Indonesian Journal of Education and Social Humanities

Indonesian Journal of Education and Social Humanities
Volume 1 (1) 19 – 27 March 2024
ISSN: 0000-0000
The article is published with Open Access at: https://journal.mgedukasia.or.id/index.php/ijesh

Problem based Learning: A Learning Model to Improve Student Learning Outcomes

Lisa Yana ✉, Universitas Islam Negeri Ar-Raniry Banda Aceh, Indonesia
Wati Oviana, Universitas Islam Negeri Ar-Raniry Banda Aceh, Indonesia

✉ *190202067@student.ar-raniry.ac.id*

Abstract: Learning is an individual's effort to change his knowledge, attitudes and skills. Each learning process targets the results that must be achieved. This research aims to improve student learning outcomes. The type of research used is classroom action research with four steps, namely planning, action, observing and reflection. The subjects of this research were elementary school students. Data was obtained using observation and test techniques. The data obtained was then analyzed using descriptive statistical techniques. The research results show that the problem based learning model can help improve student learning outcomes. This can be seen from the percentage of completeness of student learning outcomes in the first cycle, which was 53.33% and increased in the second cycle to 86.66%. Based on this data, using the Problem Based Learning model can be used as a suitable reference for improving student learning outcomes.

Keywords: student learning outcomes; problem based learning model; learning.

Received March 7, 2024; **Accepted** March 19, 2024; **Published** March 31, 2024

Citation: Yana, L., & Oviana, W. (2024). Problem based Learning: A Learning Model to Improve Student Learning Outcomes. *Indonesian Journal of Education and Social Humanities*, *1*(1), 19 – 27.

INTRODUCTION

Teachers are an important element in the teaching and learning process who must be competent in all aspects of delivering learning in the classroom. Teachers play an important role as mentors, guiding students to discover the various potentials they have as provisions for their lives, directing students to carry out developmental tasks so that they become ideal human beings who are the hopes of every parent and community (Darmadi, 2016; Silvia et al., 2023). Furthermore, teachers also have a role to motivate (Cahyati & Rhosalia, 2020). This means that teachers must be creative in order to motivate students to learn, namely (1) arousing student interest; (2) creating a pleasant learning environment; (3) Give appropriate praise for each student's success; and (4) Give comments on the results of student work. Teachers also act as evaluators (Lubis, 2019). This means collecting data or information about the success of learning that has taken place.

An ideal teacher will be able to act and think critically in carrying out their duties professionally and can determine alternatives that must be taken in the teaching and learning process in order to achieve the learning objectives themselves (Dasopang et al., 2023; Santrock, 2011). Ideal learning is learning that is able to encourage children's

creativity as a whole, makes students active, achieves learning goals effectively and takes place in pleasant conditions (Husein et al., 2017; Lubis, 2023; Ningsih et al., 2023). However, efforts to improve the quality of education do not all depend on teacher factors alone, even though in essence teachers are one of the main elements in the education system which greatly influences education. Education is also a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential (Lubis et al., 2021; Mulyono & Hidayati, 2020; H. V. Sari & Suswanto, 2017). The success of an education is closely related to student learning outcomes.

Based on observations at state elementary school 7 Trienggadeng, specifically in fifth grade, researchers found several problems, there were still many students who had not mastered the learning material, and also the scores obtained by students were still below standard, the Minimum Completeness Criteria used reached a score of 75. However, there were still 70% of the total of all students who scored below standard. Low student scores are not only due to the teacher's teaching methods, there are also many factors that influence it, such as the availability of learning facilities, the learning objectives to be achieved, learning materials, learning allocation and the teacher's abilities.

The researcher also conducted an interview with the fifth grade teacher at State Elementary School 7 Trienggadeng, the teacher said that in the learning process, some students were busy themselves and others disturbed the calm learning atmosphere in the classroom, and students often seemed less active in learning. Teachers have tried to do their best in the learning process, but the learning outcomes of some students are still relatively low. In learning, the teacher has used learning methods that he thinks can attract students' attention, but apparently this has not fully caused students to be active in participating in learning.

Based on the results of the researcher's observations, it is known that many students have not yet reached the Maximum Completeness Criteria. To solve the problem above, the researcher tried to use the Problem Based Learning learning model, through this model the researcher invited students to solve problems, find new ideas and create an active and fun learning atmosphere that also improved student learning outcomes. According to Schunk (2012), learning outcomes are to see the extent to which students can master learning after following the teaching and learning process, or success which is marked by certain numbers, letters or symbols agreed upon by the education provider.

Furthermore, Wolfolk (2016) states that learning outcomes are achievements achieved academically through exams and assignments, active asking and answering questions that support the achievement of these learning outcomes. According to Dasopang et al. (2023), to find out the indicators of learning success can be seen from students' absorption capacity and the behavior seen in students. The intended learning outcomes are the learning achievements achieved by students with predetermined criteria or grades.

The Problem Based Learning learning model is a learning model that presents contextual problems so that it stimulates students to learn (Duda et al., 2019). Problem Based Learning requires students to work in groups to solve real world problems. Learning using the Problem Based Learning model will produce meaningful learning for students (Sari et al., 2021). Problem Based Learning makes students learn to solve a problem so that students apply the knowledge they have or try to find out new knowledge needed to solve the problem. Learning can become more meaningful and can be expanded when students are faced with situations where concepts are applied (Darwati & Purana, 2021).

The use of the Problem Based Learning learning model can refer to teaching methods. In the Problem Based Learning learning model, students study with groups consisting of 5-6 students, namely to orientate problems. After the teacher presents the subject, the teacher helps students define and organize learning tasks related to the problems being studied. And in the end, by using Problem Based Learning in learning,

students' concentration is more focused on the learning process so that it can improve student learning outcomes (Pramana et al., 2020).

Learning using the Problem Based Learning model is said to be successful if students produce positive behavior in accordance with the planned learning objectives. The success of the teaching and learning process in Theme 5 Subtheme 1 using the Problem Based Learning model can be measured from the success of students in participating in learning activities. So the higher the level of student learning understanding, the higher the level of learning success (Junaid et al., 2021).

Before carrying out this research, the researcher has explored several previous research results that are relevant to the research that the researcher will carry out, including research conducted by Siti Rizkia Nanda with the title "Application of the Problem Based Learning Model to Improve Student Learning Outcomes in Fifth Grade Mathematics Learning in state Islamic primary school 21 Aceh Besar". The title of the research is relevant to the title of what the researcher conducted, in this research the focus is to determine the influence of the Problem Based Learning learning model in improving student learning outcomes at State Islamic Primary School 21 Aceh Besar, while this research focuses on improving fifth grade learning outcomes in state elementary schools. 7 Trienggadeng in Theme 5 Subtheme 1 using the Problem Based Learning learning model. Research conducted by Siti Rizkia Nanda shows that there is an increase in student learning outcomes by implementing the Problem Bsed Learning model.

Then research was conducted by Triyadi with the research title "Application of the Problem Based Learning Model to Increase Student Activity and Learning Outcomes in Class XI TKR Fuel System Competency at SMK Muhammadiyah Prambanan". The title of the research is relevant to the title of what the researcher is conducting, in this research the focus is on solving the problem of low student activity during the learning process and learning outcomes are not yet optimal in Class XI TKR SMK Muhammadiyah Prambanan. Meanwhile, the focus of this research is to improve fifth grade learning outcomes at state elementary school 7 Trienggadeng on Theme 5 Subtheme 1 using the Problem Based Learning learning model. From research conducted by Triyadi, it shows that there is an increase in student activity and learning outcomes by implementing the Problem Bsed Learning model.

Then the research was carried out by Mardhiatun Maulia with the research title "application of the problem based learning model to environmental change material to improve the activities and learning outcomes of class X SMA Negeri 7 Takengon". This research focuses on overcoming the learning process which is not only centered on the teacher which results in students at SMAN 7 Takengon becoming passive in learning activities and influencing relatively low student learning outcomes. Meanwhile, the focus of this research is to improve fifth grade learning outcomes at state elementary school 7 Trienggadeng on Theme 5 Subtheme 1 using the Problem Based Learning learning model. From research conducted by Mardhitun Maulia, it shows that there is an increase in student activity and learning outcomes by implementing the Problem Bsed Learning model.

Based on previous research that the researchers have described above, it shows that the use of the Problem Based Learning model has been proven to be able to improve student learning outcomes. The study above shows that the research to be carried out is different, both in terms of the objectives to be achieved and the research location.

METHODS

Research Design is a description of the activities that will be carried out in a research effort. The type of research carried out in this research is Classroom Action Research. Classroom Action Research is research carried out in the classroom with the aim of improving and improving the quality of learning. This classroom action research was carried out in several cycles. Each cycle consists of four stages, namely planning,

implementation, observation and reflection. Classroom action research is a controlled, understandable and self-reflective investigative process that aims to improve systems, work methods, processes, competency contents and conditions. The entire process is reviewed, diagnosed, planned, implemented, monitored and influenced to provide the necessary link between self-assessment and professional development.

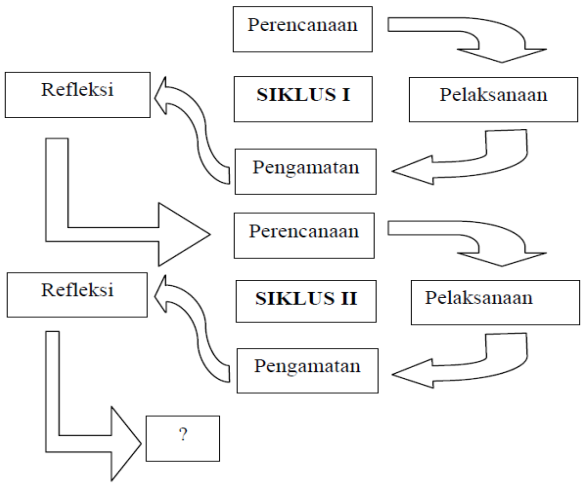

FIGURE 1. *Research Design*

Data collection techniques are an important step in research, because this technique aims to obtain or obtain the data desired by each researcher. Without using data collection techniques, researchers will not be able to find the results of the research conducted. The data collection techniques used in this research are observation and test techniques. Observation is used to see and observe directly the conditions in the field, thereby giving the teacher a more complete picture of what is being observed. Observation data is used to assess various teacher and student activities. Furthermore, to collect data about student learning outcomes, tests are needed. The test consists of a series of questions that the teacher asks students related to the material being taught. In this research, the test aims to measure student achievement towards student learning outcomes.

The data analysis technique used in this research is descriptive statistics. Descriptive statistics is a method of analyzing and displaying data to provide useful information. Descriptive statistics help describe research subjects or provide an overview using sample or population data. each research variable is analyzed using predetermined criteria. Furthermore, in classroom action research, of course we are familiar with the term indicators of research success. This indicator is a benchmark for the success of the research as well as a benchmark for whether further cycles are still needed or not. The indicator of the success of this research is if the percentage of completeness of student learning outcomes during the learning process using the problem based learning model has reached the classical value, namely ≥80%. Meanwhile, the collaborator team involved in this research was the class teacher and colleagues as observers.

RESULTS

FIRST CYCLE

The first cycle consists of four stages, namely the planning stage, implementation stage, observation stage, and reflection stage. At the planning stage there are several things that researchers need to prepare, namely choosing themes, sub-themes, learning, subjects, materials and preparing the first cycle Learning Implementation Plan, student worksheet, first cycle teacher activity observation sheet instrument, first cycle student activity observation sheet directly observed by observers during learning.

The action implementation phase in the first cycle will be carried out on October 10 2022 with a plan for implementing learning on Ecosystem Components material. Fifth grade students at state elementary school 7 Trienggadeng participated in the learning, with a total of 30 students consisting of 17 male students and 13 female students. In this first cycle of research, the researcher was assisted by the fifth grade homeroom teacher who helped to observe the teacher's activity assessment, and research assistants to observe the students' activities.

At the preparatory stage, the teacher begins the lesson with greetings, greetings to students and reading prayers. The teacher checks student attendance then the teacher explains the learning identity including themes, sub-themes, subjects and materials. Teachers provide apperception and motivation to students. Then the teacher explains the learning objectives and learning steps using the Problem Based Learning learning model.

Next is the core activity stage, in the core activities there are five stages, namely the stage of orienting students to the problem, the stage of organizing students to learn, the stage of guiding individual and group investigations, the stage of developing and presenting work results, and the stage of analyzing and evaluating the problem solving process. At the student orientation stage on this problem the teacher divides 6-7 students into 6 groups, and asks students to observe the pictures of the ecosystem contained in the student worksheets. Next, during the learning stage, organize students. The teacher asks students to read a text about ecosystems. During this stage of guiding individual and group investigations, the teacher guides discussions with students about the content of the ecosystem reading text. At the stage of developing and presenting the work, the teacher asks students to attach pictures of animals based on the type of food they eat. At the analysis and evaluation stage of the problem solving process, the teacher asks students to present the results of the group discussion. The teacher asks other groups to provide responses to the results of the discussion during the presentation. After that the teacher gave praise and appreciation to each group.

At the closing activity stage, the teacher asks students to conclude the learning and the teacher provides reinforcement. Teachers provide moral and motivational messages to students. The teacher will convey what will be learned at the next meeting. Then the teacher ends the lesson by saying Alhamdulillah and closes the lesson with greetings.

The first cycle observation stage is carried out when learning is taking place, namely there are observations of teacher activities and student activities. To observe teacher activities, the teacher's activity observation sheet instrument was used, observed by the fifth grade teacher, while to observe student activities, the Student Activity Observation Sheet instrument was used, which was observed by the research assistant. The results of observing teacher activities in this first cycle can be seen as a whole from teacher activities in preliminary activities, core activities and closing activities in learning using the Problem Based Learning model in Theme 5 subtheme 1, obtaining a percentage score of 69.44%, which is included in the good category. However, in each activity there are several shortcomings so improvements need to be made in the next cycle. Furthermore, the results of observations of student learning activities in this first cycle can be seen as a whole. The results of student activities in preliminary activities, core activities and closing activities in the learning process using the Problem Based Learning learning model in theme 5 subtheme 1 obtained a percentage score of 70.89%. which is included in the good category. However, in each activity there are still several shortcomings so improvements need to be made in the next cycle.

After the learning process in the first cycle took place, the teacher gave test questions to determine students' abilities after applying the Problem Based Learning learning model which was attended by 30 students, with a minimum completeness criterion of 75. Based on the analysis of student learning outcomes in the first cycle, it was found that students who were in the complete category there were 16 students (53.33%) and students in the incomplete category were 14 students (46.66%). From this it can be

concluded that learning in the first cycle has not reached the indicators of research success and must be continued to the next cycle with several recommendations for improvement.

The next activity carried out was a reflection activity. At this reflection stage, there are several things that need improvement in the learning process using the Problem Based Learning learning model, namely teacher activities and student activities. Some of the findings and recommendations for improvements that need to be made in the next cycle are 1) At the next meeting, it is hoped that the teacher will be able to convey the material as well as possible; 2) At the next meeting, it is hoped that the teacher will be able to convey the learning steps accurately and precisely; 3) Teachers are expected to pay more attention to student activities at the next meeting; 4) Students must be more active; 5) Learning must be student-centered; and 6) At the next meeting, the teacher will guide unfinished students by facilitating or specializing further teaching and explaining the material in more detail. The teacher will guide 14 students who need further instruction.

SECOND CYCLE

The second cycle was carried out to overcome several deficiencies identified in the first cycle. Similar to the first cycle, the second cycle has four stages in classroom action research, namely the planning stage, implementation stage, observation stage and reflection stage. At the planning stage there are several things that researchers need to prepare, namely choosing themes, sub-themes, learning, subjects, materials and preparing the first cycle Learning Implementation Plan, student worksheet, first cycle teacher activity observation sheet instrument, first cycle student activity observation sheet directly observed by observers during learning.

The action implementation phase in the second cycle was carried out on October 13 2022 using the second learning implementation plan with Animal Life Cycle material. Fifth grade students at state elementary school 7 Trienggadeng took part in the learning, with a total of 30 students consisting of 17 male students and 13 female students. In this second cycle of research, the researcher was assisted by the fifth grade homeroom teacher who helped to observe teacher activity assessments, and research assistants to observe student activities.

Learning activities in this research are divided into three stages, namely the introductory stage, the core activity stage and the closing activity stage. In the introductory stage, the teacher assesses learning with greetings and reading prayers. The teacher checks student attendance and explains the learning identity including themes, subject sub-themes and material. Teachers inspire and motivate students. The teacher then explains the learning objectives and learning steps using the Problem Based Learning learning model.

Next is the core activity stage, in the core activities there are five stages, namely the stage of orienting students to the problem, the stage of organizing students to learn, the stage of guiding individual and group investigations, the stage of developing and presenting work results, and the stage of analyzing and evaluating the problem solving process. At the student orientation stage on this problem the teacher divides 6-7 students into 6 groups and asks students to observe pictures of animal life cycles contained in the student worksheets. Then at the stage of organizing students to study, the teacher asks students to read a reading text about the life cycle of animals. The teacher leads discussions with students about student worksheet problems during the guiding stage of individual and group investigation. In the stage of developing and presenting the work, the teacher asks students to describe the life cycle of animals on the student worksheet table. In the analysis and evaluation stage of the problem solving process, the teacher asks students to present the results of the group discussion. The teacher asks other groups to present the results of the discussion. Then the teacher gives praise and appreciation to each group.

At the closing activity stage, the teacher asks students to conclude the lesson and the teacher provides reinforcement. Teachers provide moral and motivational messages to

students. The teacher will convey what will be learned at the next meeting. Then the teacher ends the lesson by saying Alhamdulillah and closes the lesson with greetings.

The second cycle observation stage is carried out when learning is taking place, namely there are observations of teacher activities and student activities. To observe teacher activities, the teacher's activity observation sheet instrument was used, observed by the fifth grade teacher, while to observe student activities, the Student Activity Observation Sheet instrument was used, which was observed by the research assistant. The results of observing teacher activities in this second cycle can be seen as a whole from teacher activities in preliminary activities, core activities and closing activities in learning using the Problem Based Learning model in Theme 5 subtheme 1 which obtained a percentage score of 86.67% and is included in the very good category. Furthermore, the results of observations of student learning activities in this second cycle can be seen as a whole. The results of student activities in preliminary activities, core activities and closing activities in the learning process using the Problem Based Learning learning model in theme 5 subtheme 1 obtained a percentage score of 87.47%. which is included in the very good category.

After the learning process in the second cycle took place, the teacher gave test questions to determine students' abilities after applying the Problem Based Learning learning model which was attended by 30 students, with a minimum completion criterion of 75. Based on the analysis of student learning outcomes in the second cycle, it was found that students who were in the complete category there were 16 students (86.66%) and students in the incomplete category were 14 students (13.34%). From this it can be concluded that learning in the second cycle has achieved research success indicators and does not need to be continued to the next cycle.

DISCUSSION

This research is a type of Classroom Action Research. Implemented in two cycles in fifth grade at state elementary school 7 Trienggadeng. The first cycle was carried out on Monday, 10 October 2022 and the second cycle was carried out on Wednesday, 13 October 2022. The aim of the research in Theme 5 Sub-theme 1 is to describe how teachers use the Problem Based Learning learning model to guide learning and how the Problem Based Learning learning model works. can be used to find out how students' activities are in the learning process. Specifically in improving student learning outcomes by using the Problem Based Learning learning model in Theme 5 Subtheme 1.

Learning completeness occurs if the score achieved meets the Minimum Completeness Criteria, namely 75 for each individual set by the school. By giving tests in each cycle, researchers can confirm and obtain student learning outcomes in each cycle. The learning results in the first cycle showed that 16 students completed (53.33%) while 14 students (46.66%) did not complete. This is because students do not understand the questions or problems given. Learning outcomes increased in the second cycle, it was found that there were 26 students who completed (86.66%) while there were 4 students who did not complete (13.34%).

Increased learning outcomes occur from the application of the problem based learning model used. In the learning process, students are accustomed to solving the problems they face using the steps that have been directed. This is in accordance with the findings of Mustofa & Hidayah (2020) which states that in the problem based learning model, students are accustomed to analyzing the problems they face first before exploring the literature and solving the problem, so that students will optimize their high-level thinking abilities and of course this will make things easier. problem solving. Furthermore, Mayasari et al. (2022) in their findings also explained that the use of the problem based learning model can increase student activity in learning so that it will make it easier to achieve learning goals.

CONCLUSION

Based on the research results that have been described, it can be concluded that the problem based learning model can improve student learning outcomes. This can be proven by an increase in learning outcomes during the learning process. The details of these achievements are that in the first cycle there were 16 students who completed (53.34%) while 14 students (46.66%) did not complete. In the second cycle there were 26 students who completed it (86.66%), while there were 4 students who did not complete it (13.34%). The results of cycle I and cycle II tests show that the Problem Based Learning learning model in theme 5 subtheme 1 can improve the learning outcomes of state elementary school students 7 Trienggadeng.

REFERENCES

Cahyati, S. Y., & Rhosalia, D. R. (2020). Upaya Meningkatkan Motivasi Belajar Siswa dengan Menggunakan Media Gambar pada Pembelajaran Matematika di Sekolah Dasar. *PENSA*, *2*(1), 9–16.

Darmadi, H. (2016). Tugas, Peran, Kompetensi, dan Tanggung Jawab Guru Profesional. *Edukasi: Jurnal Pendidikan*, *13*(2), 161–174. https://doi.org/10.31571/EDUKASI.V13I2.113

Darwati, I. M., & Purana, I. M. (2021). Problem Based Learning (PBL): Suatu Model Pembelajaran untuk Mengembangkan Cara Berpikir Kritis Peserta Didik. *Widya Accarya*, *12*(1), 61–69.

Dasopang, M. D., Lubis, A. H., Pane, A., Nijar, A., & Harahap, I. (2023). How do the Concept Design and Pancasila Study Integrate Islamic Vision and Nationality Towards Indonesian Moslem in Millennium Era. *2nd Paris Van Java International Seminar on Health, Economics, Social Science and Humanities (PVJ-ISHESSH 2021)*, 116–124. https://doi.org/https://doi.org/10.18502/kss.v8i4.12889

Duda, H. J., Susilo, H., & Newcombe, P. (2019). Enhancing Different Ethnicity Science Process Skills: Problem-based Learning through Practicum and Authentic Assessment. *International Journal of Instruction*, *12*(1), 1207–1222.

Husein, S., Herayanti, L., & Gunawan, G. (2017). Pengaruh Penggunaan Multimedia Interaktif terhadap Penguasaan Konsep dan Keterampilan Berpikir Kritis Siswa pada Materi Suhu dan Kalor. *Jurnal Pendidikan Fisika Dan Teknologi*, *1*(3), 221–225.

Junaid, M., Salahudin, S., & Anggraini, R. (2021). Pengaruh Model Pembelajaran Problem Based Learning terhadap Pemahaman Konsep IPA Siswa di SMP N 17 Tebo. *Physics and Science Education Journal (PSEJ)*, 16–21.

Lubis, A. H. (2019). Upaya Peningkatan Hasil Belajar Siswa Sekolah Dasar melalui Model Cooperative Learning Tipe Numered Heads Together. *FORUM PAEDAGOGIK*, *11*(2), 127–143.

Lubis, A. H. (2023). The Interactive Multimedia Based on Theo-Centric Approach as Learning Media during the Covid-19 Pandemic. *JPI (Jurnal Pendidikan Indonesia)*, *12*(2), 210–222.

Lubis, A. H., Yusup, F., Dasopang, M. D., & Januariyansah, S. (2021). Effectivity of Interactive Multimedia with Theocentric Approach to the Analytical Thinking Skills of Elementary School Students in Science Learning. *Premiere Educandum: Jurnal Pendidikan Dasar Dan Pembelajaran*, *11*(2), 215–226.

Mayasari, A., Arifudin, O., & Juliawati, E. (2022). Implementasi Model Problem Based Learning (PBL) dalam Meningkatkan Keaktifan Pembelajaran. *Jurnal Tahsinia*, *3*(2), 167–175.

Mulyono, D., & Hidayati, A. N. (2020). Peningkatan Hasil Belajar Mata Kuliah Media Pembelajaran Matematika Melalui Flipped Clasroom berbantuan Schoology. *JTP-Jurnal Teknologi Pendidikan*, *22*(2), 88–95.

Mustofa, R. F., & Hidayah, Y. R. (2020). The Effect of Problem-Based Learning on Lateral

Thinking Skills. *International Journal of Instruction*, *13*(1), 463–474.
Ningsih, Y. S., Mulia, M., & Lubis, A. H. (2023). Development of Picture Storybooks with TheoAnthropoEco Centric Approach for Elementary School Students. *AL-ISHLAH: Jurnal Pendidikan*, *15*(2), 1888–1903.
Pramana, M. W. A., Jampel, I. N., & Pudjawan, K. (2020). Meningkatkan Hasil Belajar Biologi melalui E-Modul berbasis Problem Based Learning. *Jurnal Edutech Undiksha*, *8*(2), 17–32.
Santrock, J. W. (2011). *Educational Psychology* (5th ed.). McGraw-hill Companies.
Sari, H. V., & Suswanto, H. (2017). Pengembangan Media Pembelajaran berbasis Web untuk Mengukur Hasil Belajar Siswa pada Mata Pelajaran Komputer Jaringan Dasar Program Keahlian Teknik Komputer dan Jaringan. *Jurnal Pendidikan: Teori, Penelitian, Dan Pengembangan*, *2*(7), 1008–1016.
Sari, Y. I., Utomo, D. H., & Astina, I. K. (2021). The Effect of Problem Based Learning on Problem Solving and Scientific Writing Skills. *International Journal of Instruction*, *14*(2), 11–26.
Schunk, D. H. (2012). *Learning Theories: An Educational Perspective*. Pearson Education Inc.
Silvia, I., Oviana, W., & Lubis, A. H. (2023). Improving Learning Outcomes of Elementary School Students by Using Mind Mapping Models with Audio Visual Media: A Classroom Action Research. *Jurnal Pendidikan Profesi Guru*, *1*(2), 41–53.
Wolfolk, A. (2016). *Educational Psychology* (13th ed.). Pearson Education Inc.