Jurnal Ilmu Sosial dan Pendidikan (JISIP)
Vol. 9 No. 1 Januari 2025
e-ISSN : 2656-6753, p-ISSN: 2598-9944
DOI: *10.58258/jisip.v7i1.7735/http://ejournal.mandalanursa.org/index.php/JISIP/index*

Improving Science Learning Outcomes on Changes in the Form of Matter Through the Media-Assisted Discovery Learning Model for Class IV Students at Sdn 8 Barru

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Article Info
Article history:
Received: 18 November 2024
Published: 1 Januari 2024

Keywords:
Discovery Learning;
Learning outcomes;
Change in the form of an object

Abstract
This journal reviews the material on the change of the form of material substances through the media-assisted Discovery Learning model in science learning at SDN 8 Barru. This study aims to find out the concept of changing the form of media-assisted forms in the science learning process at SDN 8 Barru, Barru Regency. This type of research is classroom action research (PTK). The research instrument is the student worksheet (LKPD). The source of research data is the results of observations in the classroom, interviews from Natural Science teachers, and students. The results of the study showed that the improvement of understanding the changes in the form of physical substances using the 2d media-assisted discovery learning model obtained good and quite satisfactory results. So that it is in accordance with what is expected by the teacher. In the pre-action cycle, the percentage of students who completed was only 16% and the percentage of students who did not complete was 84%, based on the results of the learning evaluation carried out at the end of each meeting of cycles I and II, it showed that in cycle 1 with the percentage of students who completed 33% and the percentage of students who completed 67%, while in cycle II the percentage of students completed was 100%. Overall, the learning outcomes of students about the form of material substances have increased in each meeting. The implementation process uses the Discovery Learning model which contains effective learning concepts on media-assisted material changes in the form of objects in science learning. The impact of the material change of the form of this object provides a deep understanding and can distinguish the change of form through the media and experiments that are more fun, inspiring, and meaningful. In addition, students are inspired to experiment with the form of material substances in daily life.

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1. INTRODUCTION

Education is an important aspect of life, where every child, including children with special needs, has the same rights and opportunities to get it. In Indonesia, educational development continues to experience significant progress from year to year. In facing the future, along with developments in the world of education, children must be prepared with adequate provisions in various fields. Therefore, education needs to be provided equally to all children without exception.

Learning outcomes are the abilities, skills, or level of success achieved by students after completing the learning process. The competencies or abilities expected after learning include cognitive, psychomotor and affective aspects (Dahliana, 2022). Learning outcomes according to Pramudya et al in Berliana, (2021) Learning outcomes are a process that aims to change student behavior. For example, students who initially did not know become aware, those who initially did not understand become understanding, and those who initially were unable become capable. These changes in students cover the cognitive, affective and psychomotor domains, which are measured through test and non-test techniques.: Related to learning outcomes to assess whether students are able to understand

a concept during learning. If there is a change in behavior for the better, then this shows success in learning. Learning success can be measured through various tests, such as written tests, oral tests, or practical tests.

A change in the form of an object is a process in which an object experiences changes in shape, volume, color, size, or other properties so that it becomes different from its initial condition or becomes a new form. This change can occur because the object is influenced by factors such as heat, temperature, humidity, etc.: (Berliana, 2021). This means that a change in the form of an object is a form of change in which an object experiences differences from its previous form, including in terms of size, shape, color and aroma. This change process can occur in various ways, and some of them can be observed directly by the human eye. Objects can be liquid, gas or solid, which have molecular motion such as translational motion (moving places) and vibrational motion (vibrating in place). Implementation of learning in class can use media tools that are appropriate to the theme. The use of media will help students more easily understand and understand the material they receive from the teacher. One of the media that can be applied in science learning is with the theme Forms of Objects (Solid, Liquid and Gas). The use of concrete objects is done in order for students to better understand the material because students can immediately practice and observe the changes that occur.

In this way, learning is more meaningful for students because students experience the process themselves, so it is hoped that students will understand the material presented better. Here it is hoped that students will experience a long-term memory process. The focus of this research is to increase interest in learning about news texts by applying the discovery learning model. The discovery learning model is a model to expand active learning through self-discovery and investigation, so that the results obtained last a long time so that students always remember and do not forget (Maharani, 2017).

2. RESEARCH METHOD

This research uses Classroom Action Research which begins with problems in the field, then reflected (evaluated) and analyzed using supporting theories to then take action in the field. The results of this research are expected can be used as a reference for teachers to implement learning that suits students' motivation and background so that learning becomes more meaningful.

This classroom action research uses the Discovery Learning model. The focus of this research is to increase knowledge about changes in the states of substances by applying the discovery learning model. The discovery learning model is an approach that prioritizes active learning through a process of discovery and independent investigation. In this way, the knowledge gained by students is more long-lasting, so they will remember more easily and not forget quickly: (Maharani, 2017). namely in the form of a rotation from the first cycle to the cycle the second and next. The first step before entering the first cycle is to identify the problem. Each cycle includes planning, action implementation, observation and reflection, then continued in the next cycle starting from the planning stage which has been revised from the previous cycle, action implementation, observation, and reflection/evaluation

Cycle I

Cycle 1 is implemented on the 1st week of September 2024.

1. Planning

At the start of the research, the researcher made initial observations of the learning process usually carried out by peer teachers in science subjects. After that, the researcher and teacher prepared a learning plan by applying the learning model *Discovery Learning*

with the help of media in science learning on the subject of Forms of Objects (Solid, Liquid and Gas) Semester I. The next step is to formulate learning objectives, develop learning scenarios, and plan appropriate media/tools to facilitate the learning process.

2. Implementation

   Teachers at this stage carry out learning using models *Discovery Learning* with the help of media in the daily lives of students in Class IV science subjects at UPTD SDN 8 Barru.

3. Observation

   When the researcher plays the role of teacher teaching, fellow teachers (research partners) who carry out observations record activities during the learning process. The notes resulting from these observations will later be analyzed and reflected on as a reference for further learning. previously analyzed and then reflected upon. The results of the analysis and reflection carried out by both are used as reference material for carrying out further activities so that subsequent learning is more optimal. These results are used as a basis for developing actions in cycle 2.

Cycle 2

In cycle 2, the steps taken are the same as the first cycle. It's just that the results of the analysis and reflection are used as material for preparing action plans for this cycle. This is done so that the results of this cycle are more optimal. This cycle will be implemented in the 3rd week of September 2024.

3. RESEARCH RESULTS AND DISCUSSION

Table 3.1 Cycle I Earning Value

No	Student Name	Jk	Number of Questions	Score	Earned Value	Completed and incomplete
1	WDKH	P	20	15	75	Complete
2	ULL	L	20	12	65	Not Completed
3	RZK	L	20	5	25	Not Completed
4	ATK	P	20	13	65	Not Completed
5	ZKR	L	20	8	40	Not Complete
6	SYMH	P	20	14	70	Complete
Lowest value					25	
The highest score					75	
sum of all values					340	
Average value					56,6	
Number of students who completed						2 People
Number of students who did not complete						4 People
Percentage of learning completeness					33%	
The classic presentation is incomplete					67%	

Based on the source of the calculation results of the completeness of students' learning outcomes, it was found that the completeness of students' training results in cycle 1 was 33%. Based on the results of cycle 1 learning completion, students' learning outcomes were obtained with an average score of 56 which can be seen in table 2.2 below:

Table 3.2
Percentage of Learning Completeness for Cycle 1 Students

No	Mark	Number of Students	Percentage of Learning Completeness	Learning Completeness Category
1	≥70	2	33%	Complete
2	<70	4	67%	Not Completed

Table 3.3
Cycle II Earned Value

No	Student Name	Jk	Number of Questions	Score	Earned Value	Completed and incomplete
1	WDKH	P	20	19	95	Complete
2	ULL	L	20	18	90	Complete
3	RZK	L	20	15	75	Complete
4	ATK	P	20	16	80	Complete
5	ZKR	L	20	17	85	Complete
6	SYMH	P	20	18	90	Complete
Lowest value					75	
The highest score					95	
sum of all values					515	
Average value					85,8	
Number of students who completed						6 People
Number of students who did not complete						-
Percentage of learning completeness					100%	
The classic presentation is incomplete					0%	

Based on the source of the calculation results of the completeness of students' learning outcomes, it was found that the completeness of students' training results in cycle 2 was 100%. Based on the results of cycle 2 learning completion, students' learning outcomes were obtained with an average score of 85 which can be seen in table 2.4 below:

Table 3.4
Percentage of Learning Completeness for Cycle 1 Students

No	Mark	Number of Students	Percentage of Learning Completeness	Learning Completeness Category
1	≥70	6	100%	Complete
2	<70	0	0%	Not Completed

The results of the research show that the use of the media-assisted Discovery Learning model in learning about changes in the state of substances provides good and satisfactory results. This finding is in line with teacher expectations, because the model is able to increase student understanding effectively. Experts also argue that the Discovery Learning approach, which actively involves students in the process of exploration and discovery, can increase in-depth understanding of concepts and make learning more meaningful and interesting for students. Comparative data in these 2 cycles can be seen in table 2.5 below:

Table 3.5
Comparison of the ability to understand changes in the state of matter in class 4 students
UPTD SDN 8 Barru

Information	Pre-Cycle Action		Cycle I		Cycle II	
	F	%	F	%	F	%
Complete	1	16%	2	33%	6	100%
Not Completed	5	84%	4	67%	0	0%

According to (Hamalik, 2015: 29) *discovery learning* is a model for developing active student learning methods by discovering and investigating, so the results obtained will last a long time in the memory and will not be easily forgotten by students and have been carried out previously which is relevant which shows that the learning model *discovery learning* can improve science learning outcomes in material on changes in the form of objects. As for the differences between the research that will be conducted and previous research at the Kebun Jeruk 11 Pagi Public Elementary School, West Jakarta, based on the results of action research on improving science learning outcomes through models *Discoveri Learning* in cycle I and cycle II resulted in the conclusion that model learning *Discovery Learning* can increase students' enthusiasm for learning, thereby reducing students' boredom in receiving lessons. In learning, it is necessary to give rewards to students who succeed as motivation for other students to improve the desired learning outcomes. Student learning outcomes from cycle I and cycle II increased significantly with a KKM of 70. The results of cycle I of 30 students were only 15 who were declared to have passed, with a class average of 69 percentage of 50%. Then improving the learning model *Discovery Learning* continued in cycle II with an average class 77 percentage of 80%, an increase from cycle I. Of the 30 students, only 6 students did not complete.

From the results, the research results show that improving understanding of changes in the form of objects using the 2D media-assisted discovery learning model produces good and quite satisfactory results. So that it is in accordance with what the teacher expects. In the pre-action cycle, the percentage of students who completed was only 16% and the percentage of students who did not complete was 84%. Based on the results of learning evaluations carried out at the end of each meeting in cycles I and II, it showed that in cycle 1 the percentage of students who completed was 33% and the percentage 67% of students completed, while in cycle II the percentage of students completed was 100%. Overall, students' learning outcomes about the forms of matter have increased with each meeting.

4. CONCLUSION

Based on the results of research starting from the pre-action cycle, cycle I and cycle II, it can be concluded that the media-assisted Discovery Learning model can improve students' ability to understand changes in the form of substances with increasing value from the pre-action cycle to cycle II. This is shown by the pre-action details, namely understanding the questions correctly 16%, Cycle I being 33%, and Cycle II being 100%.

5. ACKNOWLEDGEMENT

A big thank you to A. Muafiah Nur, S.Pd., M.Pd. as a supervising lecturer who has guided and provided very meaningful direction and motivation since the preparation of this article. The author also wishes to the UPTD SDN 8 Barru school who has received and guided him during the KKN-Dik activity process, and the author also wishes to his KKN-Education colleagues. Sis who has supported and accompanied me throughout this activity.

6. BIBLIOGRAPHY

Arikunto, S. (2019). Prosedur Penelitian. Jakarta: Rineka cipta.

Berliana, N. (2021). Landasan Teori اديج. *Dasar-Dasar Ilmu Politik*, 18.

Calonjenius. 2020. Pengertian Discovery Learning: Ciri-Ciri, Karakteristik, Langkah, Serta Kelebihan dan Kekurangannya. Sijenius.com

Dhelilik. 2023. Langkah-Langkah Model Discovery Learning dalam Proses Pembelajaran. bertema.com

Festiawan, R. (2020). Belajar dan pendekatan pembelajaran. *Universitas Jenderal* Soedirman, 1–17.

Hasibuan, E. K. (2018). Analisis Kesulitan Belajar Matematika Siswa Pada Pokok Bahasan Bangun Ruang Sisi Datar Di Smp Negeri 12 Bandung. *AXIOM : Jurnal Pendidikan dan Matematika*, *7*(1), 18–30. https://doi.org/10.30821/axiom.v7i1.1766

Imam Santoso, 2019, Inpeksi Sanitasi Tempat-Tempat Umum, Gosyen Publishing, Yogyakarta, 203 halaman.

Junaidi, J. (2019). Peran Media Pembelajaran Dalam Proses Belajar Mengajar. *Diklat Review :* Jurnal *manajemen pendidikan dan pelatihan*, *3*(1), 45–56. https://doi.org/10.35446/diklatreview.v3i1.349

Kamal, dkk. (2017). Penerapan Model Discovery Learning Dengan Media Konkret Dalam Peningkatan Hasil Belajar IPA Tentang Energi Pada Siswa Kelas IV SD Negeri 2 Kalibagor Tahun Ajaran 2016/2017. Jurnal Kalam Cendekia, 5(3.1), 296-300.

Nurjan, Syarifan (2016) *PSIKOLOGI BELAJAR*. Wade Group, Ponorogo.

Sartika, F., Desriwita, E., & Ritonga, M. (2020). Pemanfaatan media pembelajaran dalam meningkatkan motivasi dan hasil belajar PAI di sekolah dan madrasah. *Humanika*, *20*(2), 115–128. https://doi.org/10.21831/hum.v20i2.32598

Suryani, Nunuk. (2018). Media Pembelajaran Inovatif dan Pengembangannya. Bandung: Remaja Rosdakarya.

Susanto Ahmad (2016) Teori Belajar dan Pembelajaran di Sekolah Dasar Jakarta : Prena Media Group.

Suralaga. (2021). Psikologi Pendidikan. Depok: Rajagrafindo Persada

TARIGAN, N. (2019). Meningkatkan Hasil Belajar Siswa Menggunakan Model Pembelajaran Course Review Horay Pada Mata Pelajaran Ipa Di Kelas Iv Sd …. *Pedagogik: Jurnal Ilmiah Pendidikan …*, 5–14.

Tjiptono, G. (2020). Siklus Hidup. *Convention Center Di Kota Tegal*, *938*, 6–37.