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IMPROVEMENT OF LEARNING OUTCOMES AND CONCEPTUAL UNDERSTANDING OF GRADE V STUDENTS THROUGH THE USE OF A PROBLEM-BASED LEARNING MODEL ASSISTED BY REALIA MEDIA

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Abstract

In the process of implementing science learning in class V at MIN 2 Nagan Raya, it is still dominated by students who are not able to understand the material well, this is evidenced by the data of student learning observation is still below the KKM, which is 60. The objectives of this study are: (1) to analyze teacher activities, (2) to analyze student activities, (3) to analyze the improvement of concept understanding, (4) to analyze learning outcomes after applying the Problem Based Learning model assisted by realia media in class V MIN 2 Nagan Raya. The

method used in this study is Classroom Action Research (PTK). The data collection techniques used are observation and Test, data analysis techniques used using a percentage formula. The results of the study showed that (1) the activity of teachers in the first cycle obtained a percentage of 82.40% in the second cycle increased with a percentage of 92.59%. (2) Student activity in the first cycle obtained a percentage of 78.70%, increased in the second cycle with a percentage of 89.81%, (3) The results of the concept comprehension test of students in the first cycle were 63.23% and then increased in the second cycle with a percentage of 86.97%, (4) the learning outcomes of students in the first cycle were 52.94% and increased in the second cycle to 92.85%. Thus, it can be concluded that there is an increase in students' understanding of concepts and learning outcomes through the use of the Problem Based Learning model assisted by Realia media in class V MIN 2 Nagan Raya.

Keywords: Conceptual Understanding, Problem Based Learning, Realia Media

Abstrak

Kegiatan pembelajaran IPA di kelas V MIN 2 Nagan Raya, didominasi oleh siswa yang belum mampu memahami materi dengan baik. Ini dibuktikan dengan data hasil belajar siswa yang masih di bawah KKM, yaitu 60. Penelitian ini bertujuan: (1) menganalisis aktivitas guru dan siswa, (3) menganalisis peningkatan pemahaman konsep, (4) menganalisis hasil belajar setelah menerapkan model Pembelajaran Berbasis Masalah berbantu media realia di kelas V MIN 2 Nagan Raya. Metode yang digunakan dalam penelitian ini adalah Penelitian Tindakan Kelas (PTK). Teknik pengumpulan data yang digunakan adalah observasi dan tes, data dianalisis menggunakan rumus persentase. Hasil penelitian menunjukkan bahwa (1) terjadi peningkatan aktivitas guru pada siklus pertama 82,40% dan pada siklus kedua menjadi 59%. (2) Aktivitas siswa pada siklus pertama diperoleh 78,70%, kemudian pada siklus kedua 89,81%. (3) Hasil tes pemahaman konsep siswa pada siklus pertama 63,23%, kemudian pada siklus kedua mencapai 52,94%, dan pada siklus kedua menjadi 92,85%. Diperoleh kesimpulan bahwa terdapat peningkatan pemahaman konsep dan hasil belajar siswa melalui penggunaan model Pembelajaran Berbasis Masalah berbantu media Realia di kelas V MIN 2 Nagan Raya.

Kata Kunci: Pemahaman Konsep, Problem Based Learning, Media Realia

INTRODUCTION

One of the challenges faced in the world of education today is the weak learning processes implemented by teachers in schools. To achieve learning objectives effectively, a teacher must have the ability to apply various effective models and methods. This is important to create an active and enjoyable learning environment, so that students do not feel bored. Teachers play a crucial role as educators in the field of education (Rifai, Islam, dan Firdaus, 2020). To improve the quality of learning in the classroom, teachers need to use learning models that actively involve students in the learning process. The success of students greatly depends on the models and teaching methods used by the teacher. This is because the learning

model can maximize interaction during the material delivery process by the teacher (Oviana, et al. 2023).

One model that is suitable for implementation in learning is the Problem-Based Learning model. The Problem-Based Learning model is a student-centered learning model that begins with the presentation of real problems. These problems are solved through several stages of the scientific method, allowing students to understand a concept through the provided problem, and students are expected to be able to solve the problem (Sofyan Susanto, 2020).

The Problem Based Learning (PBL) model is a learning approach that trains students to develop their ability to solve problems oriented towards real-world issues. Additionally, this Problem Based Learning model encourages students to think critically and become skilled in problem-solving to acquire new knowledge, making it easier for students to understand the concepts being studied (Shoimin, 2020). According to the above perspective, the Problem Based Learning model is a problem-based learning approach that actively involves students in solving problems, thus equipping them with the skills to solve problems and acquire knowledge. This model also offers students the opportunity to understand concepts rather than just memorize them, as the problems presented are real-world issues. he use of learning media in educational activities facilitates teachers in achieving learning objectives. Furthermore, the use of instructional media can also enhance conceptual understanding and student learning outcomes (Rahmi, et al. 2024) One of the media that can be integrated with the Problem Based Learning model is realia media. Realia media are tangible, real objects that can be observed directly and are in their original state, easily recognizable by their authentic form (Novita, 2014). The realia media referred to in this study are actual objects, still in their original state and recognizable in their true form, used in the learning process, such as ice cubes, candles, camphor, eggs, butter, fabric, and spray bottles. The use of the problem-solving learning model will engage students actively in the learning process. This is achieved by training students to think critically and creatively in solving problems, providing opportunities for them to understand concepts in depth rather than just memorizing information. In addition, the integration of realia media in learning provides students with direct experiences. This can enhance conceptual understanding and improve students' learning outcomes.

Based on observations of learning activities carried out in December 2023 at MIN 2 Nagan Raya in west Aceh, during learning, students often talk to their peers and do not pay attention to the teacher's explanations. They also do not show a desire to find out more about the material studied, only accept what is conveyed without the willingness to ask. So far, the use of learning models has been less varied, so that learning becomes monotonous and students are not directly involved in the learning process. Students are often faced with a number of

materials to memorize without being given the opportunity to understand the concepts taught. This has an impact on students' low understanding of concepts, which can be seen when the teacher asks one of the students to repeat the concepts that have been learned. Observation data of learning activities shows that out of 18 students in class V.2, 13 students have not been able to understand the material well. Many of them are unable to restate the concept in their own language, are not yet able to group objects by their properties, or provide other examples of concepts that have been studied, and only answer exactly as they are in the book. They cannot answer questions when asked to explain the material they have learned. Problems were found related to the low understanding of students' concepts. In addition, based on test data, it shows that the majority of students still have learning outcomes under the KKM. This problem is also caused by learning activities that do not involve students actively. This results in the learning process becoming less effective because students do not understand the subject matter being taught. Only a small percentage of students achieved scores above KKM. The KKM set in MIN 2 Nagan Raya is 60.

Related to several studies conducted previously conducted by showing that realia media has a significant influence on the learning outcomes of grade IV MIN 40 students. Furthermore, the research by this research is said to be successful, this is evidenced by the improvement in each cycle, the research conducted by Mulyanti focuses on increasing the understanding of concepts in science subject matter about water discharge. Meanwhile, the research that will be carried out by the researcher is the user of the Desna Fhasya, Jannah, dan Oviana (2023) (Mulyanti and Puspitasari, 2022)*Realia Media-Assisted Problem-Based Learning Model* to Improve Student Concept Understanding and student learning outcomes. In addition, what is done by (Yasin, 2023)*problem-based learning* with learning media, it is obtained that the *problem-based learning* model with learning media is effective in improving problem-solving skills. Meanwhile, the research that will be conducted by the researcher focuses on improving students' understanding of learning concepts and outcomes in science lessons assisted by realia media.

METHODS

This study employs the Classroom Action Research method. Classroom action research is a type of action research conducted by teachers who are also researchers in their own classrooms, or in collaboration with others, by planning, implementing, and reflecting on actions in a collaborative and participatory manner. It consists of four stages: planning, implementation, observation, and reflection (Kunandar, 2008). The aim of this research is to

improve and enhance the quality of the learning process in class V.2 by applying the Problem Based Learning model with the assistance of Realia Media.

This research was conducted at MIN 2 Nagan Raya, located on Jln. Nasional Jeuram Beutong, Seunagan District, Nagan Raya, from January 10-16, 2024. The subjects of the study were all students in class V.2 at MIN 2 Nagan Raya, totaling 18 students, consisting of 15 boys and 3 girls. The data collection techniques used in this study were observation and tests. The instruments used in this research were teacher activity observation sheets, student activity observation sheets, and test sheets. The data analysis techniques employed in this study included analysis of teacher activities, student activities, and test results.

RESULTS AND DISCUSSION

This research was carried out in two cycles consisting of cycle I and cycle II which were carried out from January 10 to 16, 2024, in cycle I the researcher applied the *Problem Based Learning model* assisted by realia media on the material changing the form of learning objects 2 discussing the events of thawing, freezing and evaporating while in cycle II the researcher applied *the Problem Based Learning* modelAssisted by Realia Media on the material of changing the form of learning objects 5 discusses the events of condensation, sublimation and crystallization. In the implementation of this study, teacher activities were observed by Mrs. Cut Meidiyani, S.Pd who is the homeroom teacher of class V.2 while student activities were observed by Mrs. Nufus, Mrs. Mardhalena, Mrs. Dessy and Mrs. Ida teachers at the school.

In Cycle I, there are four stages: planning, implementation, observation, and reflection. Cycle I was conducted over two meetings, which took place on Wednesday from 8:00 to 9:10 and continued in the next period from 10:50 to 11:50. In the planning stage, preparations were made, such as selecting the research class, which is class V, determining the theme and subtheme, selecting the subject matter based on references from journals, deciding on the subject, planning based on book references, and drafting the Lesson Plan (RPP) for Cycle I according to the curriculum. Additionally, learning media, Student Worksheets (LKPD), teacher activity observation sheets, student activity observation sheets, and test sheets were prepared. During the implementation stage, the teacher applied the plans that had been established during the planning stage.

In the observation stage, the teacher's activities applying the Problem Based Learning model with the assistance of realia media were comprehensively assessed. During the introduction, core, and closing activities, using the Problem Based Learning model with Realia Media on Theme 7, Subtheme 1, a percentage score of 87.03% was achieved, which falls into the "Excellent" category. However, there are several aspects that still need improvement in

each activity. In the introduction stage, the teacher was not yet able to effectively communicate the learning objectives to the students and was unable to control the students during the learning process.

Then for the observation of student activity as a whole to student activities. In the Introductory activity, the core and closing activities in learning by applying the Problem Based Learning Assisted by Realia Media model in Telma 7 subtheme 1 obtained a percentage score of 78.70% included in the good category. However, in each activity there are several shortcomings so that improvements are needed in the next cycle.

Based on the results of the students' concept comprehension test in cycle I, it can be found by giving test questions at the end of learning to find out the extent to which students have understood the concepts that have been learned, the questions are made based on three indicators of concept understanding applied in this study, after the answer sheet is scored, a score per indicator will be calculated. Based on the results of concept understanding data in the first cycle, the number of students who understood the concept well amounted to 10 people, while the other 7 students did not understand the concept well. So it can be concluded that in the first cycle, the percentage of students' understanding of concepts by applying the Problem Based Learning model assisted by Media Realia was 63.23%, included in the good category. Based on this data, the research will continue because there are still many students who do not understand the concept well.

Based on the learning outcome test, it was found that there were 9 students who completed and 8 students who did not complete, with the percentage obtained in the first cycle of 52.94% included in the Less category. Based on this data, it was concluded that the learning in the first cycle was not complete because it had not reached the set success indicators.

In cycle II, every activity carried out to improve the shortcomings contained in cycle I, just like cycle I, cycle II also has four stages, namely planning, implementation, observation and reflection. At the planning stage, the researcher prepares all planning preparations well from before. In the implementation stage of the second cycle, two meetings were held on Monday and Tuesday on January 15-16, 2024, then at the observation stage. Based on the observation of teacher activity in the second cycle, it can be seen that the teacher's ability to manage learning has increased from the first cycle, from the 27 aspects of teacher activity observed by observers obtained different values. The average percentage obtained overall in cycle II was 92.59% in the Very Good category.

Then the results of the observation of student activities in the second cycle showed the results of observation of student activities observed by observers consisting of 27 aspects obtaining

different scores. The average percentage obtained overall in cycle II was 89.81% in the Very Good category.

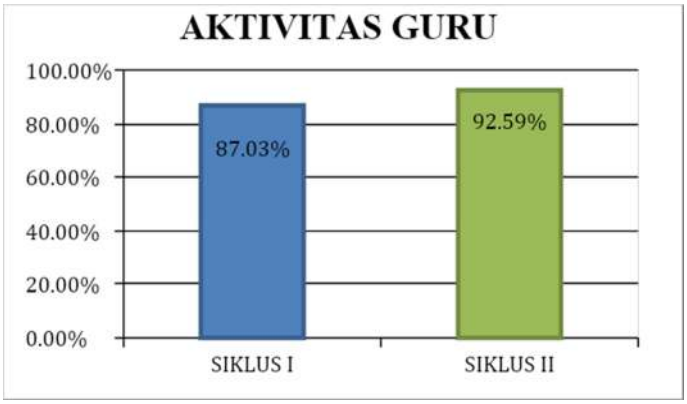
Based on the results of the concept comprehension test in cycle II, the number of students who understood the concept well amounted to 13 people, while 1 student did not understand the concept well. So it can be concluded that in the first cycle, the percentage of students' understanding of concepts by applying the Problem Based Learning model assisted by Media Realia was 86.97%, included in the Very Good category. Based on the data above, the application of the Problem Based Learning model assisted by Media Realia is able to increase students' understanding of concepts.

In the second cycle of the results of the student learning test of cycle II, it was known that there were 13 students who completed and 1 student who did not complete. The overall percentage obtained in cycle II was 92.85% in the very good category. Based on these values, it can be concluded that learning in cycle II has improved and is said to be complete, because it has achieved the set success indicators.

Based on the results of the research conducted on January 10-16, 2024 in class V.2 MIN 2 Nagan Raya by conducting classroom action research (PTK) has carried out two cycles of learning, so here is a researcher explaining the results obtained after the research.

1. Analysis of Teacher Activities

Based on the results that have been obtained from the results of research from cycle I and cycle II, that the teacher's ability to manage learning has increased, Adapuln pelrolelhan pelrselntasel can be seen in this belrikult picture:



Data source: MIN 2 Nagan Raya training results

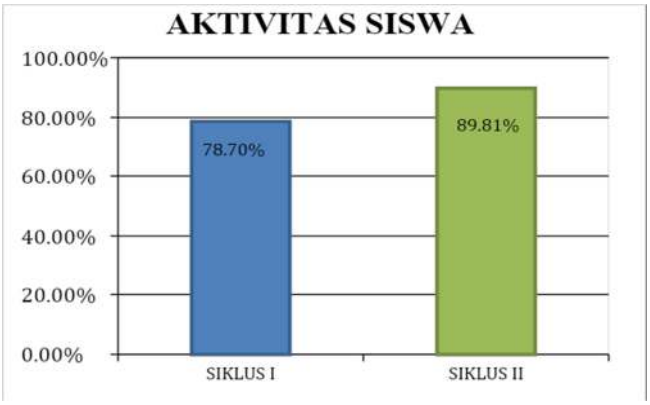
Figure 1. Percentage of Teacher Activity

Based on figure 1 above, it can be concluded that the application of the Problem Based Learning model with the help of Media Relalia is able to increase teacher activities, this improvement is obtained because there are several improvements that have been made at the reflection stage when the learning process has been completed.

The increase that occurs in each cycle is inseparable from the role of teachers in implementing the Problem Based Learning learning model, this is in line with the opinion (Tarhan and Selseln in the journal Afifah: 2021) states that the Problem Based Learning model is a problem-based learning model that requires students to be active in the learning process, where the teacher only acts as a facilitator in guiding students during the learning process. The role of the teacher as a facilitator and the use of real media in the learning process also greatly helps students in understanding the subject matter being taught, by using real meldia students will be easier to understand, and understand the material being studied so that it will be eternal and not easily forgotten because it has been embedded with a strong concept in students. The success of students in improving their understanding of concepts and learning outcomes is also inseparable from the role of teachers in mastering the classroom well, applying a variety of media-assisted learning models will also help students in the learning process.

2. Student Activity Analysis

The increase in student activity during the learning process in cycles I and II also increased Adapuln percentage acquisition can be seen in the following figure:



Data source: research results of MIN 2 Nagan Raya

Figure 2. Percentage of Student Activity

Based on the figure above, it is concluded that student activity in cycle II has increased compared to cycle I, the increase was obtained because there are several well-managed

shortcomings such as teachers' firmness in managing learning. Every student activity in participating in learning in the initial, core and closing activities has been carried out well.

The increase in student activity in each cycle has increased, this happens because in learning using the Problem Based Learning model, students not only listen to explanations from the teacher, but also are active in solving problems, working together in groups and expressing their own opinions from the given problem, thus students are trained to think critically and actively in the learning process, Therefore, students will easily understand the material studied. The activeness of students in carrying out the learning process in the classroom also greatly affects the understanding of concepts and learning outcomes. So it can be concluded that by applying the Problem Based Learning model assisted by realia media, it is able to increase student activities from cycle I to cycle II

3. Analysis of the Results of Students' Concept Understanding

The results of students' understanding of concepts can be seen from the answer scores of questions that have been given to students after learning is complete. Data was obtained from the test results given to students in each cycle, then the data was analyzed both individually and classically.

The percentage of concept understanding results can be seen in the following figure:

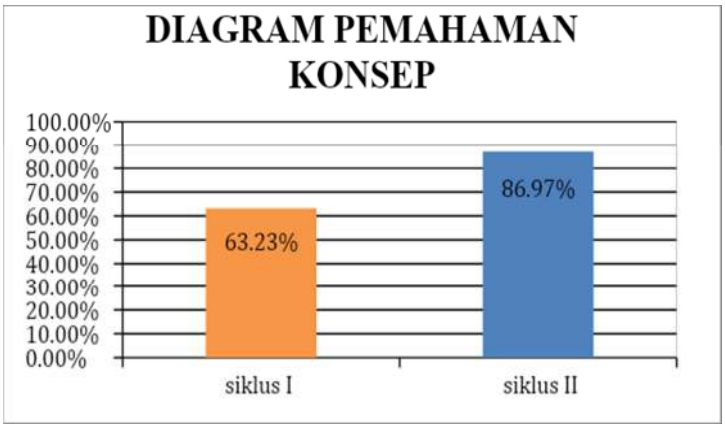


Figure 3. Percentage of Concept Understanding Results

Based on the results of the concept understanding test of students above has increased in each cycle, so it can be concluded that the application of the Problem Based Learning model assisted by realia media is able to increase students' understanding of concepts, this can be seen from the overall percentage obtained from the number of students who attended cycle II were able to understand concepts well compared to cycle I.

In line with the opinion (Barbara in Aulia Pratiwi's journal: 2020) the Problem Based Learning model is able to improve students' critical thinking skills and understanding of concepts in solving problems given by teachers, by applying this model it is easier for students to understand the concept of science learning because students are directly involved in learning activities to solve problems. Based on the above opinion and the data that has been analyzed, it proves that the application of the Problem Based Learning model assisted by realia media is able to increase students' understanding of concepts.

4. Analysis of Student Learning Outcomes

Student learning completeness is achieved if it meets the Minimum Completeness Criteria (KKM), which is 60 for each individual set at school. The results of the research were obtained from the answer scores given to students after the learning process was completed in the form of essay questions and multiple-choice questions as many as 15 questions, the data was obtained from the test results given to students in each cycle. The percentage of learning outcomes can be seen in the following figure:

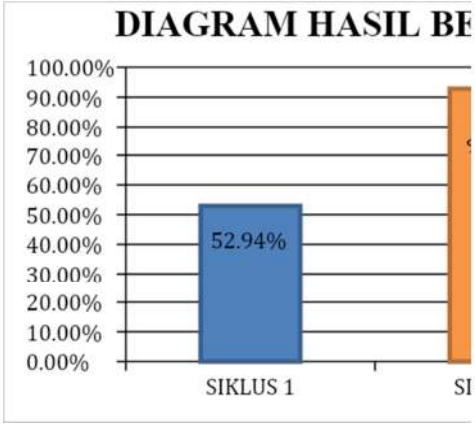


Figure 4. Percentage of Student Learning Outcomes

Based on the figure above, it is concluded that the application of the Problem Based Learning model assisted by Realia media is able to improve learning outcomes, this can be seen from the percentage obtained in each cycle has increased. Overall, the number of students has been able to solve problems and has completed this in line with the opinion (Effendi in the Safitri Journal: 2018) that the problem-based learning model is able to improve student learning outcomes, to obtain good learning results, students are required to be active in solving problems to acquire knowledge.

The increase in student learning outcomes occurs because students are able to understand the material well by applying the Problem Based Learning model assisted by realia media in the learning process, students who already understand the concepts well will have an impact on learning outcomes will also improve.This is in line with what was stated by (Handayani dan Subakhti, 2021), that the use of realia media in learning provides a tangible experience and brings the material closer to students' everyday lives. Moreover, realia media is also easier to obtain.

CONCLUSION

Based on the results of the research that the researcher has conducted on the application of the Problem Based Learning model assisted by Realia media to improve the understanding of the concept of grade V students in MIN 2 Nagan Raya, it can be concluded that the teacher's activity during the learning process in the first cycle obtained a percentage of 87.03% of the very good category and in the second cycle there was an increase of 92.59% of the very good category. Then student activity in cycle I obtained a percentage of 78.70% in the good category and in the second cycle there was an increase of 89.81% in the very good category, this increase was also obtained due to the improvement of shortcomings in the learning process and students' understanding of concepts during the learning process in cycle I obtained a percentage of 63.23% in the good category then in cycle II there was an increase of 86.97% in the very good category. Student Learning Outcomes during the learning process with the application of the Problem Based Learning model assisted by Realia media in Science Learning Theme 7 Subtheme 1 in the first cycle obtained a percentage of 52.94% in the Less category and in the second cycle there was an increase of 92.85% in the very good category. This increase occurred because so far students have never used realia media as a tool in the learning process, with the help of realia media and the Problem Based Learning model can make students tend to be more active and easy in providing understanding of subject matter to students with the help of real media.

Based on the research conducted by the researcher, there is a positive impact in the form of improvement in students' learning outcomes and conceptual understanding through the use of the Problem-Based Learning model assisted by realia media in class 4 students of Nagan Raya. Therefore, the researcher suggests that future research use this study as a basis for development by applying the Problem-Based Learning model assisted by realia media to similar subjects and materials. The selection of the right model and media greatly helps students in gaining a better understanding, which will ultimately have a positive impact on learning outcomes.

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