DHARMA ACARIYA NUSANTARA : Jurnal Pendidikan, Bahasa dan Budaya
Vol.1, No.2 September 2023
e-ISSN: 2985-962X; p-ISSN: 2986-0393, Hal 94-102
DOI: https://doi.org/10.47861/jdan.v1i2.485

Application Of The Inquiry Learning Model In Improving Student Learning Outcomes In Biology Science Learning At SMP Negeri 6 Tondano

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Abstract. *Inquiry-based learning refers to a sequence of educational activities that aim to fully engage students in methodical, critical, logical, and analytical processes of searching and investigating. The ultimate goal is for students to independently develop their own discoveries with a high level of confidence. This study aims to find out the students' mastery learning results by using the inquiry learning model in which the material is related to the structure and function of plant parts. This research is classroom action research. This research was conducted at SMP Negeri 6 Tondano. The research subjects were class VIII students, totaling 27 people. The results showed that the percentage of learning completeness in cycle I was 29.63% with an average score of 60.62, and cycle II was 92.60% with an average score of 81.07. The results of this study indicate that learning the structure and function of plant parts using the inquiry learning model can improve student learning outcomes.*

Keywords: *Learning Model, Inquiry, Student Outcome, Biology*

Abstrak. Pembelajaran mengacu pada serangkaian kegiatan pendidikan yang bertujuan untuk sepenuhnya melibatkan siswa dalam proses pencarian dan penyelidikan yang metodis, kritis, logis, dan analitis. Tujuan utamanya adalah agar siswa dapat secara mandiri mengembangkan penemuannya sendiri dengan tingkat percaya diri yang tinggi. Penelitian ini memiliki tujuan agar dapat mengetahui hasil ketuntasan belajar peserta didik dengan menggunakan model pembelajaran inkuiri yang dimana materi yang berkaitan yaitu materi Struktur dan fungsi bagian-bagian tumbuhan. Penelitian ini merupakan penelitian tindakan kelas. Penelitian ini dilaksanakan di SMP Negeri 6 Tondano. Subjek penelitian yaitu siswa kelas VIII yang berjumlah 27 orang. Hasil penelitian menunjukkan persentase ketuntasan belajar siklus I yaitu 29,63% dengan rata-rata nilai 60,62 dan siklus II yaitu 92,60% dengan nilai rata-rata 81,07. Hasil penelitian ini menunjukkan pembelajaran materi Struktur dan fungsi bagian-bagian tumbuhan dengan menggunakan model pembelajaran inkuiri dapat meningkatkan hasil belajar siswa.

Kata Kunci : Model Pembelajaran, Inkuiri, Hasil Belajar, Biologi

INTRODUCTION

Education is a fundamental requirement for individuals to cultivate their inherent capabilities and expand their knowledge through many established methods that are acknowledged and valued within the broader social context. Education is a deliberate and systematic endeavor aimed at fostering an environment conducive to the process of learning, wherein students actively cultivate their inherent capacities to acquire religious and spiritual fortitude, self-regulation, intellectual acumen, virtuous ethics, and the requisite proficiencies

Received Juli 22, 2023; Revised Agustus 21, 2023; Accepted September 21, 2023
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necessary for personal, societal, national, and state development (as stipulated in Article 1, Paragraph 1 of Law Number 20 of 2003 pertaining to the National Education System).

The importance of education necessitates the implementation of a pedagogical approach that involves direct interaction with students, fostering relationships that contribute to the development of their personalities, attitudes, behavior, and capacity to effectively engage with the lessons taught in school. Kokom (2011) and Ayudia (2017) suggest that learning can be conceptualized as a systematic process in which students or learning topics engage. This process involves careful planning, design, implementation, and evaluation, with the ultimate aim of enabling subjects or learners to successfully and efficiently attain their learning objectives.

Inquiry-based learning is an instructional approach employed by educators to engage students in actively responding to lessons and cultivating critical thinking skills, creativity, and self-assurance in problem-solving. According to Sanjaya (2008) as cited in Haryanti (2014), the concept of inquiry places emphasis on the utilization of critical thinking and analytical skills in order to actively pursue and discover solutions to a given situation. In the context of education, the process of learning is characterized by the meaningful interaction that takes place between students, instructors, and learning resources within a designated learning environment (Sikdiknas, 2003, Article 1, Paragraph 20).

Based on the results of observations on August 23 2022, carried out at the Tondano 6 Public Middle School, it can be seen from the students' learning outcomes in responding to learning, especially the biology subject, which is still relatively low. This can be seen in measuring the results of students' daily tests and mid-semester exams, which are still soft and still need encouragement to improve the learning outcomes of each student. The level of learning success of students in class VIII in responding to and absorbing biology subjects from measurements of around 30 students can be assessed as only around 30% being accepted and understood. In contrast, 70% still needs to be improved. In the learning process, students tend to be passive (silent) without any responsive response from students in the lesson.

On the other hand, teachers tell too many stories unrelated to the subject, which makes students bored with learning. In teacher learning activities, sometimes it could be more varied with interaction between teachers and students, where the teacher only gives a lecture model and then gives assignments to students. Ultimately, the quality and interest in students' learning becomes low, where when the lesson starts, students only play and even tell stories.

Teachers' seriousness in teaching with special techniques is very necessary because, on the one hand, the teacher's way of teaching sometimes makes students lazy about learning, but

on the other hand, environmental influences, such as bad relationships, the impact of technology and information (cell phones, internet and television). Sometimes, there is a tendency not to appreciate and respect each other, and this is where the teacher's role is required in building students' interest in learning. Based on the background of this problem, research was carried out entitled: "Application of the Inquiry Learning Model in Improving Student Learning Outcomes in Biology Science Learning at SMP Negeri 6 Tondano". By applying the inquiry learning model, this research aims to determine whether there has been an increase in biology science learning outcomes for class VIII students at SMP Negeri 6 Tondano on the structure and function of plant parts.

METHOD

The present study was carried out at SMP Negeri 06 Tondano, located in the Minahasa Regency of North Sulawesi. The participants involved in this research were students enrolled in the eighth grade of SMP. The implementation timeframe for the initial semester of the academic year 2022/2023 has been modified to align with the instructional timetable spanning from September to December 2022. Researchers commonly employ classroom action research (PTK) as a methodological approach in their investigations. Classroom action research is conducted with the aim of enhancing the quality of instructional practices within the classroom setting. Classroom action research is a form of inquiry that centers on the educational institution or the pedagogical activities taking place within the classroom setting.

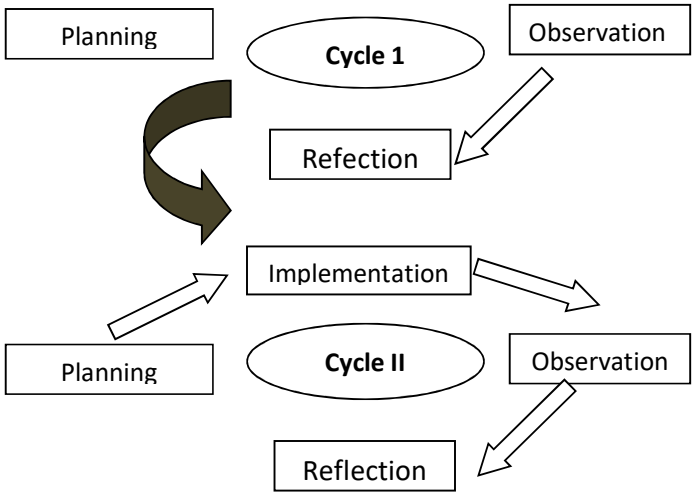

Figure 1. Research cycle

Data collection techniques in this research used quantitative and qualitative. The instruments used to collect data in this research are observation sheets, interviews, and test sheets.

RESULT AND DISCUSSION

A. Result

The study was conducted at SMP Negeri 6 Tondano. The research was conducted over a duration of one month, consisting of two cycles: cycle I and cycle II. Each cycle comprised four stages, namely Planning, Implementation, Observation, and Reflection. The study aimed to enhance the academic performance of eighth-grade students in Biology by implementing the inquiry learning paradigm during offline sessions. Specifically, the research focused on the topic of the Structure and Function of Plant Parts.

Cycle I Research Results

a. Planning

Prepare lesson plans, syllabus, LKPD, and media that will be used during the learning process.

b. Implementation

Learning is carried out offline. Each lesson lasts 2 x 40 minutes. The material is provided using classroom equipment (whiteboard, markers, erasers) with the help of PPT. Student worksheets (LKPD) are then distributed in printed form and explained to students what must be done and prepared.

Before closing the learning process, students are allowed to ask questions, and evaluation is carried out by providing a written test to assess knowledge competency. The evaluation results obtained are:

Table 1. Classical Student Learning Results in Cycle I

No	Value	Frequency	Percentage (%)	Category
1	≥75	8	29,63%	$\geq KKM$
2	≤75	19	70,37%	$\leq KKM$
Total		27	100%	

In Table 1, it can be seen that several students still need to complete their learning, where the number of students who have achieved completeness is only eight people or classically 29.63%. Nineteen students still need to complete or classically 70.37%.

c. Observation

The observation results showed that the results of students' activeness in discussions during learning were less active and also less responsive to every question and answer activity carried out.

d. Reflection on the results of cycle one activities

Based on the Reflection carried out, several problems were found, namely that students were still not active in discussions during the learning process, were not involved in responding to what was explained by the teacher when delivering the lesson, some students did not participate in discussions well, and some students were busy with their cellphones at the time. Learning so that learning is less effective. Based on the problems encountered by the researcher during the learning process described in this reflection process and student learning outcomes that have not yet reached completeness, the researcher will prepare and plan the next action improvement activities (replanning), which will be carried out in the second cycle stage.

Cycle II Research Results

a. Cycle II action planning

The learning process in this cycle is better prepared because some students still need to achieve completeness in the first cycle stage. Every learning plan the teacher implements will motivate students to be more creative and active.

b. Implementation

The core activity is delivering learning media using PPT media. Then, attitude competency is assessed through discussions held to see students' activeness during class discussions. Next, the LKPD was distributed and asked students to record each material from the first meeting to the end and complete each assignment the researcher gave. The researcher would assess each note and work.

Before closing the learning process, students are asked to convey the conclusions obtained during the lesson. Then, a test will be carried out for cycle II through several questions in the form of printed multiple-choice choices to determine the student's achievement of learning completeness as an assessment of knowledge competency. The cycle II test evaluation scores can be seen in the following table:

Table 2. Classical Student Learning Completeness in Cycle II

No	Value	Frequency	Percentage (%)	Category
1	≥75	25	92,60%	$\geq KKM$
2	≤75	2	7,40%	$\leq KKM$
Total		**27**	**100%**	

Table 2 above shows that the completeness of student learning outcomes in cycle II has increased, where 25 students, or classically 92.60%, have achieved fullness. Meanwhile, two students still needed to complete or classically 7.40%.

c. Observation

Observation results show that students are becoming more active in discussions during the learning process, where students are starting to have the courage to express opinions when discussing and have the courage to answer every question in learning and are active in carrying out assignments.

d. Reflection on the results of cycle II activities

The reflection results prove that the results of cycle II have a good increase from cycle I. This is caused by students who are more active than cycle I in the learning process. Students have very good preparation when taking the second cycle test because students study well and actively. At this reflection stage, researchers and biology subject teachers decided not to carry out the next cycle. This was because the results obtained by the students had already reached the expected value.

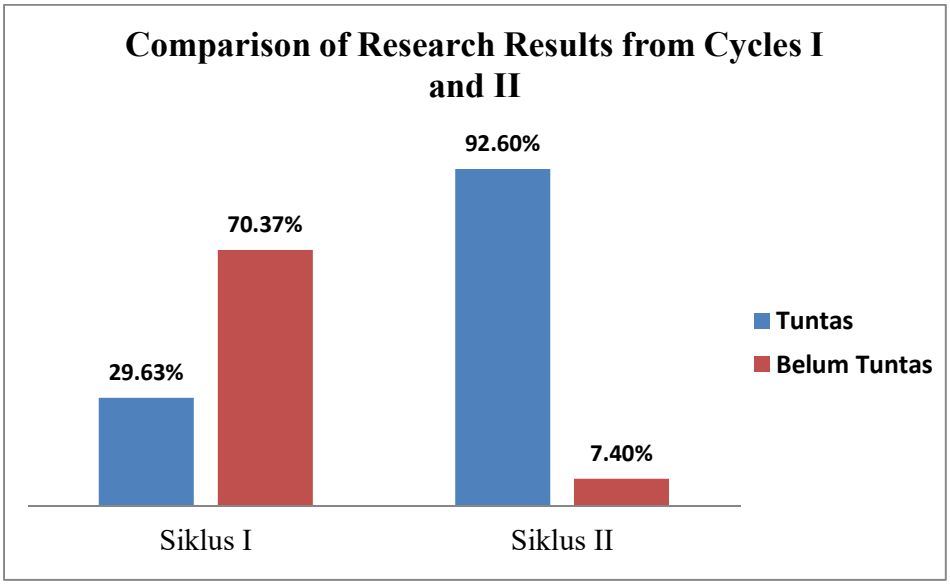

Figure 2. Comparison of Cycle I and II Values

From this diagram, student learning outcomes in cycle I and II show increased or improved learning outcomes. The number of students in class VIII, namely 27 who took part in learning in cycle I and cycle II, showed the average score in process I was 60.62, with a learning completeness percentage of 29.63%. In cycle II, there was an increase in participant learning completeness—students with an average score of 81.07 with a completion percentage of 92.60%.

B. Discussion

Phase I of classical completion has yet to reach the predetermined value, namely 75%. This is caused by students who still play a lot and need to be more optimal in participating in learning activities. Many need to pay more attention when the teacher explains that phones become the centre of their activities during learning, and quite a few students also sleep during education, causing them not to achieve the required completion score. Expected Apart from that, student activity is also very lacking, and students are not familiar with the inquiry model, so while learning, many students are awkward asking questions that learning completeness in cycle I have not been achieved, action planning is carried out in cycle II to improve student interest and learning outcomes.

Phase II of classical completion has reached the expected value of 92.60%. The completeness score increases from stage I because students are used to and already understand the technical techniques of inquiry model learning so that students have started to be active and creative, active during education with a more curious interest in the material being taught so that students are no longer awkward in giving opinions. And ask questions. Because the classical completion of the second cycle has been fulfilled, it will not be continued to the next process. However, especially for students who have not completed the second cycle stage, separate study guidance is carried out during break times so that students who have not completed the second cycle can achieve completeness. However, the results of this improvement should be presented in the research results. The researcher aims to equalize students' knowledge by discussing parts that need to be understood using inquiry learning.

CONCLUSION

Based on the results and discussion above, it can be concluded that the application of the inquiry learning model can provide an increase in the learning outcomes of class VIII students at SMP Negeri 6 Tondano in Biology Science subjects.

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