carried out over two meetings and two cycles. In cycle I, the instructor discussed the material with certain students, paying attention to the teacher's explanation. In contrast, other students did not pay attention and preferred to be busy themselves and play or chat with friends beside them. When something is not understood, some students choose not to ask. Students remain reluctant to respond when the teacher asks questions; others are completely incapable of responding. Laksana (2019) states that understanding and preparation, motivation to learn, and repetition of lesson material influence learning outcomes. Amaludin et al (2023) stated that to achieve certain learning objectives, an approach must be used simultaneously through learning methods. The better the method, the more effective it is to achieve learning objectives, which ultimately results in increased student achievement and understanding of learning. Utilizing learning strategies outside the classroom is one way to overcome this problem.

The learning method outside the classroom allows students to directly observe and experience objects outside the classroom or in real life (Yuliyanti, 2020). In cycle II, researchers emphasized students' understanding of science and technology by applying learning outside the classroom and experiencing improvement. Efendi et al (2023) stated that understanding is a general program tool that shows proficiency to help students become proficient in various scientific domains. From the learning carried out, researchers conducted tests in each cycle, starting from cycles I and II, to determine how well students understood the lesson material. Based on this test, it can be seen that the percentage of student learning

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outcomes increased from 33.3% in cycle I to 77.7% in cycle II. This is in line with the study by Yanti et al (2022) that because of the outdoor learning approach, student learning outcomes can be improved by providing alternative learning experiences by involving students and intimate experiences with the content to create a more memorable experience. Sela et al (2024) stated that the outdoor learning method could improve students' understanding of the material in a more interactive and fun way than indoor learning methods.

This research proves that learning outside the classroom can improve students' understanding of science and technology. In line with a study by Egok et al (2021), outdoor learning is a way for teachers to improve children's learning skills by creating interesting and fun learning. Setiawati et al (2023) stated that using outdoor learning methods effectively increased significant learning outcomes. Students are more involved by using learning methods outside the classroom and want to learn and know new things. Therefore, education is not the only process of gaining knowledge. However, education is an effort to improve children's understanding, behavior and confidence in their skills.

D. Conclusion

Based on the results of Classroom Action Research (PTK), it can be said that learning strategies outside the classroom can provide a pleasant learning experience, motivate students, and increase their understanding of science in depth because they provide opportunities for students to be involved in direct observation and interaction with the environment. This shows that teachers can utilize the natural environment with learning methods outside the classroom to increase students' understanding of science and technology and create a fun, interesting, and positive learning environment.

The research results show that learning methods outside the classroom can positively impact students. Students can study and see firsthand what they are learning in an effort to improve their understanding of IPAS. This is proven by an increase in the percentage of complete learning outcomes from 33.3% in cycle I and 77.7% in cycle II. Learning methods outside the classroom have proven effective and have had excellent success.

Educators must pay attention to and prepare appropriate learning needs before the learning process begins, using models, techniques, and methods that align with the material to be delivered. This research is still not perfect, and not all science and science learning aspects have been researched using learning methods outside the classroom, so researchers need to continue developing this research according to their needs.

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