Implementation of Discovery Learning Model to Increase Student Interest and Learning Outcomes

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Abstract: This research aims to increase student interest and improve learning outcomes using the discovery learning model. This research uses the Action Research method. This research method starts with the planning, action implementation, observation, and reflection stages. Data Collection Techniques and Tools This research uses tests and observations. This class action was carried out at SMAN 1 Sungai Menang to determine students' interests and learning outcomes regarding applying the discovery learning model. This research shows an increase in interest, namely from 70.36% to 84% and student learning outcomes from the first and second cycles, namely from 25.92% to 85.17%. This increase is visible after implementing the discovery learning model, which can improve students' interests and learning outcomes. This research is implemented in two cycles; in the first cycle stage, the teacher provides a stimulus for students to identify and respond to problems and encourages students' critical thinking. In the second cycle, the teacher raises enthusiasm for learning by increasing students' interest in searching for related information and changing learning methods to make them more fun and interactive, such as through discussion activities that increase students' self-confidence and knowledge.

Abstrak: Penelitian ini bertujuan untuk meningkatkan minat siswa dan meningkatkan hasil belajar siswa dengan penggunaan model discovery learning. Penelitian ini menggunakan metode Penelitian Tindakan (*action research*), metode penelitian ini dimulai dari tahap perencanaan, pelaksanaan tindakan, observasi dan refleksi. Teknik dan Alat Pengumpulan Data Penelitian ini melalui tes dan observasi, tindakan kelas ini dilakukan di SMAN 1 Sungai Menang guna mengetahui minat dan hasil belajar siswa terhadap penerapan model discovery learning. Hasil penelitian ini menunjukkan bahwa ada peningkatan minat yaitu dari 70,36% menjadi 84% dan hasil belajar siswa dari siklus pertema dan kedua yaitu dari 25,92% menjadi 85,17%, peningkatan ini terlihat jelas setelah menerapkan model pembelajaran discovery learning dapat meningkatkan minat dan hasil belajar peserta didiK. Penelitian ini di implikasikan dalam dua siklus, pada tahap siklus pertama Guru memberikan stimulus kepada peserta didik untuk mengidentifikasi dan merespon masalah serta mendorong pemikiran kritis peserta didik. Pada Siklus ke kedua Guru membangkitkan semangat belajar dengan meningkatkan ketertarikan peserta didik dalam mencari informasi terkait, mengubah metode pembelajaran agar lebih menyenangkan dan interaktif, seperti melalui kegiatan diskusi yang meningkatkan rasa percaya diri dan pengetahuan peserta didik.

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A. Introduction

Since the emergence of a global movement that enlivens the application of learning models for the 21st century, this change is important to face and even develop to face the challenges of the 21st century, especially for teachers and students. The 21st century is the century of knowledge, the century of economics, the century of information technology and the century of the Industrial Revolution 4.0. This is reinforced by the opinion (Arifin & Setiawan, 2020), which states that the paradigm shift in education is inseparable from the role of the teacher because every information that flows to students is through the teacher's intermediary, regardless of the teacher is not the only source of information.

The role of teachers in the 21st-century learning process is very important because teachers are required to be more active, creative in planning and able to apply learning models. The learning model is one-way teachers carry out the learning process. According to (Nurdiyansyah & Fahyuni, 2016), the learning model includes activities carried out by teachers, starting from planning and implementing activities to the evaluation stage. On the other hand (Pane & Dasopang, 2017), the learning model is a way to achieve strategies because teachers can use learning to create a learning environment and specialize teacher and student activities in the learning process (Asholahudin et al., 2021).

Experts have conducted previous research. Susilawati et al (2020), "Analysis of Barriers to Learning Plant Tissue Material Biology in Implementing the 2013 Curriculum in Senior High School". *Edunesia: Scientific Journal of Education*, This study discusses obstacles in learning plant tissue material in the 2013 grade XI SMA Negeri 1 Meureubo curriculum. Furthermore, identify what factors cause these obstacles. The research method used is qualitative. As a result of this research, there are grade XI teachers of SMA Negeri 1 Meureubo facing various obstacles in learning plant tissue material biology according to the 2013 Curriculum, including the availability of books and inadequate infrastructure, short training, limited media, and complicated and time-consuming assessments (Susilawati et al., 2020).

Then Astari (2017), "Development of Science Process Skills through Discovery Methods". *Journal of Biology Education*, This study discusses the differences in the basic science process skills of students taught with guided discovery and free discovery learning with students taught with conventional learning. This research method is quasi-experimental with data analysis techniques using the anakova test, The results of this study obtained that there are differences in the level of basic science process skills of students taught with guided discovery learning with students taught with conventional learning (Fcalculate = 34,488; P. = 0.000) (Astari, 2017).

Then Oktavia (2020), "The Influence of Interactive Multimedia on Learning Plant Tissue Biology on the Activeness and Knowledge of Students of SMAN 6 Darul Makmur". *Edunesia: Scientific Journal of Education,* This study discusses the impact of interactive multimedia on the understanding of grade XI students of SMA Negeri 6 Darul Makmur related to plant tissue and how it affects their activity level. This research method uses a quantitative approach, with a type of quasi-experimental research with a Nonequivalent

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Control Group Design design; the results of this study were obtained. The application of interactive multimedia on plant tissue material significantly increases the activeness and knowledge of SMA Negeri 6 Darul Makmur grade XI students.

Susilawati et al (2020) research discusses obstacles in learning plant tissue material in high school, including the availability of books and inadequate infrastructure. Astari (2017) highlights the different levels of students' science process skills taught with guided and conventional discovery learning. Lestari (2021) shows that using interactive multimedia to plant tissue material can increase student activeness and knowledge. It is hoped that this research can implement the discovery learning model with the support of multimedia technology, can be an effective strategy in increasing student interest and learning outcomes in plant tissue material, and is expected to create a stimulating learning environment and motivate students to be more active and actively participate in the learning process. The difference between this research and some previous research lies in the focus of research, the learning methods tested, and the type of analysis carried out in these studies. The implementation of discovery learning models, especially in plant tissue materials, still needs to be comprehensively explored in the context of increasing student interest and learning outcomes.

Many learning models, including the discovery learning *learning model, can be applied in the 21st-century learning* process. This model is more focused on students so that it can help learning activities. This aligns with the opinion (Luthfi et al., 2021) that *discovery learning* is an appropriate learning model because it can support learning process activities, such as teachers who are directly involved even in limited learning conditions due to the COVID-19 pandemic. In this condition, teachers must prepare teaching materials to help students learn. (Satriani et al., 2021), Utilizing a *discovery learning* model based on environmental utilization as a learning resource provides opportunities to develop student potential and more meaningful learning experiences (Hasanah et al., 2016).

The *discovery learning* model is expected to increase student interest in learning Plantae material. This aligns with the opinion (Leila et al., 2021) that interest is a sense of liking something or learning activities without anyone telling them to. Interest also directs individuals towards objects between happy and unhappy feelings and is important in the learning process.

Experts have conducted previous research. Susilawati et al (2020), "Analysis of Barriers to Learning Plant Tissue Material Biology in Implementing the 2013 Curriculum in Senior High School". *Edunesia: Scientific Journal of Education*, This study discusses obstacles in learning plant tissue material in the 2013 grade XI SMA Negeri 1 Meureubo curriculum. Furthermore, identify what factors cause these obstacles. The research method used is qualitative. As a result of this research, there are grade XI teachers of SMA Negeri 1 Meureubo facing various obstacles in learning plant tissue material biology according to the 2013 Curriculum, including the availability of books and inadequate infrastructure, short training, limited media, and complicated and time-consuming assessments (Susilawati et al., 2020).

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This is related to student interest during the learning process at SMAN 1 Sungai Kemenangan for the 2021/2022 school year because due to the COVID-19 pandemic, out of 27 students, there were only 5 students who actively asked the teacher while others were busy alone and did not listen to the teacher's explanation. Student learning outcomes with varying scores were obtained based on data obtained from class X of SMAN 1 Sungai Kemenangan in the 2021/2022 school year. Students who got a score of 80 were 7 people, those who got a score of 60-75 were 5 people, and those who got a score below 60 were 15. From the explanation above, the most dominant learning outcomes are grades with completeness below 70 (Ibrahim., 2012).

This causes students' interest and learning outcomes to decrease due to using the wrong learning model, which will cause boredom, boredom, and even difficulty in receiving material. Therefore, the *discovery learning model* will increase student interest and learning outcomes. This is in line with the opinion (Sutrisno et al., 2020), which states that *the discovery learning* model is more student-centered and specifically designed to help students develop the ability to think and solve problems in everyday life. So that students can be actively involved in learning activities.

For research purposes, it is necessary to compile a research formula. This study aims to discuss how using the *Discovery Learning* model can increase student interest and learning outcomes in Plantae material. The main problem of this research is applying the *Discovery learning model* to increase interest and learning outcomes in plantae material**.** The results of this research are expected to provide both theoretical and practical beneficial implications. Theoretically, this research is expected to develop educational science, especially about models and learning. Practically, this research is expected to determine student interests and learning outcomes and can be a school guide in improving learning that occurs in the classroom.

B. Method

The method used in this study is the action *research* method, which involves a research subject of 27 students. The research location is at SMAN 1 Sungai TWin, in the 2021-2022 school year. Several techniques are used in obtaining data, namely interviews, documentaries, questionnaires, and observations of teacher performance and student activities, to determine perceptions while giving tests to obtain student understanding results. Test and observation data will be analyzed to evaluate the success of implementing the discovery learning model in improving student interest and learning outcomes. This can be seen in Table 1.

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Table 1. Data Collection Techniques

Problem Statement	Data Collection Techniques
How can the *discovery learning model* increase the interest of grade X students of SMAN 1 Sungai Kemenangan in plantae material?	Observation
How can the *discovery learning model* improve the learning outcomes of SMAN 1 Sungai Kemenangan grade X students on Plantae material?	Test

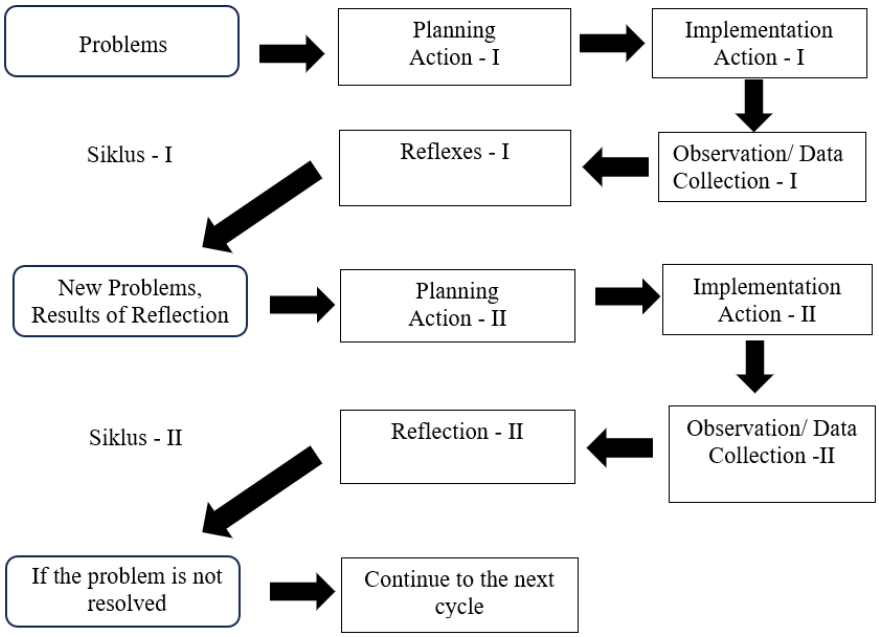

Figure 1. Action Research Cycle

C. Result and Discussion

Result

This study aims to overcome problems in the classroom teaching process in class X IPA SMAN 1 Sungai Menang, especially related to monotonous teaching methods and lack of interaction between teachers and students. Based on observations made in April 2022 during limited face-to-face learning, it was found that biology teachers at the school still use lecture and question-and-answer methods dominantly. This causes students to become bored and less enthusiastic, and they need more responses when invited to participate in learning.

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Table 2 shows the results of observer observations of teacher activities carried out in cycles I and II.

Table 2. Results of Observation of Cycle I and Cycle II Teacher Activities

No	Teacher Activities	Cycle 1 (%)	Cycle 2 (%)	Information
1	Introduction			
	1. Open learning	86	95	Increased
	2. Exploring knowledge	80	85	Increased
	3. The motivation of student interest	70	85	Increased
	4. Learning objectives	65	95	Increased
2	Core Activities			
	1. Explain sub-concepts	75	95	Increased
	2. Learning media	80	95	Increased
	3. Guide discussions	80	95	Increased
3	Cover			
	1. Conclusion	75	85	Increased
	2. Time management	65	85	Increased
	3. Close a lesson	75	90	Increased
	Average	68,27	82,27	Increased

This model encourages active learner participation, fosters curiosity, and enhances teacher-learner interaction. By employing self-exploration and discovery methods, the aim is for students to gain a deeper understanding of the material and achieve optimal learning results. Implementing the discovery learning model is anticipated to create a more engaging and interactive learning setting, leading to heightened student motivation and engagement in the learning process. Consequently, there is an expected significant rise in interest and learning outcomes among Grade X IPA students at SMAN 1 Sungai Menang.

The observations also revealed that only 45% of students attained a full score meeting the minimum passing grade (KKM) of 70 in the first cycle test. In contrast, in the second cycle, the percentage of students scoring full marks increased to 85.17% against the same KKM standard. This highlights the pressing need for a change in the teaching methods to enhance student interest and learning outcomes. To address these issues, implementing the discovery learning model is deemed necessary. The study was conducted in two cycles, yielding the following results:

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Cycle 1

Figure 2. Two observers assist in the implementation of the learning process in class

Figure 3. Teacher introductory activities condition students to be ready to learn

Figure 4. The Master's core activity is asking questions and displaying pictures of plant species

Figure 5. The Master's core activities provide direction to students to identify problems

Figure 6. The Master's core activities divide students into groups

Figure 7. The teacher's core activity divides the group, directing students to discuss solving questions in LKS

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Figure 8. The Master's core activities allow students to present the results of the discussion

Figure 9. The teacher's core activity invites students to give feedback on the results of the discussion

Figure 10. The teacher's core activity is guiding students to conclude the results of the discussion

Figure 11. Concluding activity The teacher asks and concludes the learning material and guides the students to close the lesson

Figure 12. Provision of cycle 1 test questions for the second meeting

Figure 13. Observance of teacher and student activity

Table 3. List of Cycle I Test Scores

No	Student Name	M/F	Value	Category
			Cycle 1	
1	Adi Saputra	M	70	Height
2	Aditiya	M	60	Medium
3	Andra	M	30	Low
4	Anggara Dewa	M	40	Low
5	arya putra Prathama	M	30	Low
6	Bara Hafth Pardaus	M	40	Low

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No	Student Name	M/F	Value	Category
			Cycle 1	
7	Daniel Alpansyah	M	70	Height
8	Dewa Anggara	M	70	Height
9	Didin	M	70	Height
10	Diki Nur Saputra	M	30	Low
11	Elan Yusuf	M	40	Low
12	Engga Saputra	M	40	Low
13	Febian Agustian	M	40	Low
14	Galang	M	70	Height
15	Galang Huta Galung	M	70	Height
16	Junis Hariyani	M	40	Low
17	Jeki Saputra	M	50	Low
18	Amelda	F	70	Height
19	Bunga	F	40	Low
20	Cahaya Nariyah	F	60	Medium
21	Dehca	F	40	Low
22	Desi Tri Novita Sari	F	40	Low
23	Devi Agustin	F	40	Low
24	Dini Desri Amelia	F	60	Medium
25	Pirji Amika	F	40	Low
26	Kesya Andini	F	20	Low
27	Lemi	F	40	Low
	Sum		1.310	
	Average		48.51	

Cycle 2

Figure 14. Two observers assist in the implementation of the learning process in class

Figure 15. Teacher introductory activities condition students to be ready to learn

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Figure 16. The Master's core activity is asking questions and showing videos of plant species

Figure 17. The Master's core activities provide direction to students to identify problems

Figure 18. The Master's core activities divide students into groups

Figure 19. The teacher's core activity divides the group, directing students to discuss solving questions in LKS

Figure 20. The Master's core activities allow students to present the results of the discussion

Figure 21. The teacher's core activity invites students to give a ladder, and the results of the discussion

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Figure 22. The teacher's core activity is guiding students to conclude the results of the discussion

Figure 23. Concluding activity The teacher asks and concludes the learning material and guides the students to close the lesson

Figure 24. Provision of cycle 2 test questions for the second meeting

Figure 25. Observance of teacher and student activity

Table 4. Cycle 2 Test Score List

No	Student Name	M/F	Value	Category
			Cycle 2	
1	Adi Saputra	M	80	Height
2	Aditiya	M	80	Height
3	Andra	M	80	Height
4	Anggara Dewa	M	50	Low
5	Arya Putra Pratama	M	60	Medium
6	Dafa Hafih Pirdaus	M	80	Height
7	Daniel Alpansyah	M	80	Height
8	Dewa Anggara	M	80	Height
9	Didin	M	80	Height
10	Diki Nur Saputra	M	70	Height
11	Elan Yusuf	M	70	Height
12	Engga Saputra	M	80	Height
13	Febian Agustian	M	80	Height
14	Galang	M	80	Height
15	Galang Huta Galung	M	80	Height
16	Junis Hariyani	M	60	Medium
17	Jeki Saputra	M	50	Low
18	Amelda	F	80	Height
19	Bunga	F	80	Height

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No	Student Name	M/F	Value	Category
			Cycle 2	
20	Cahaya Nariyah	F	80	Height
21	Dehca	F	80	Height
22	Desi Tri Novita Sari	F	80	Height
23	Devi Agustin	F	80	Height
24	Dini Desri Amelia	F	80	Height
25	Pirji Amika	F	80	Height
26	Kesya Andini	F	80	Height
27	Lemi	F	80	Height
Sum			2.039	
Average			75.51	

Based on the results that have been obtained through observation and provision of tests regarding student interests and learning outcomes on Plantae material, the following data can be obtained:

Table 5. Comparison Results of Cycle I and Cycle II Test Values

No	Value	Cycle 1	Cycle 2
1	20-29	1 Student	0 Students
2	30-39	3 Students	0 Students
3	40-49	12 Students	0 Students
4	50-59	1 Student	2 Students
5	60-69	3 Students	2 Students
6	70-79	7 Students	2 Students
7	80-89	0 Students	21 Students

The table above shows an increase in learning outcomes in the cognitive aspects of students, as shown in cycle II. The highest frequency of values in cycle I was obtained by participants in the range of 40-49, namely 12 people and the few in the range of 20-29 and 50-59, as many as 1 person. In cycle II, the highest scores were found in the range of 80-89, with 21 people, and the lowest were 50-69, with a total of 2 people.

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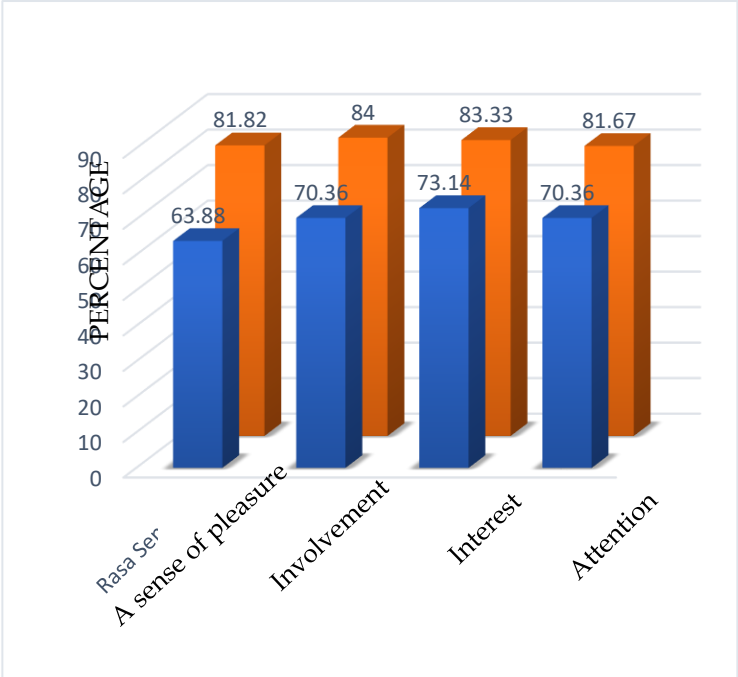

Figure 26. Percentage of Learning Interests of Students in Cycle I and Cycle II

The data above shows that students' interest in learning increased during cycle II. The pleasure from 63.88% increased to 81.82% in the very good category. Student involvement increased from 70.36% to 84% in the second cycle, student interest indicators increased from 73.14% to 83.33%, and attention increased from 70.36% to 81.67% in the very good category.

Discussion

Based on the problems found at the precycle stage, first, teachers still use boring learning models such as lecture and question-and-answer methods, so learning activities like this do not allow the learning process to run as it should. Seeing conditions like this, teachers take action that can make students find and identify a problem by applying *the discovery learning* model to learning. In stage cycle I, the teacher provides stimuli or stimuli so that learners can identify and respond to problems that have been given. In the second cycle, teachers raise more enthusiasm for learning by increasing their resilience in finding information related to problems during the learning process(Anisa & Sholeha, 2021).

The second problem is that the teacher is still the centre during the learning process, so the teacher dominates the learning process in the classroom. This can cause students to be less active. However, on the other hand, some can be applied by teachers to overcome this problem, namely changing learning methods that are more fun because, with this, students will be following the learning process in the classroom (Marbun & Pasaribu, 2021). Likewise, the second cycle of teachers is more focused on raising students' enthusiasm in

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the learning process; for example, in discussion activities, teachers guide students to create enthusiasm in learning activities to increase self-confidence.

The teaching materials used in the learning process are still an obstacle because they have yet to vary, so students are less interested in understanding the material. In the first cycle, teachers provide *PowerPoint presentations* and LKS as material that students will learn and help them understand what is being learned. Likewise, in cycle II, teachers provide LKS and PowerPoint presentations and opportunities to find information from the internet that can be used to collect data (Arfani, 2016). Problems that occur in the classroom have increased because, through the application of *the discovery learning* model, there have been several increases, one of which is teacher activity in teaching and interest in learning. The learning that occurs in the first cycle has been running but has yet to be maximized, and this is because some are carried out well, such as managing time and directing students to respond to what has been learned (Dalimunthe et al., 2021).

The challenges encountered during the initial learning cycle directly impact students' learning outcomes and interests. The research findings indicate that the learning outcomes and students' interest in learning could be much higher, primarily attributed to the ineffective use of learning models that do not facilitate development during learning sessions. For instance, the lack of familiarity with the discovery learning model has led to its improper implementation. Apriana (2019) suggests that the effectiveness of the discovery learning model may be suboptimal if teachers or students need to become more familiar with its application, leading to several shortcomings. Teachers often need help with this learning model due to a lack of understanding of its sequential steps. The challenges encountered during the first cycle using the discovery learning model serve as valuable evaluation material to enhance the learning process in the second cycle (Mansur, 2018).

Based on the results of student scores obtained in the first cycle with a completeness percentage of 25.92%. This is because students have yet to be able to discuss well during learning, so students work more alone and lack mastery of the problems contained in LKS. The unpreparedness of students to face the test is also an obstacle that will impact learning outcomes. Less preparation from students can lead to obtaining grades below KKM. Furthermore, less effective use of time can affect the completeness of learning outcomes.

The existence of problems in cycle I requires several actions to improve the learning process, such as giving warnings so that students are more active in discussing and understanding every problem in LKS. Based on the results of tests conducted in the second cycle, it has increased with a percentage of completeness of 85.17%, meaning that students' success has reached the success indicator of research actions, which is more than 85% (Patandung, 2017). Learning outcomes are one indicator of the success of students in receiving and understanding learning material so that the process of teaching and learning activities can be said to be effective or successful if the desired learning objectives can be achieved. The improvement of learning outcomes cannot be separated from teacher activities in using the right learning model so that it will affect learning outcomes (Nugraha & Sari, 2017).

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Based on the results of observations of students' learning interests carried out during the learning process, several observers assisted them by filling out the observation sheets that have been provided. Some aspects of interest in learning, including pleasure, involvement in learning, interest and sense of attention, have increased from cycle I to cycle II. Certain indicators of learning interest, such as enjoyment, saw a notable rise from 63.88% to 81.82%, classified as "very good." This improvement is attributed to the varied learning patterns introduced in the second cycle, countering the boredom students experienced in the first cycle due to monotonous learning methods. Similarly, student engagement in the learning process increased from 70.36% in the first cycle to 84% in the second. In cycle I, students are not used to actively working together and doing more individually; this causes the involvement of students in cycle I to be less than optimal. A lack of cooperation in the learning process can impact every aspect of teaching and learning activities. For example, active students can solve their problems, and vice versa. Inactive students need help solving problems (Sababalat et al., 2021).

The sense of interest in learning activities also increased from cycle I, which was 73.14%, to 83.33% in cycle II, with a very good category. In the first cycle, students are not interested in learning because there is no variation given by the teacher in the learning process, causing students to feel bored and uninteresting in following the learning process properly. This can be seen when students work on LKS who do not have enthusiasm to work because they need help understanding what has been learned. Likewise, the sense of attention also increased where in cycle I, it was 70.36% to 81.87%, and this shows that students in cycle I pay less attention to what is taught by the teacher. In cycle II, students are accustomed to and understand what the teacher teaches during teaching and learning activities (Sarah et al., 2021).

Based on the explanation above, applying the *discovery learning* model in the learning process can increase student learning interest because the steps in the learning model can foster student learning interest. This aligns with the opinion (Nurdiyansyah & Fahyuni, 2016) that applying the right learning model can foster our motivation and interest in carrying out the learning process. This aligns with the opinion (Anisa et al., 2021) that the discovery learning *model* has an important role in the learning process, can be a tool for teachers in delivering material and aims to stimulate students' curiosity, thoughts, feelings and abilities in learning. The *discovery learning* model plays an important role for teachers to guide students to learn actively, and this is similar to the results that have been obtained (Pratiwi et al., 2021), stating that *the discovery learning* model can increase student interest and learning outcomes as seen from the comparison of results in cycle 1 and cycle 2, this shows that with the application of the model *discovery learning* can increase student interest and learning outcomes (Siregar & Nara, 2010).

D. Conclusion

Implementing the discovery learning model effectively enhances students' interest in plant-related subjects, leading to substantial enhancements in student learning

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achievements. This shows that the discovery learning approach can effectively improve the quality of learning in science, especially in understanding complex concepts such as plant material. In addition, applying this learning model can increase students' enthusiasm for learning.

This research makes a positive contribution to the development of learning methods that can motivate students actively in the learning process and improve their academic achievement. Teachers and educational institutions may consider using learning methods that involve exploration, observation, and reflection to strengthen students' interest in complex topics. In addition, the findings of this study affirm the importance of incorporating discovery-oriented learning strategies into the educational curriculum.

These findings are valuable input for addressing learning process challenges and guiding schools in enhancing education quality. Further research is warranted to explore the discovery learning model's impact on student learning interests and outcomes across different levels, classes, and schools.

References

Anisa, & Sholeha, D. (2021). Upaya Peningkatan Hasil Belajar Siswa melalui Metode Pembelajaran Discovery Learning. *Indonesian Journal of Teacher Education, 2*(1), 218–225.

Anisa, N. N., Septiana, I., & Purbiyanti. (2021). Penerapan Model Pembelajaran Discovery Learning berbantuan Media Interaktif untuk Meningkatkan Hasil Belajar Peserta Didik di SDN 1 Kebonadem Kabupaten Kendal. *Jurnal Penelitian dan Pengembangan Pendidikan. 8*(3): 460-466. Jurnal Penelitian Dan Pengembangan Pendidikan, 3(8), 460–466. https://doi.org/10.33394/jp.v8i3.3912

Apriana, V. (2019). Penerapan Profile Matching Untuk Menentukan Pemberian Beasiswa Pada Siswa Sekolah Menengah Atas. *Jurnal Mantik Penusa, 3*(1).

Arfani, L. (2016). Mengurai Hakikat Pendidikan Belajar dan Pembelajaran. *Jurnal PPKn dan Hukum, 11*(2), 81-97.

Arifin, M. Z., & Setiawan, A. (2020). Strategi Belajar dan Mengajar Guru pada Abad. *Indonesia Journal of Instructional Technology, 2*(1), 37–46.

Asholahudin, M., Syichabudin, I., & Solihin, D. D. (2021). Peningkatan Kemampuan Dimensi Pengetahuan Konseptual Peserta didik melalui Penerapan Model Discovery Learning Terintegrasi Media Pembelajaran KineMaster. *JIIP-Jurnal Ilmiah Ilmu Pendidikan, 4*(7), 536-542. https://doi.org/10.54371/jiip.v4i7.310

Astari, W. (2017). Pengembangan Keterampilan Proses Sains Melalui Metode Penemuan. *Jurnal Pendidikan Biologi, 6*(2), 286–290.

Dalimunthe, R. R., Harahap, R. D., & Harahap, D. A. (2021). Analisis Minat Belajar Siswa Sekolah Dasar terhadap Mata Pelajaran IPA pada Masa Pandemi Covid 19. *Jurnal Basicedu. 5*(3), 1341-1348. https://doi.org/10.31004/basicedu.v5i3.888

https://doi.org/10.51276/edu.v5i2.888

Hasanah, Pantiwati, Y., Restian, A., & Sumarsono, P. (2016). *Belajar dan Pembelajaran*. Malang: UMM Press.

Ibrahim. (2012). *Kurikulum dan Pembelajaran*. Jakarta: PT Rajagrafindo Persada.

Leila, Adhani, A., & Vlorensius. (2021). Hubungan Minat Belajar Siswa Kelas X Lintas Minat pada Mata Pelajaran Biologi terhadap Hasil Belajar Siswa di Madrasah Aliyah Negeri Tarakan. *Jurnal Biopedagogia, 3*(1), 26–36. https://doi.org/10.35334/biopedagogia.v3i1.1848

Lestari, W. (2021). Pengembangan Modul Pembelajaran Bahasa Inggris Berbasis Andragogi Pada Program Studi Pendidikan Biologi di Universitas Muhammadiyah Palembang. *Edunesia : Jurnal Ilmiah Pendidikan, 2*(1), 171–177. https://doi.org/10.51276/edu.v2i1.114

Luthfi, M. R. A., Huda, C., & Susanto, J. (2021). Penerapan Model Pembelajaran Disocery Learning untuk Meningkatkan Keaktifan Belajar Siswa pada Pembelajaran Tematik Kelas V Tema 8 di SD Negeri 1 Selo Kabupaten Grobogan Jawa Tengah. Pendidikan. *Jurnal Penelitian Dan Pengembangan Pendidikan, 3*(8), 422–430. https://doi.org/10.33394/jp.v8i3.3902

Mansur, R. (2018). Belajar Jalan Perubahan Menuju Kemajuan. *Jurnal Vicratina, 3*(1), 145–158.

Marbun, N., & Pasaribu, L. (2021). Faktor-faktor yang mempengaruhi Minat Belajar Pendidikan Agama Kristen di Sekolah. *Jurnal Christian Humaniora, 5*(1), 47–63.

Nugraha, A. A., & Sari, A. (2017). Pengaruh Model Pembelajaran Discovery Learning terhadap Minat Belajar Siswa pada Materi Trigonometeri Kelas X. In *Prosiding Seminar Nasional Integrasi Matematika dan Nilai Islami. 1*(1): 123-127. 1(1), 123–127.

Nurdiyansyah, & Fahyuni. (2016). *Inovasi Model Pembelajaran Kurikulum 2013*. Jakarta: Nizamia Learning Center.

Oktavia, R. (2020). Pengaruh Multimedia Interaktif Pada Pembelajaran Biologi Jaringan Tumbuhan terhadap Keaktifan dan Pengetahuan Siswa SMAN 6 Darul Makmur. *Edunesia : Jurnal Ilmiah Pendidikan, 1*(3), 73–81. https://doi.org/10.51276/edu.v1i3.66

Pane, A., & Dasopang, M. D. (2017). Belajar dan Pembelajaran. *Jurnal Kajian Ilmu-Ilmu Keislaman, 2*(3), 333–352.

Patandung, Y. (2017). Pengaruh Model Discovery Learning terhadap Peningkatan Motivasi Belajar IPA Siswa. *Journal of Educational Science and Technology, 3*(1), 9–17.

Pratiwi, Zhiddiq, S., Umar, R., & Saputro, A. (2021). Improving Student Learning Outcomes in Geography Learning Through the Discovery Learning Model. *Jurnal La Geografia, 2*(19), 226–242.

Sababalat, D. F., Purba, L. S. L., & Sormin, E. (2021). Efektivitas Pemanfaatan Media Pembelajaran Teka Teki terhadap Peningkatakan Minat Belajar Siswa. *Jurnal*

https://doi.org/10.51276/edu.v5i2.888

Pendidikan Matematika dan Sains, 1(6), 207-218. https://doi.org/10.33541/edumatsains.v6i1.2959

Sarah, C., Karma, N., & Rosyidah, A. N. K. (2021). Faktor-faktor yang Mempengaruhi Minat Belajar Siswa pada Mata Pelajaran Matematika di Gugus III Cakra negara. *Jurnal Progress Pendidikan, 1*(2), 13–19. https://doi.org/10.29303/prospek.v2i1.60

Satriani, Bachtiar, T., & Jannah, M. (2021). Pengaruh Model Discovery Learning dengan memanfaatkan Lingkungan sebagai Sumber Belajar Terhadap Motivasi dan Hasil Belajar Siswa. *Jurnal Sainsmat, 1*(10), 20–31. https://doi.org/10.35580/sainsmat101227682021

Siregar, E., & Nara, H. (2010). *Teori Belajar dan Pembelajaran*. Jakarta: Ghalia Indonesia.

Susilawati, E., Khausar, K., & Hera, R. (2020). Analisis Hambatan Pembelajaran Biologi Materi Jaringan Tumbuhan Dalam Pelaksanaan Kurikulum 2013 Di SMA. *Edunesia : Jurnal Ilmiah Pendidikan, 1*(3), 1–8. https://doi.org/10.51276/edu.v1i3.48

Sutrisno, Happy, N., & Susanti, W. (2020). Eksperimentasi Model Discovery Learning terhadap Prestasi dan Minat Belajar Matematika Siswa. *Jurnal Program Studi Pendidikan Matematika, 3*(9), 580–590. https://doi.org/10.24127/ajpm.v9i3.2804