

IMPROVING THE ACTIVENESS OF GRADE V STUDENTS IN SCIENCE LEARNING WITH INTERACTIVE METHODS ON PLANT REPRODUCTION MATERIAL ENHANCING FIFTH-GRADE

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Abstrak

Di jenjang pendidikan dasar, Ilmu Pengetahuan Alam (IPA) merupakan mata pelajaran penting yang memberikan pemahaman kepada siswa tentang dunia alam sekaligus melatih kemampuan berpikir kritis dan analitis. Namun, banyak guru masih menggunakan pendekatan pembelajaran satu arah yang konvensional, sehingga siswa hanya berperan sebagai pendengar pasif dan kurang terlibat dalam proses belajar. Penelitian ini bertujuan untuk meningkatkan minat dan partisipasi siswa kelas 5 SDN Pemurus Baru 3 Banjarmasin dalam pembelajaran IPA, khususnya pada materi perkembangbiakan tumbuhan, melalui penerapan media pembelajaran. Penelitian Tindakan Kelas (PTK) ini dilakukan dalam tiga siklus dengan melibatkan 15 siswa. Hasil penelitian menunjukkan bahwa metode pembelajaran interaktif berhasil meningkatkan hasil belajar dan partisipasi siswa pada materi bagian tumbuhan. Pada siklus pertama, rata-rata nilai siswa hanya mencapai 62,5 dengan persentase ketuntasan 50%, yang mencerminkan rendahnya partisipasi siswa. Setelah dilakukan evaluasi dan perbaikan pada siklus kedua, penerapan metode interaktif seperti diskusi kelompok dan permainan edukatif menghasilkan peningkatan signifikan. Rata-rata nilai siswa naik menjadi 75 dengan persentase ketuntasan mencapai 80%. Siswa menjadi lebih aktif terlibat dalam pembelajaran, yang menunjukkan adanya peningkatan minat belajar mereka. Pada siklus ketiga, hasil belajar siswa mencapai rata-rata nilai 85 dengan ketuntasan 100%, mencerminkan peningkatan yang signifikan dalam pemahaman konsep dan keaktifan siswa. Penelitian ini membuktikan bahwa penggunaan media pembelajaran interaktif efektif membantu siswa memahami konsep pembelajaran dengan lebih baik.

Abstract

At the primary education level, Science is an important subject that provides students with an understanding of the natural world as well as training their critical and analytical thinking skills. However, many teachers still use a conventional one-way learning approach, so that students only act as passive listeners and are less involved in the learning process. This study aims to increase the interest and participation of 5th grade students of SDN Pemurus Baru 3 Banjarmasin in learning science, especially on plant reproduction material, through the application of learning media. This Classroom Action Research (CAR) was conducted in three cycles involving 15 students.

The results showed that the interactive learning method succeeded in improving learning outcomes and student participation in plant parts material. In the first cycle, the average student score only reached 62.5 with a 50% percentage of



completeness, reflecting low student participation. After evaluation and improvement in the second cycle, the application of interactive methods such as group discussions and educational games resulted in significant improvements. The average student score rose to 75 with the percentage of completeness reaching 80%. Students became more actively involved in learning, which showed an increase in their interest in learning. In the third cycle, student learning outcomes reached an average score of 85 with 100% completeness, reflecting significant improvements in concept understanding and student engagement. This research proves that the use of interactive learning media is effective in helping students understand learning concepts better.

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INTRODUCTION

High-quality education plays an important role in human resource development, especially at the elementary education level. Natural Science (IPA) learning serves to help students understand natural phenomena and their surroundings. However, fifth grade students of SDN Pemurus Baru 3 Banjarmasin are often less active in following science lessons because the learning methods are less interesting and have minimal interactivity. As a result, students become less involved in the learning process.

Jean Piaget, in his theory of cognitive development in 1936, stated that children are not empty vessels that are only filled with knowledge. Instead, children actively learn about the world through personal experiences and interactions with their surroundings. According to Piaget, four factors that support children's cognitive development include balance, physical experience, social experience, and maturity. Physical experience, for example, is very relevant in science learning because children understand scientific concepts through direct exploration of their environment.

Piaget's theory also supports the importance of an active learning approach. Students gain better understanding when they are given the opportunity to discover new concepts on their own. By using learning strategies that encourage exploration and discovery, students will be more motivated and will have a better understanding of science material. Teachers can create more engaging learning by integrating innovative methods such as props, hands-on experiments, and group discussions. Piaget and Bruner's theories also emphasize the importance of learning that combines social interaction and hands-on experience, allowing students to be more active participants and improve their understanding of scientific concepts.

In V SDN Pemurus Baru 3 Banjarmasin, student participation in science learning is still a major challenge. Based on research, one of the causes of low student engagement is monotonous and less interactive teaching methods. This is in line with the findings of Rokiyah and Budiastira (2021), which state that a learning approach that is not varied can reduce students' interest in being active in class. Darniyanti et al. (2021) also revealed that a less interesting approach can reduce student engagement in learning.

To overcome these problems, more creative and interactive learning methods are needed. Interactive learning methods involve students actively in the learning process, making them not only passive listeners, but also active participants in exploration and discussion, especially on material about plant parts.

This study recommends an interactive learning approach as a solution. This approach includes the use of educational games that make learning more fun, group discussions to encourage brainstorming among students, and technology such as learning videos to increase the appeal of the material. Previous studies have proven the effectiveness of this method, as shown in Sari's study, where the use of interactive learning successfully increased students' grades at SDN 40 Pekanbaru from an average of 69.54 to 80.60.

METHOD

This research was conducted in a classroom. According to Sukardi HM (2020), classroom action research is an effort to observe how a group of students learn through intentionally designed actions (therapy). This study aims to improve the mathematics learning process in class V of SDN Pemurus Baru 3 Banjarmasin, South Kalimantan Province. In its implementation, a cooperative learning approach with various learning media is used. This approach aims to increase student interest and participation in science subjects, especially plant reproduction material.

This study involved 15 students of grade V SDN Pemurus Baru 3 Banjarmasin, consisting of 5 female students and 10 male students. Data collection was carried out using two methods, namely tests and observations. Interactive tests were used to evaluate students' understanding of plant reproduction material, while observations were used to observe students' and teachers' activities during the learning process.

This research was conducted in three cycles involving four main stages: planning, implementation of action, observation, and reflection. In the planning stage, the researcher identified problems that needed to be solved in learning, formulated the objectives to be achieved, and prepared an experimental plan. This plan includes the design of the learning implementation and the evaluation tools to be used.

After the planning stage, the researcher proceeds to the implementation stage of the action, where the cooperative learning approach with supporting media is applied. The researcher ensures that every aspect of learning runs according to the plan that has been prepared. The next stage is observation, where the researcher makes direct observations of the teaching and learning process to assess the effects of the actions given. Data obtained from observations are very important to evaluate the effectiveness of the learning strategies used.

The final stage is reflection. At this stage, the researcher evaluates the results of the observation to assess the impact of the actions taken and to prepare an improvement plan for the next cycle. Through this cycle, it is expected that there will be an increase in the effectiveness of learning, thus creating a better learning environment for students.



RESULTS AND DISCUSSION

The results of the student learning evaluation in the first cycle showed that only half of the students managed to achieve the Minimum Completion Criteria (KKM). The average student score only reached 62.5 with a completion percentage of 50%. This indicates that students' understanding of the science material presented is still low. The table below summarizes student learning outcomes in cycle I:

Table 1. Learning Results of Cycle I

Information	Number of Students	Percentage
Completed	8	53,33%
Not finished	7	44,66%

Of the total 15 students, there were 8 students who managed to achieve learning completion, indicating that about half of the students were able to understand the material well. However, there were still 7 students who had not achieved completion, indicating that they had difficulty in understanding the material being taught. This imbalance indicates the need for priority on more effective learning strategies, so that more students can understand and master the lessons well.

Through observations during the learning process, several important dynamics were found in the classroom. First, student participation tends to be passive and less involved in learning activities or discussions. Students more often act as listeners than actively participate in discussions or practical activities. Mea (2024) stated that this condition makes the classroom atmosphere less active. In addition, students' interest in science learning appears low; many students seem unenthusiastic or less eager to follow the lesson. The use of traditional teaching methods, such as lectures and giving written assignments, can be one of the causes of this lack of enthusiasm. Therefore, evaluation and improvement are needed in the teaching approach to increase student involvement and interest in science learning.

Based on the results of observations and evaluations, several main factors causing low student participation and learning outcomes were identified. One of the main causes is the use of uninteresting teaching methods; traditional methods often make students feel bored and less involved in the learning process. In addition, low practical activities are also a problem. When there are no experiments or practical activities to support learning, students tend to have difficulty understanding the theories taught, especially in relating learning to the real world around them. Another factor is the lack of social interaction in the classroom. Not being involved in discussions or group work makes students more passive. These factors are interrelated and indicate that changes in learning methods are needed to improve student participation and learning outcomes.

To improve student participation and learning outcomes in the next cycle, improvements are needed based on the findings of the first cycle. A more interactive learning approach, such as project-based or inquiry-based learning, can encourage students to be more actively involved

in the learning process. Suggested follow-up plans include increasing the use of teaching aids and practical experiments to make learning materials more interesting and relevant to students. In addition, encouraging group discussions and collaboration between students is one of the main focuses in creating a more interactive learning environment. By implementing these steps, it is hoped that student participation and learning outcomes can increase significantly.

In the second cycle, after conducting reflection and improvement based on the results of the first cycle, the evaluation results showed a significant increase in student learning outcomes. The average student score increased to 75, and the percentage of completion reached 80%. This increase indicates that more students have successfully met the Minimum Completion Criteria (KKM) set. The following table presents student learning outcomes in cycle II.

Table 2. Learning Results of Cycle II

Information	Number of Students	Percentage
Completed	12	80%
Not finished	3	20%

The results of the analysis of student learning in cycle II showed that twelve students successfully achieved learning completion. This is a significant increase compared to cycle I, where only eight students achieved completion. This increase reflects the effectiveness of the improvements that have been made. On the other hand, the number of students who have not completed has decreased to only three people. This decrease shows that more students are able to understand the subject matter. Thus, these results show positive progress in learning and provide encouragement to continue to improve the quality of teaching so that all students can achieve completion.

Observations during the second cycle revealed several positive findings indicating significant progress. One of the main things that was seen was the increase in student participation, which was much more active compared to the first cycle. The learning atmosphere became more dynamic because students participated in educational games and actively contributed to group discussions. In addition, students' interest in science learning increased significantly. Many students appeared enthusiastic, especially when discussing material about plants. Educational games and group discussions are effective interactive learning methods to attract students' attention and increase their involvement in the learning process.

Several factors support the increase in student participation and learning outcomes in the second cycle. Interactive teaching methods make learning more interesting and enjoyable for students. Practical activities provide opportunities for students to interact directly with learning materials, which in turn helps them understand the concept of plants better. In addition, a supportive learning atmosphere also plays an important role. An environment that encourages students to collaborate, speak up, and feel comfortable asking questions and sharing opinions creates a more effective learning experience.



Various studies support the benefits of interactive learning in improving student participation and learning outcomes. For example, Ramadhayani's (2020) study showed that a group-based learning approach involving practical activities, discussions, and presentations successfully improved students' understanding of plant material in grade V of elementary school. The results of this study revealed that students who participated in interactive learning had better understanding compared to students who learned using conventional methods. Utomo's (2023) study also highlighted the importance of creating a supportive learning environment during the interactive learning process. In his study, Prasetyo found that classes designed to encourage cooperation and communication between students allowed students to feel comfortable asking questions and sharing opinions. This made them more motivated to actively participate in learning activities. These studies confirm that an interactive learning approach supported by a positive learning environment can significantly improve student participation and learning outcomes, especially in understanding complex concepts such as plants.

To maintain and improve student learning outcomes in the future, the use of interactive learning methods will continue, by adding new activities such as field projects and visits to the school garden. The results of cycle II showed promising developments. In addition, parental involvement will be further enhanced by providing information about the subject matter and activities carried out in the classroom. Regular evaluations will also be carried out to monitor student progress and adjust teaching methods to suit their needs.

Table 3. Learning Results of Cycle III

Information	Number of Students	Percentage
Completed	15	100%
Not finished	0	0%

Based on the analysis of student learning outcomes in cycle III, all students successfully achieved learning completion. This achievement is a remarkable progress compared to the previous cycle, where only 12 students achieved completion. This success shows that the learning strategy implemented is very effective, and students are actively involved in the learning process. All students are able to understand the material well and meet the Minimum Completion Criteria (KKM), without any students failing. With a completion percentage of 100%, this result shows a very positive development in learning, as well as evidence that the teaching method used is worthy of being maintained and developed in the future.

Observations during the third cycle also showed very encouraging results. Students were actively involved in all learning activities, including discussions, experiments, and educational games. Their participation in learning activities was very high, creating a dynamic learning atmosphere. In addition, students' interest and enthusiasm for science learning increased significantly. They showed great curiosity and enthusiasm for learning new scientific concepts. Students' creativity was evident in the way they conveyed the results of group discussions. Not only did they understand the material better, they were also able to explain the concepts through practical meaning and interesting visual presentations.

Several key factors supported the success of students in this third cycle. First, the interactive learning practices that were consistently implemented since the previous cycle continued to produce positive results. Students felt more comfortable working together and sharing ideas, while regular discussion groups helped them improve their social and communication skills. This also increased students' confidence in expressing their opinions. In addition, a positive and collaborative learning environment encouraged students to actively participate and try new things with more confidence.

Previous research also supports this finding, showing that several key components, especially in cycle-based learning, can significantly improve student participation and learning outcomes. For example, classroom action research at SDN Manukan Kulon II by Zulfiana & Wandik (2023) revealed that the use of learning models *Team Quiz* significantly improve student learning outcomes. In the first cycle, teacher activity reached 63.04 percent and student learning outcomes were 61.61 percent. However, in the third cycle, teacher activity increased to 94.56 percent, while student learning outcomes reached 92.15 percent. This shows a consistent increase in both student engagement and understanding.

Other studies that applied the discussion approach also showed similar benefits. The learning outcomes of students in grade V of elementary school increased significantly after the discussion method was applied for three cycles. The average score of students increased from 56 in the first cycle to better scores in subsequent cycles. This finding confirms that interactive learning not only increases student participation but also their self-confidence.

Overall, this study shows that interactive learning strategies, supported by a positive learning environment and collaborative techniques, are important components in improving student achievement and participation in the classroom. The results of this study are evidence that innovative and interactive learning methods can significantly improve student achievement. The following are the results of the study:

Table 4. Research result

Cycle	Average Value	Percentage of Completion	Student Activities	Notes
Cycle I	62,5	50%	Low	Dominant lecture method: students participate less actively
Cycle II	75,0	80%	Increased	Application of the method interactive” students are more active and involved in discussions
Cycle III	85,0	100%	Very high	All students are involved” understanding of the material increases significantly



The results of the first cycle analysis showed that the average student score was only 62.5 and the percentage of completion was 50%. These figures indicate that the learning approach used is still traditional and does not attract students' attention. Students are often passive and not actively involved in learning, according to classroom observations. This indicates that changes must be made to improve the quality of education.

The second cycle showed encouraging results after reflection and improvement. The average score of students increased to 75, and the percentage of completion also increased to 80%. Interactive learning such as group discussions and educational games have succeeded in attracting students' attention. They began to actively ask questions and talk about plant materials, indicating that they were more involved in learning.

During the third cycle, student achievement continued to increase. Their average score was 85, and the percentage of completion was 100%, or perfect. Not only did they understand science concepts better, but they were also very creative in conveying the results of group discussions. This success shows that changes in learning methods can have a positive impact on student motivation and achievement.

According to the data and research results, interactive learning methods can increase student participation in science lessons on plant parts. These results are in accordance with previous research by Ardian and Abdah (2013), which found that the use of interactive media can improve students' abilities in science subjects.

Research conducted by Susanto (2012) conducted research at SD Negeri Wotan 02 Sukolilo Pati which aims to improve the motivation to learn science of grade IV students. This study uses an interactive learning model and shows positive results in increasing motivation and student involvement in the teaching and learning process. Likewise with the results of research conducted by Umar W This research was conducted at SDN 15 Ampa, with a focus on improving student learning outcomes through interactive learning. The results of the study showed that there was an increase in learning completeness from cycle I to cycle II, with student and teacher activities also increasing significantly.

In addition, in Lilis Suryani's research (2024), the interactive learning model was used to teach science at MTS Negeri Palembang. The results showed that student learning performance increased significantly after using this method, and students were more interested in learning. According to another study conducted by Widiyanto (2017), at SDN Kemuning Lor 02 Jember, the interactive learning model with miniature media improved student learning outcomes in various aspects, such as effective and cognitive.

CONCLUSION AND RECOMMENDATION

This study shows that interactive learning methods are able to improve student participation and learning outcomes in science subjects, especially in plant propagation material at grade V SDN Pemurus Baru 3 Banjarmasin. Based on the research conducted for three cycles, it was found that interactive approaches, such as group discussions, educational games, and practical experiments, significantly improved students' understanding of the material while encouraging their activeness in the learning process. In the first cycle, the majority of students

had not met the Minimum Completion Criteria (KKM), with low average scores and passive participation. However, after reflection and improvements were made in the second cycle, student learning outcomes showed significant improvement, with more students achieving KKM and their involvement in learning becoming higher. In the third cycle, all students succeeded in achieving learning completeness with very satisfactory average scores and very active participation.

The results of this study are in line with previous studies showing that interactive learning models can improve students' motivation, engagement, and learning achievement. Thus, the application of interactive learning methods has proven effective in improving the quality of science learning, creating a more interesting learning atmosphere, and encouraging students to be more active in participating in learning activities.

Based on these findings, it is recommended to implement an interactive learning approach in learning, especially in science subjects. This approach can include practical experiments, group discussions, and educational games that can improve students' understanding of scientific concepts while increasing their engagement. In addition, the use of various learning media, such as teaching aids and videos, can provide a more realistic and in-depth learning experience for students. It is also important to create a learning atmosphere that supports collaboration, such as group discussions or projects, which can improve students' communication and social skills as well as their self-confidence.

Continuous reflection and improvement of teaching methods is essential to ensure that learning is in line with students' needs. In addition, involving parents in the learning process, for example by providing information related to the material being taught and class activities, is also highly recommended. With this involvement, parents can help their children learn at home and support the achievement of better learning outcomes.

REFERENCES

- Alina, N., & Wathon, A. (2019). Active Learning Through Educational Game Tools. *Management Information System*, 2(2), 29-47.
- Ardian, Y., & Abdah, Y. S. (2013). Interactive Learning Media for IPA Class IV at SD Negeri Karanganyar 02 Paiton Probolinggo. *University of Kanjuruhan Malang*.
- Darniyanti, Y., & Saputra, A. (2021). Analysis of Factors Influencing Student Learning Motivation at Sdn 04 Sitiung. *Consilium: Education And Counseling Journal*, 1(2), 193- 205
- Harefa, D., & Sarumaha, M. (2020). Theory of early introduction to natural science. *Pm Publisher*.
- Hasanah, U., & Zalnur, M. (2024). The Process of Independent Curriculum Learning Innovation at MTs Raudhatul Iman Tebo Jambi. *Raden Fatah Islamic Religious Education Journal*, 6(3), 724-737.
- Harisah, S., & Hikmawati, I. (2020). Reading Comprehension Ability Through the CIRC Method in Grade IV Students of SD Inpres 3 Tondo. *Journal of Education*, 1 (1), 73-84.



- Kusumaningrum, D. (2018). Environmental literacy in the 2013 curriculum and science learning in elementary schools. *Indonesian Journal of Natural Science Education*, 1(2), 57-64.
- Mea, F. (2024). Improving Learning Effectiveness Through Teacher Creativity and Innovation in Creating Dynamic Classes. *Inculco Journal of Christian Education*, 4(3), 252-275.
- Minsih, M. (2018). The role of teachers in classroom management. *Primary education profession*, 5(1), 20-27.
- Miqwati, M., Susilowati, E., & Moonik, J. (2023). Implementation of differentiated learning to improve science learning outcomes in elementary schools. *Your pen: Journal of Elementary School Education*, 1(1), 30-38.
- Nurwida, S. Implementation of Guided Discovery Learning Method in Improving Learning Outcomes of Grade VI Students of SDN 1 Pangkut in the 2017/2018 Academic Year.
- Ramadhayani, N.F. (2020). *The Influence of Interactive Learning Models on Students' Critical Thinking Skills in Science Subjects, Green Plant Material, Amaliyah Elementary School, Medan* (Doctoral dissertation, State Islamic University of North Sumatra).
- Rokiyah, I., & Budiastra, A. K. Learning Theory in Primary School Science Learning.
- Sari, F. R. J. (2023). Application of Interactive Approach in Improving Student Learning Outcomes in Science Learning on the Concept of Characteristics of Living Things in Class III SDN 21 Banawa (Doctoral dissertation, Datokarama State Islamic University, Palu).
- Septikasari, R., & Frasandy, R. N. (2018). 21st century 4C skills in elementary education learning. *Tarbiyah Al-Awlad: JELEMENTARY ISLAMIC EDUCATION JOURNAL*, 8(2), 107-117.
- Suryani, L. (2024). Application of Linearized Algebra in Network Optimization. *Journal of World Science*, 4(7).
- Susanto, D. A. (2012). *Increasing Science Learning Motivation Through Interactive Learning Models for Grade IV Students Semester I SDN Wotan 02 Sukolilo Pati in the 2012/2013 Academic Year* (Doctoral dissertation, Muhammadiyah University of Surakarta).
- Umar, W., Jamhari, M., & Paudi, R. I. Improving Science Learning Outcomes Through Interactive Learning of Grade IV Students of SDN 15 Ampana. *Improving Science Learning Outcomes Through Interactive Learning of Grade IV Students of SDN 15 Ampana. Creative Journal Online*, 4(4).
- Utomo, F. T. S. (2023). Interactive Learning Media Innovation to Improve the Effectiveness of Digital Era Learning in Elementary Schools. *Pendas: Scientific Journal of Elementary Education*, 8(2), 3635-3645.

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- Widiantono, N. (2017). Application of interactive learning models to improve the activities and science learning outcomes of grade 5 elementary school students. *Scholaria: Journal of Education and Culture*, 7(3), 199-213.
- Zulfiana, Z., Mintohari, M., & Wandik, W. (2023). Improving Learning Outcomes of Class II-A Students on Energy and Its Changes in Indonesian Language Lessons Through the Team Quiz Learning Model at SDN Manukan Kulon II/499 Surabaya. *EDUCATIONAL JOURNAL: General and Specific Research*, 3(2), 191-203.