

Improving Student Learning Outcomes Through the MORDISCVEIN Learning Model Assisted by Animated Video Media in Science and Social Studies (IPAS) Instruction for Fourth-Grade Students at SDN 6 Tapa, Bone Bolango

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ABSTRACT

This study is Classroom Action Research (CAR) with the research question of whether student learning outcomes can be improved through the Mordiscvein learning model assisted by animated video media in Science and Social Studies (IPAS) learning for Class IV students at SDN 6 Tapa Bone Bolango. The objective of this study is to improve student learning outcomes through the Mordiscvein learning model assisted by animated video media in IPAS learning for Class IV students at SDN 6 Tapa Bone Bolango. This research was conducted in two cycles, where each cycle consisted of two meetings with four stages: planning, acting, observing, and reflecting. The research subjects consisted of 18 students, consisting of 9 male students and 9 female students. The results showed that in Cycle I, out of 18 students, only 6 students achieved the Learning Objective Completion Criteria (KKTP ≥ 75) with a percentage of 33%, while 12 students or 67% had not achieved mastery. After learning improvements were made in Cycle II, student learning outcomes increased: 16 students or 89% achieved mastery, while 2 students or 11% had not yet achieved the Learning Objective Completion Criteria (KKTP < 75). Thus, it can be concluded that the application of the Mordiscvein learning model assisted by animated video media can improve the learning outcomes of Class IV students in IPAS at SDN 6 Tapa Bone Bolango.

Article Information

Keywords:

Hasil belajar, ilmu pengetahuan sosial (IPS), media video animasi, dan model pembelajaran Mordiscvein.

ABSTRAK

Penelitian ini merupakan Penelitian Tindakan Kelas (PTK) dengan rumusan masalah yaitu apakah hasil belajar siswa dapat ditingkatkan melalui model pembelajaran *Mordiscvein* berbantuan media video animasi pada pembelajaran IPA di kelas IV SDN 6 Tapa Bone Bolango. Penelitian ini bertujuan untuk meningkatkan hasil belajar siswa melalui model pembelajaran *Mordiscvein* berbantuan media video animasi pada pembelajaran IPA kelas IV SDN 6 Tapa Bone Bolango. Penelitian ini dilaksanakan dalam dua siklus, di mana setiap siklus terdiri dari dua kali pertemuan dengan empat tahapan, yaitu: perencanaan, pelaksanaan tindakan, observasi, dan refleksi. Subjek penelitian terdiri dari 18 siswa, yang meliputi 9 siswa laki-laki dan 9 siswa perempuan. Hasil penelitian menunjukkan bahwa pada Siklus I, dari 18 siswa hanya 6 siswa yang mencapai Kriteria Ketercapaian Tujuan Pembelajaran (KKTP > 75) dengan persentase 33%, sedangkan 12 siswa atau 66% belum mencapai ketuntasan. Setelah dilakukan perbaikan pembelajaran pada Siklus II, hasil belajar siswa meningkat, yaitu 16 siswa atau 89% telah mencapai ketuntasan, sedangkan 2 siswa atau 11% belum mencapai ketuntasan kriteria tujuan pembelajaran (KKTP < 74). Dengan demikian, dapat disimpulkan bahwa penerapan model pembelajaran *Mordiscvein* berbantuan media video animasi dapat meningkatkan hasil belajar siswa pada pembelajaran IPA di kelas IV SDN 6 Tapa Bone Bolango.

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1. Introduction

Learning in elementary school is a crucial stage in building students' foundational knowledge, attitudes, and skills. At the concrete operational development stage, learning needs to be designed actively, contextually, and meaningfully for easy understanding. One subject that plays a crucial role in shaping students' understanding of scientific concepts is Natural and Social Sciences (IPAS). Learning IPAS requires students not only to memorize facts and concepts but also to connect knowledge to real-life experiences. Hidayat et al. (2023:102) explain that learning IPAS with an active and contextual approach can significantly improve students' conceptual understanding through real-life experiences, experiments, environmental observations, group discussions, and problem-solving. However, learning in elementary schools is still dominated by conventional teacher-centered methods, resulting in student passivity and less than optimal conceptual understanding, critical thinking skills, and student participation. Sari et al. (2022:44) show that the dominant use of the lecture method has an impact on low student learning outcomes. Therefore, more active, interactive, and student-centered learning is needed.

One of the science topics often considered difficult is force, which includes pushing and pulling forces, as well as the influence of force on the motion and shape of objects. Students' low understanding of force is also influenced by the lack of use of learning media capable of concretely visualizing concepts. Therefore, engaging, interactive, and contextual learning media are needed to make the concept of force easier to understand and learning more effective and meaningful. According to Prakoso and Cahyono (2022:48), animated video media utilizes moving visual technology to present material in a contextual and interactive manner, thereby helping students grasp concepts more quickly. Sari and Wahyudi (2023:52) state that animated videos can increase learning motivation through attractive and interactive visual displays. In addition, Putri et al. (2024:73) suggest that animated videos combine audio and visual elements to help students understand the material systematically and comprehensively. The Mordiscvein learning model is one learning model that can improve students' 4C aspects and is designed to suit the needs of elementary school students. This model promotes fluency, flexibility, and originality in approaching objects, events, concepts, and feelings. Based on the assumption that students can and should learn techniques that stimulate creativity, the classroom environment must be conducive to recognizing and rewarding diverse responses (Saleh et al., 2022:35). Based on the results of initial observations on May 14, 2026 with the fourth grade teacher, Mrs. Astuti Maliku, S.Pd., it was obtained that out of 18 students, only 3 students achieved the scores according to the Learning Objective Achievement Criteria (KKTP), while the other 15 students still needed guidance and improvement in learning science and science on the topic of force. This condition was caused by a less varied learning model, methods that did not fully pay attention to the characteristics and needs of students, learning that was not linked to real life, and the use of books

as the main source and learning media. As a result, learning was less effective, less interesting, still teacher-centered, and students easily felt bored and lacked enthusiasm. The use of innovative learning media, such as animated videos, is one solution because it is able to present abstract concepts in a more concrete, interesting, and easy to understand way. Through interactive visual displays, sound, and movement, animated videos can help students understand the concept of force and its application in everyday life. The Mordiscvein learning model was chosen because it emphasizes an active, collaborative learning process, and is based on direct learning experiences. This model encourages students to discover concepts through stages of critical thinking, discussion, and verification of findings. Therefore, the application of the Mordiscvein learning model assisted by animated video media is expected to improve student learning outcomes in science learning on the material of force in class IV of SDN 6 Tapa Bone Bolango.

2. Method

A. Background and Characteristics of the Research

1. Research Background

The research used is classroom action research (CAR) which was conducted at SDN 6 Tapa Bone Bolango located on Jalan Imam Samadi, Langge, Tapa Bone Bolango District. The principal of SDN 6 Tapa Bone Bolango is Mrs. Salma Razak with 11 teachers and 131 students consisting of 71 boys and 60 girls. There is 1 principal's office, 1 teacher's room, 6 classrooms, 1 library, 1 UKS and 2 toilet rooms.

2. Characteristics of Research

The characteristics of this study are 18 fourth-grade students at SDN 6 Tapa Bone Bolango. This study aims to improve student learning outcomes in science learning on the topic of forces around us through the mordiscvein learning model assisted by animated video media. Based on the results of initial observations, it was found that most students still have difficulty in understanding the concept of force, especially in distinguishing the types of forces and the effects of forces on objects. In addition, student interest and activeness in participating in science learning are still relatively low because learning tends to be teacher-centered and does not use interesting learning media. Therefore, more interactive, innovative, and interesting learning models and media are needed so that students are more active in the learning process and are able to improve student understanding and learning outcomes in science learning.

B. Time Study

This research was conducted in the 2026 academic year.

C. Research Variables

The objects studied in this research are fourth-grade students. In relation to the implementation of this research, the following research variables can be presented:

1. Input variables

The input variables in this classroom action research are 18 fourth grade students, teaching teachers, learning resources, evaluation procedures in the form of tests, and learning approaches.

2. Process Variables

The process variable in this research is the learning process of the Natural Sciences subject with the Mordiscvein

learning model assisted by Animation Video media. The steps for implementing the learning consist of six Mordiscvein The first stage is Opening Surprise The second stage is Ice Breaking Problem Formulation and Hypothesis The third stage is Formulating Experimental Steps by Relay Method, Continued with Experiments. The fourth stage is Data Publication. The fifth stage is Determining Facts Through Rise Hand. The sixth stage is Arranging Keywords into Conclusions.

3. Output variables

Student learning outcomes through aspects of the Mordiscvein learning model assisted by Animation Video media in the elementary school science subject of force material. The indicators used in estimating student learning achievement and psychomotor assessment in cycle I include being able to demonstrate an attitude of faith, devotion to God Almighty, and noble character, critical reasoning, and mutual cooperation correctly, students are able to analyze the influence of force on objects, students are able to analyze the benefits of force in everyday life. Students are able to formulate problems and hypotheses through group discussions correctly. Then the indicators used in cycle II are students are able to analyze simple experiments about force, and students make problem formulations and hypotheses and can present the results of group discussions.

D. Research Procedures

This research procedure consists of several stages of action implementation that must be passed by the researcher, namely the preparation stage and the action implementation stage which are carried out in two cycles. Each cycle consists of four stages, namely: (1) planning, (2) action implementation, (3) observation/monitoring and evaluation, and (4) analysis and reflection. The following is a description of the research procedure in the form of cycles.

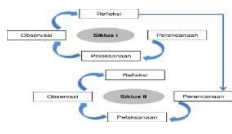


Figure 3.1 Research Procedure Source: Arikunto et.al., 2021
1. Planning Stage

The researcher discussed with the partner teachers and the principal the plans and procedures for the classroom action research. After that, the researcher developed a Teaching Module and prepared teaching materials and all the necessary materials for the learning process. Furthermore, the researcher classified the learning approaches that would be used during the learning process, including the characteristics of each student. The researcher also discussed the allocation of time for the implementation of the learning process for two consecutive cycles, including the schedule for science and science learning on specific days and hours so that the researcher could adjust it to the school schedule. The researcher also prepared observation sheets for teacher and student activities, and then the researcher asked the class teacher to act as an observer during the research process. The purpose of this observation sheet was to see the extent to which the researcher carried out the teaching process in the classroom, as assessed by the class teacher through the observation sheet provided.

Action Implementation Stage

The implementation of this classroom action was carried out in the form of collaboration with partner school teachers. In cycle I, while the teacher, in this case the researcher, carried out the teaching and learning process according to the teaching materials that had been prepared or discussed in advance with the class teacher, the class teacher accompanied the research process because in this case the class teacher acted as an observer to see the extent of the researcher's ability to implement the learning steps that had been designed according to the teaching module that had been created. Likewise, in cycle II, the concept was still the same, however, aspects that had not been implemented well in cycle I were improved again in cycle II so that the learning process would be more optimal.

Monitoring and Evaluation Stage

The monitoring and evaluation stage was conducted by researchers to determine the extent to which students understood the concepts learned during the learning process, both in Cycle I and Cycle II. If no improvement occurred in Cycle I, the study continued in the next cycle until students met the Learning Objective Achievement Criteria (KKTP). After that, the study was terminated because it was deemed to have met research procedures.

Analysis and Reflection Stage

At this stage, the researcher and the class teacher or Observer conduct a reflection at the end of each learning process to determine the extent of the researcher's mastery in implementing teaching in the classroom. If identified through the observation sheet carried out by the Observer there is still syntax that has not been fulfilled and other problems such as facilities and infrastructure that become obstacles during the learning process are corrected in cycle 2 so that the errors that exist in cycle 1 are not repeated, so that in the second cycle there is an increase in student learning outcomes in accordance with those expected by the researcher, then the research is stopped in cycle 2 because the results of the analysis and review of cycle 2 are more than cycle 1 shows that classroom action research using the Mordiscvein learning model assisted by Animation Video media has been tested to improve student learning outcomes in the subject of Natural Sciences Material on the forces around us in class IV SDN 6 Tapa Bone Bolango

Data collection technique

Data collection techniques in this research include: Interviews, Observation, Documentation, and Tests.

Data Analysis Techniques

The data analysis technique in this study applies several assessment instruments, namely: (1) Teacher observation sheets used to monitor and assess aspects of learning carried out by teachers, (2) Written tests to determine students' science learning outcomes on the material that has been studied, and to determine the extent to which actions can produce the changes desired by the researcher.

Observation of Teacher Activities

The data that has been obtained from collecting data regarding learning activities in each cycle uses the criteria of very good (SB), Good (B), Fair (C), Poor (K).

Result Data Student Learning

Students' science learning outcomes are assessed using a pre-designed answer key. After analyzing the students'

answers, the learning outcomes are determined. Learning outcomes can be determined using the following formula:
Value (Score Obtained)/(Maximum Score) X100%

Table 5. Teacher Activity Criteria

NO	Percentage Range	Category
1	87-100	Very good
2	75-86	Good
3	65-75	Enough
4	<64	Not enough

Based on the data analysis, the reflection stage is conducted by reviewing all activities during the learning process, including student achievement tests and teacher and student activity sheets. The results of this comprehensive data review are crucial for deciding whether the research should proceed to the next cycle or whether it has been declared successful.

3.Results and Discussion

A. Research Results

The researcher presents the results during the classroom action research (CAR). This research is located in the fourth grade of SDN 6 Tapa Bone Bolango which has 18 students, for the 2026 academic year. This research was conducted in two cycles of four meetings. Each meeting includes four stages, preparation, planning, implementation of actions, monitoring and evaluation, and analysis and reflection. The researcher and parents collaborated to implement actions to improve student learning outcomes using the mordiscvein model, which was supported by animated video media in the science subject on the material about forces around us in the fourth grade of SDN 6 Tapa Bone Bolango. In this study, the fourth grade teacher (partner teacher) and peers observed the teaching and learning activities carried out by the researcher. The initial observation was carried out on May 14, 2026. The implementation of the first cycle of action meeting was held on Monday, May 18, 2026 and the second meeting was held on Tuesday, May 19, 2026, while in cycle II the second meeting was held on Thursday, May 21, 2026 and the second meeting was held on Friday, May 22, 2026. For each meeting, 70 minutes were allocated.

1. Implementation of Cycle I Learning
 - a. Preparation Stage

At this stage, the researcher compiled the Teaching Module by referring to the Learning Outcomes (CP) whose derivatives resulted in Learning Objectives (TP) which were then arranged into a Learning Objective Flow (ATP). The First Finding In cycle I, namely discussing the sub-material Introduction to force with the learning objective that students can Explain the pull and push that can cause objects to move or change shape. The second meeting discussed the sub-theme of muscle force. The learning instrument consisted of a teacher observation sheet, a student observation sheet, which was filled out by the observer in this case the class teacher using the Mordiscvein learning model assisted by Animation Video media.

- B. Action Implementation Stage

The implementation of Cycle I actions was carried out in two meetings. The first meeting was held on Monday, May 18, 2026, for fourth-grade students with the material of introduction to force. The implementation of learning refers

to the Learning Implementation Plan (RPM) that has been prepared previously. Learning is carried out by applying the Mordiscvein model to improve students' understanding and learning outcomes in the material of introduction to force. Learning activities last for 2 x 35 minutes and are carried out according to the planned learning steps.

1. Implementation of Cycle I Actions Meeting 1

The implementation of Cycle I actions was carried out in two meetings. The first meeting was held on Monday, May 18, 2026, for fourth-grade students with the topic of introducing force. Learning refers to the Lesson Implementation Plan (RPM) and applies the Mordiscvein model to improve student understanding and learning outcomes. Learning lasted for 2 x 35 minutes according to the planned steps. At the beginning of the lesson, the teacher opened the lesson with a greeting, asked how they were, prayed together, sang the national song "Dari Sabang Sampai Merauke", checked student attendance and readiness, and conducted apperception by displaying images of various forces on the LCD. The teacher then conveyed the learning objectives. In the main activity, the teacher provided a stimulus by showing an animated video about introducing force and asking students to pay attention to it, followed by a question and answer session. Next, students took a roll of paper containing keywords from the material on introducing force. Group representatives took a roll of paper and received a Student Worksheet (LKM) containing problems and tasks to be completed together. The teacher explained the work instructions and reminded students to work together and respect each other's opinions. Students discussed to complete the task based on the keywords obtained, then formulated the problem and hypothesis. Afterward, each group presented the results of their discussions and hypotheses. The teacher directed students to refine their hypotheses based on the animated video, then presented their revised results. Next, the teacher provided several sentences related to the introduction to style material and asked students to determine whether the sentences were facts or opinions by raising their hands and explaining their reasons. In the next activity, group representatives presented conclusions based on the keywords obtained in the "opening surprise." The teacher provided reinforcement, reviewed the keywords, and explained material that had not been covered in the discussion. In the final activity, the teacher and students reflected by discussing their feelings after participating in the lesson and presented the material that would be discussed in the next meeting. The teacher then asked students to pray and ended the lesson with a greeting.

2. Implementation of Cycle I Actions, Meeting II

The implementation of Cycle I Meeting II was held on Tuesday, May 19, 2026 with the material continuing the learning about the introduction of force. The learning used a model that had been planned according to the Learning Implementation Plan (RPM) with a time allocation of 2 x 35 minutes and was attended by all fourth grade students. Before the learning, the teacher opened the activity with a greeting, asked how they were, prayed together, sang the national song "From Sabang to Merauke", checked student attendance and readiness, and conducted apperception by displaying images about muscle force via LCD. The teacher

then conveyed the learning objectives. In the main activity, the teacher provided a stimulus by showing an animated video about various muscle forces and frictional forces, then continued with a question and answer session. Students took a roll of paper containing keywords about the effect of force on objects. Each group then received a Student Worksheet (LKM) and discussed the various muscle forces based on the keywords obtained. After the discussion, students formulated problem formulations and hypotheses, then presented the results of the group discussion.

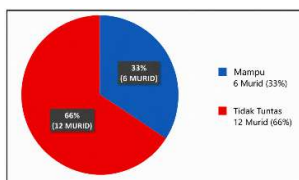
The teacher directs students to refine their hypotheses based on animated video media. After revision, each group presents their results according to the specified rules. Next, the teacher provides several sentences related to the material on muscle strength to determine facts or opinions. Students answer by raising their hands and providing reasons for their answers. In the next activity, group representatives present conclusions based on the keywords obtained in the "opening surprise". The teacher provides reinforcement, reviews the keywords, and explains material that has not been covered in the discussion. In the final activity, the teacher and students reflect by discussing their feelings after participating in the lesson and the material that will be discussed in the next meeting. The teacher then asks students to pray and ends the lesson with a greeting.

C. Monitoring Stage Evaluation Stage Cycle I

At the end of the second meeting of cycle I, an evaluation was conducted to determine the level of achievement of student learning outcomes. This was done by giving them questions using animated video media (questions are in the attachment). The evaluation process was carried out after the teacher closed the lesson and continued with an evaluation to measure the ability of learning outcomes in cycle I. Students worked on the evaluation questions individually. After the evaluation process was completed, the teacher returned and corrected the students' work. Evaluation of student learning outcomes in cycle I was a description of the success of activities during teaching and learning activities in the classroom. In addition to using observations of student learning outcomes activities, the researcher also conducted a written test that included multiple choice and descriptive questions on the material of various styles using the Mordiscvein learning model assisted by animated video media. The student learning outcomes in cycle I can be seen in the following table:

Table 4.1 Data on Learning Outcomes of Grade IV Students, Cycle I

Based on the student learning outcome data, the graph can be described as follows:



The data in diagram 4.1 shows that 6 (33%) of fourth-grade

students met the Learning Objectives Achievement Criteria (KKTP), namely ≥ 75 . Meanwhile, 12 (66%) did not achieve the Learning Objectives Achievement Criteria (KKTP), namely ≤ 74 . The data above shows that of the total of 18 students who participated in the evaluation in cycle I, most of the students still did not achieve the learning objectives achievement criteria (KKTP) that had been applied. Thus, it can be concluded that the learning outcomes in cycle I did not meet the expected success indicators.

1) Observation of Teacher Activities in Learning

a) Meeting 1

Observations were conducted to monitor teacher activities during the teaching and learning process to determine whether all aspects listed in the observation sheet were implemented to improve student learning outcomes in science learning through the application of the Mordiscvein learning model assisted by animated video media. The observation format was used to monitor teacher activities from pre-action to closing activities, by observers who were class teachers. The results achieved regarding teacher activities in cycle I, the first meeting, are presented in the following table:

Table 4.2 Data from Observation Results of Teacher Activities Meeting I Meeting II

No	Aspect Criteria	Amount	Percentage
1	Very good	19	70%
2	Good	4	15%
3	Enough	-	-
4	Not enough	4	15%
Amount		27	100%

Table 4.2, Based on the table, the data obtained from the results of the study on teacher activities in the learning process in Cycle I, meeting I, shows that the implementation of learning has not fully achieved the expected objectives. Of the 27 aspects observed, there are 19 aspects that are in the very good category with a percentage of 70%, 4 aspects are in the good category with a percentage of 15%, and 4 aspects are in the less category with a percentage of 15%. The data can be seen in full in the appendix. At the first meeting, the teacher has attempted to implement learning in accordance with the design determined by the Mordiscvein learning model assisted by Animation Video media. Throughout the teaching and learning process, researchers conducted apperception first through direct experiences that they

Mark	Number of Students	Presentation	Information
0-74	12	66%	Not Completed
75-100	6	33%	Completed
Amount	18	100%	

encountered and they saw both in everyday life there are various styles. This apperception is done to determine the initial knowledge known by students about a material then the teacher conveys the learning objectives. Meanwhile, in the core activity, the real assessment of the learning model,

there are still four aspects that have not been implemented, because in these four aspects there is an ice breaker intended to rekindle students' enthusiasm in the learning process, researchers have not succeeded in making the teaching and learning series exciting. Learning activities using the Mordiscvein learning model assisted by animated video media are visible but not yet optimal.

b) Meeting 2

Observations were conducted to monitor teacher activities during the teaching and learning process to determine whether all aspects listed in the observation sheet were implemented to improve student learning outcomes in science learning through the application of the Mordiscvein learning model assisted by animated video media. The observation format was used to monitor teacher activities from pre-action to closing activities, by observers who were class teachers. The results achieved regarding teacher activities in cycle I, the first meeting, are presented in the following table:

Table 4.3 Data from Observation Results of Teacher Activities Cycle I Meeting II

No	Aspect Criteria	Amount	Percentage
1	Very good	22	81.48%
2	Good	3	11.11%
3	Enough	-	-
4	Not enough	2	7.41%
Amount		27	100%

Table 4.3 shows the results of observations of teacher activities in the learning process in Cycle I, meeting II, carried out by the researcher, which still did not fully meet the expected targets. 22 aspects were in the very good category with a percentage of 81%, and 3 aspects were in the good category with a percentage of 7.41%. All of these aspects are related to teacher competence in implementing learning. This data can be seen in full in the appendix. The data table obtained shows that teacher activities in the learning process in Cycle I, meeting II have not fully achieved the established success indicators. Although most aspects are in the very good category, there are still aspects that are in the less than adequate category, so improvements are needed in the next cycle. In the second meeting, an attempt was made to implement learning in accordance with the established design of the Mordiscvein learning model assisted by animated video media. Throughout the teaching and learning process, the researcher conducted apperception first through direct experiences that they encountered and saw both in everyday life. This apperception was carried out to determine the initial knowledge that students had about a material, then the teacher conveyed the learning objectives. Meanwhile, in the core activities, the real assessment of the learning model still has 2 aspects that have not been implemented, because in these 2 aspects there is an ice breaker intended to rekindle the enthusiasm of students in the learning process, researchers have not succeeded in making the teaching and learning series exciting. Learning activities using the Mordiscvein learning model assisted by animated video

media have been seen but have not been optimal.

Observation results show that learning has been implemented in accordance with the Mordiscvein model design assisted by animated video media. In the preliminary activity, the teacher conducted apperception and conveyed the learning objectives to explore students' initial knowledge about force. In the main activity, the teacher applied the stages of the Mordiscvein model, namely problem orientation, student organization, investigation, development and presentation of results, and evaluation. The teacher used animated images and videos as stimuli, divided students into groups, and guided them in working on the Student Worksheet. Students then discussed and presented the results of their group work. However, there were still several obstacles, such as unequal student participation in presentations, less than optimal reinforcement from the teacher, and some students still had difficulty expressing their understanding during reflection. Therefore, active student involvement and the provision of reinforcement need to be increased so that understanding still needs to be improved.

2) Observation of Student Activities in Learning

a) Meeting 1

The next stage of this classroom action research is the process of observing student activities. Observations were conducted throughout the action. The following table presents the data from observations of student activities during the learning process.

Table 4.4 Data from Observation Results of Student Activities in Cycle II, Meeting 1

No	Aspect Criteria	Amount	Percentage
1	Very good	23	85%
2	Good	3	11%
3	Enough	1	3.7%
4	Not enough	-	-
Amount		27	100%

Table 4.4. This table shows the data obtained from the research results regarding student activities in the learning process in Cycle I, the first meeting. Of the 27 aspects observed, there were 23 aspects that were in the very good category with a percentage of 85%, 6 aspects were in the good category with a percentage of 11%, and 1 aspect was in the sufficient category with a percentage of 3.7%. This data can be seen in full in the appendix. The results of the observations indicate that most students have followed the learning process quite well and showed enthusiasm in various activities carried out. Students were seen actively answering questions given by the teacher, participating in group discussions, and involved in learning activities such as observing, discussing, and completing assignments on the Student Worksheet (LKM). At the investigation and presentation stage, most groups were able to work well together in completing the assigned tasks and convey the results of their discussions with sufficient confidence. By using the Mordiscvein model assisted by Animated Video media. In general, it has been implemented according to the planned stages. However, the implementation of learning is

still not fully optimal in involving all students equally. This was evident in the fact that some students were still not actively participating in learning activities. Some students were still reluctant to express their opinions during group discussions, resulting in uneven participation within the group. Furthermore, some students lacked focus when listening to the teacher's explanations or during reflection activities. During the presentation of discussion results, not all students demonstrated the courage to provide responses or ask questions to other groups. Overall, student activity in Cycle I, meeting 1, showed a positive trend. However, improvements are still needed, particularly in increasing student activity, courage in communication, and concentration so that all students can be optimally involved in the learning process in the next cycle.

b) Meeting 2

The next stage of this classroom action research is the process of observing student activities. Observations were conducted throughout the action. The following table presents the results of observations of student activities during the learning process.

Table 4.5 Data from Observation Results of Student Activities in Cycle II Meeting II

No	Aspect Criteria	Amount	Percentage
1	Very good	26	77%
2	Good	1	22%
3	Enough	-	-
4	Not enough	-	-
Amount		27	100%

Table 4.5. The table shows the observation data of student activities in Cycle I, Meeting II in the application of the Mordiscvein learning model assisted by animated video media. Of the 27 aspects observed, there were 21 aspects in the very good category with a percentage of 77%, 6 aspects were in the good category with a percentage of 22%. At this meeting, no aspects were found in the poor category. The data indicate that student activity in the learning process has increased compared to the previous meeting. Complete data can be seen in the appendix. The results of the observation show that most students have been actively involved in the learning process. Students appeared more enthusiastic in participating in learning activities, especially when observing learning media displayed through animated video media. In group discussions, students began to show better cooperation in completing tasks on the Student Worksheet (LKM). In addition, most students were brave enough to express their opinions, answer teacher questions, and present the results of group discussions in front of the class. By using the Mordiscvein model assisted by animated video media at the second meeting, it has been implemented better according to the planned learning stages.

c) Reflection Stage

Based on the results obtained, the science learning process for the introduction to force material using the Mordiscvein learning model assisted by animated video media in Cycle I has not achieved the expected success. In syntax 2, when

students present the results of the discussion, the icebreaker activity that should be carried out to break the ice and increase enthusiasm for learning has not been implemented. In syntax 3, students are supposed to validate hypotheses through animated video media. However, the implementation of this activity is not optimal, so some groups have difficulty validating concepts independently and need more time to understand the material. In syntax 4 (Data Publication), the rule that odd groups appoint even groups and vice versa is not implemented. In fact, this activity aims to train students' responsibility, courage, and skills in presenting discussion results in front of the class and explaining the results of the revised hypothesis that has been formulated. In syntax 6, which should be used for students to arrange keywords into conclusions, the teacher provides more re-explanation of the material and reinforcement of learning. As a result, students' active role in compiling and conveying conclusions based on the keywords obtained has not been optimally implemented. The teacher has used PPT and animated video media to help explain learning concepts. However, students still tend to be passive because not all the syntax of the Mordiscvein model has been implemented optimally. This condition causes student involvement in the learning process to be less than optimal. At the second meeting, the same obstacles were still found during the learning process and also showed that there were still many students who had not been able to meet the Learning Objective Achievement Criteria (KKTP) that had been set, several factors were found that caused the low student learning outcomes. From the analysis results, it was found that the main obstacle was the lack of active student involvement as well as technical obstacles in students and not yet understanding conceptually the animated video that was the question, thus, the researcher continued to the second cycle with improved strategies, namely implementing the Mordiscvein model assisted by animated video media.

3. Implementation of Learning Cycle II

a) Preparation Stage

At this stage, the researcher compiled the Teaching Module by referring to the Learning Outcomes (CP) which in turn resulted in Learning Objectives (TP) which were then arranged into a Learning Objective Flow (ATP). The First Finding In cycle I, namely discussing the sub-material of Force (Gravitational Force) with the learning objective of being able to explain the meaning of gravity. The second meeting discussed the sub-theme of the Influence of Force on Objects. The learning instrument consisted of a teacher observation sheet, a student observation sheet, which was filled out by the observer in this case the class teacher using the Mordiscvein learning model assisted by Animation Video media.

b) Action Implementation Stage Cycle II meeting I

The teaching and learning activities of Cycle II were carried out referring to the Learning Outcomes, namely "explaining the force of gravity in everyday life correctly, pulling a rubber band to understand that force can make elastic objects change shape temporarily.". A total of 18 students followed the learning process and participated in this activity. In Cycle II, classroom action research included two meetings: Thursday, May 21, 2026, and Friday, May 22,

2026. The following explains the implementation of actions and the results observed during the cycle.

1) Implementation of cycle II actions, meeting I

Cycle II begins with the first meeting with the material on the benefits of force in everyday life. The teacher divides students into 4 groups. At the beginning of the lesson, the teacher opens the activity with a greeting, asks how they are, prays together, sings the national song "Indonesia Pusaka", checks student attendance and readiness, and conducts apperception by showing pictures of the benefits of force in everyday life on the LCD. The teacher then conveys the learning objectives. In the main activity, the teacher provides stimulus by showing an animated video about gravitational force, followed by a question and answer session. Students take a roll of paper containing keywords about the benefits of force in everyday life. Each group receives a Student Worksheet (LKM) and discusses various forces based on the keywords obtained. After the discussion, students formulate problem formulations and hypotheses, then present the results of the group discussion. All groups submit hypotheses and the teacher directs students to improve them based on the animated video media. After being improved, students re-present the results of the improvements according to the determined rules. Next, the teacher provides several sentences related to the material on various forces, especially gravitational force, to determine facts or opinions. Students answer by raising their hands and giving reasons for their answers. In the next activity, group representatives present their conclusions based on the key words they learned in the "opening surprise." The teacher provides reinforcement, reviews the key words, and explains material not yet covered in the discussion. In the final activity, the teacher and students reflect by discussing their feelings after the lesson and the material to be covered in the next meeting. The teacher then asks students to pray and concludes the lesson with a greeting.

2) Implementation of cycle II actions, meeting II

Based on the results of the actions of Cycle II meeting II with simple Experiment Material on the Influence of Force on Objects. The students have been arranged by the teacher before starting the learning process. In this case, the researcher divided the students into 4 groups for the learning process. At the beginning of the lesson, the teacher opened the lesson by greeting and asking the students' news then asked the students to pray together according to their respective beliefs. After that the teacher asked the students to sing the national song "Indonesia Pusaka" and the teacher checked the students' readiness by filling out the attendance sheet and asking the students to prepare stationery then the teacher conducted perception by showing a picture of a simple Experiment about force on the LCD conveying the learning objectives they wanted to achieve. The next activity is the core activity. The initial action made was the teacher gave a stimulus to the students by showing a video about a simple Experiment about magnetic force through animated video media. Previously, the teacher told all students to pay attention to the video which would then be followed by a question and answer session. After that, the teacher informed the students that they would take a roll of paper that had been prepared. In the roll of paper, there was one

keyword based on the material Influence of Force on Objects that would be taught. Then, one representative from each group took a roll of paper and distributed the Student Worksheet (LKM).

The teacher instructs each group to discuss the magnetic force on objects based on the keywords they get. After the group discussion, students are directed to formulate problem formulations and hypotheses based on these keywords. After completing the problem formulation and hypothesis, they are asked to present the results of their discussion, to determine which group will present the hypothesis first, the teacher asks students to sing a song and when the song stops, the group selected based on the stopped minute position will present their hypothesis first. All groups present their hypotheses, the teacher directs them to improve the hypothesis by referring to the animated video media containing the material being discussed. After each group has improved their hypothesis, the teacher asks them to re-present the results of the improvements. The teacher also explains the rules in presenting the results of the improvements, namely the even group appoints another even group, and vice versa. For example, group 1 will present data appointed by group 3, and so on. The teacher prepares several sentences related to the material "magnetic force in everyday life". The sentence must be clear and relevant, and consist of facts or opinions. Then, the teacher delivers the sentence and asks the students whether the sentence is a fact or opinion, for example: "can attract objects like nails." Students answer the question by raising their hands, and the teacher then asks why they chose facts or opinions. In the next activity, the teacher directs each group representative to convey the conclusion of the keywords they got in the "opening surprise". The teacher provides reinforcement and reviews the keywords that have been delivered. The teacher also explains material that is not included in the keywords and that has not been discussed in the discussion.

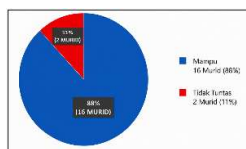
c) Monitoring and Evaluation Stage of Cycle II

At the end of the second meeting of cycle II, an evaluation was conducted to determine the level of achievement of student learning outcomes. This was done by giving them questions using animated video media (questions are in the attachment). The evaluation process was carried out after the teacher closed the lesson and continued with an evaluation to measure the ability of learning outcomes in cycle I. Students worked on the evaluation questions individually. After the evaluation process was completed, the teacher returned and corrected the students' work. Evaluation of student learning outcomes in cycle I was a description of the success of activities during teaching and learning activities in the classroom. In addition to using observations of student learning outcomes activities, the researcher also conducted a written test that included multiple choice and descriptive questions on the material of forces around us using the Mordiscvein learning model assisted by animated video media. The student learning outcomes in cycle I can be seen in the following table:
Table 4.6 Data on Learning Outcomes of Grade IV Students, Cycle II

Mark	Number of Students	Presentation	Information
0-74	2	11%	Not Completed
75-100	16	88%	Completed
Amount	18	100%	

Based on the student learning outcome data, the graph can be depicted as follows:

Learning Outcomes of Grade IV Students in Cycle II



In table 4.6. The diagram data shows that 16 fourth-grade students (88%) met the Learning Objective Achievement Criteria (KKTP), namely ≥ 75 . Meanwhile, 2 students (11%) did not achieve the Learning Objective Achievement Criteria (KKTP), namely ≤ 74 . The data shows that the results of the student learning test in cycle II, which was attended by 18 students, met the established learning success criteria. Looking at the percentage of student learning completion as a whole, namely 74% of the total number of students obtained scores according to the KKTP, the indicator of research success has been achieved. In Cycle II, the percentage of student completion who achieved the KKTP was 16 with a percentage of 88% of 18 students, while the remaining 2 students did not meet the KKTP with a percentage of 11%. Thus, student learning outcomes in Cycle II increased so that the research was not continued to the next cycle.

1) Observation of Teacher Activities in Learning

a) Meeting 1

Observations were conducted to monitor teacher activities

No	Aspect Criteria	Amount	Percentage
1	Very good	26	96.29%
2	Good	1	3.70%
3	Enough	-	-
4	Not enough	-	-
Amount		27	100%

during the teaching and learning process to determine whether all aspects listed in the observation sheet were implemented to improve student learning outcomes in science learning through the application of the Mordiscvein learning model assisted by animated video media. The observation format was used to monitor teacher activities from pre-action to closing activities, by observers who were class teachers. The results achieved regarding teacher activities in cycle I, the first meeting, are presented in the following table:

Table 4.7 Data from Observation Results of Teacher Activities Cycle II Meeting 1

No	Aspect Criteria	Amount	Percentage
1	Very good	23	85%
2	Good	2	7.40%
3	Enough	-	-
4	Not enough	2	7.40
Amount		27	100%

Table 4.7. Observations show that the researcher implemented the learning process according to the established plan, using the Mordiscvein learning model with the aid of animated video media. In the introductory activities, the teacher conducted apperception and conveyed learning objectives relevant to the material on various forces (gravity and magnetic forces). The initial activities proceeded well and were able to build students' learning readiness. The animated video media used in the initial stages also attracted students' attention and helped them understand the general overview of the material to be studied. However, efforts are still needed to increase the involvement of all students evenly throughout the learning process. In the core activities, most of the learning steps were implemented according to the syntax of the Mordiscvein model. The teacher began the learning process by presenting problems through animated video media related to gravity and magnetic forces. Through these presentations, students were directed to observe, identify problems, and express opinions based on their observations. However, not all students actively responded to the teacher's prompting questions, so student participation in the initial stages of learning still needs to be improved. Furthermore, during the group discussion and investigation stages, the teacher provided direction and guidance to students in completing the Student Worksheets (SW). Students appeared enthusiastic about watching the animated videos and connecting them to the material being studied. However, their participation in group discussions was not entirely equitable, as some students tended to be passive and dependent on more active peers. Therefore, teachers need to provide motivation and broader opportunities for all students to actively participate in group activities according to the stages of the Mordiscvein learning model. This data is provided in the appendix.

b) Meeting 2

Observations were conducted to monitor teacher activities during the teaching and learning process to determine whether all aspects listed in the observation sheet were implemented to improve student learning outcomes in science learning through the application of the Mordiscvein learning model assisted by animated video media. The observation format was used to monitor teacher activities from pre-action to closing activities, by observers who were class teachers. The results achieved on teacher activities in cycle II meeting II are presented in the following table:

Table 4.8 Data from Observation Results of Teacher Activities Cycle II Meeting II

Table 4.8. This table shows the results of observations of teacher activities in the learning process in Cycle II, Meeting II, which overall achieved the expected success indicators. Twenty-six aspects fell into the "very good" category, with a percentage of 96%, while one aspect fell into the "good"

category, with a percentage of 3.70%. Meanwhile, neither the "sufficient" nor "poor" categories were found. All of these aspects reflect teacher competence in implementing learning that has been running optimally. Complete data can be seen in the appendix. The data obtained indicate that teacher activities in the learning process in Cycle II, Meeting II, experienced a very significant increase compared to the previous meeting. In general, teachers implemented learning in accordance with the Mordiscvein learning model design, assisted by animated video media, very well. In the introductory activities, teachers were able to carry out apperception and convey learning objectives clearly so that students were more focused and prepared to participate in learning, especially regarding the material on the forces around us.

In the core activities, the learning implementation has systematically followed the entire syntax of the Mordiscvein model, starting from the problem orientation stage, organizing students to learn, guiding the investigation, presenting results, to the analysis and evaluation of the problem-solving process. In the initial stage, the teacher showed an animated video showing various events related to gravitational and magnetic forces and provided trigger questions that were able to encourage most students to think actively and provide responses. Student involvement at this stage was more evenly distributed compared to the previous meeting. Next, in the investigation stage, the teacher divided students into several groups and guided them in working on the Student Worksheet (LKM) through

No	Aspect Criteria	Amount	Percentage
1	Very good	25	92%
2	Good	3	11%
3	Enough	-	-
4	Not enough	-	-
Amount		27	100%

discussion activities, observations, and analysis of the problems presented in the animated video. The teacher also played an active role in facilitating the discussion by providing direct guidance to each group, so that most students were actively involved in the learning process.

During the presentation stage, all groups were given the opportunity to present their discussion results to the class, while other groups actively provided responses, questions, and input. The teacher provided clearer reinforcement and clarification of concepts regarding gravitational and magnetic forces, ensuring a more equitable understanding of the material. Furthermore, the teacher also thoroughly checked student understanding through questions and answers and learning reflections. Overall, the learning process at the second meeting demonstrated excellent results, with significant improvements in almost all observed aspects. This was evident in the dominance of the very good category and the absence of aspects in the sufficient or poor categories. However, efforts are still needed to maintain the quality of learning and increase consistency in actively involving all students. Thus, it is hoped that student learning outcomes on the material on various forces, especially gravitational and magnetic forces, can continue to improve optimally.

- 2) Observation of Student Activities in Learning
 - a) Meeting I

Table 4.9 Data from Observation Results of Student Activities in Cycle II, Meeting

No	Aspect Criteria	Amount	Percentage
1	Very good	21	77%
2	Good	4	14%
3	Enough	-	-
4	Not enough	2	7.40%
Amount		27	100%

The next stage of this

classroom action research is the process of observing student activities. Observations are made during the action. The following is the data from observations of student activities in the learning process presented in tabular form. Table 4.9, data collected from research on teacher activities in the learning process at the beginning of cycle II, meeting I, has met the expected objectives. All aspects are included in the category that is considered very good, namely 27 aspects with a percentage level of 92.59%, the category that is considered good, namely 1 aspect with a percentage level of 3.70%, the sufficient category was not obtained.

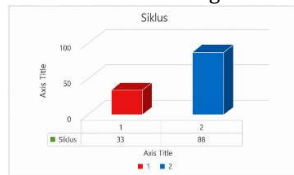
b) Meeting 2

The next stage of this classroom action research is the process of observing student activities. Observations are conducted throughout the action. The following table presents the data from observations of student activities during the learning process.

Table 4.10 Data from Observation Results of Student Activities in Cycle II, Meeting II

Table 4.8 shows the results of observations of student activities in Cycle II Meeting II, indicating that the expected learning objectives have been achieved very well. Of the 27 aspects assessed, 25 aspects were in the very good category with a percentage of 92%, while 3 aspects were in the good category with a percentage of 11%. Meanwhile, no aspects were found to be included in the sufficient or less category. Complete observation data can be seen in the appendix. These results indicate that student activity during the learning process was very good in accordance with the application of the Mordiscvein learning model assisted by animated video media. Students were seen actively watching animated video displays, responding to questions given by the teacher, discussing in groups, and presenting the results of the discussion in front of the class. In addition, most students were able to work well together, express opinions, and participate in question and answer activities during the learning process. The high percentage in the very good category indicates that the use of the Mordiscvein learning model supported by animated video media was able to increase active student involvement in learning the material of Forces Around Us. Thus, the application of these models and media has proven effective in creating a more interesting, interactive, and meaningful learning atmosphere so that it can support optimal improvement in student learning outcomes.

4.11 Student Learning Outcomes Diagram



Based on the diagram of student learning outcomes, there is an increase in the percentage of learning completion from cycle I to cycle II, in cycle I the percentage of students who have not met the learning completion reached 33%. This shows that most students have achieved the applied completion criteria. However, there are some students who meet the minimum completion standards (KKTP). Therefore, improvements and refinements to learning strategies are needed in the next cycle. After corrective actions were taken in cycle II, the increase in the percentage of student learning completion increased significantly to 88%. This increase indicates that the application of the mordiscvein learning model assisted by animated video media in cycle II is more effective in improving student understanding of the material being taught. In addition, active student involvement during the learning process also contributes to improving learning outcomes. Thus, it can be concluded that the actions taken in cycle II succeeded in significantly improving student learning outcomes and have achieved the success indicators set in the study.

c) Reflection Stage

In general, the implementation of actions in Cycle II showed very good results and no significant obstacles were found during the learning process. This is because the actions in Cycle II were the result of improvements to various shortcomings found in Cycle I, both in terms of classroom management, clarity of instructions, and optimization of the implementation of the Mordiscvein learning model syntax. Teachers were able to manage the class more conductively, provide more structured directions in discussion activities, and utilize animated video media more effectively to support student understanding. Thus, the learning process ran more focused and systematically according to the plan that had been prepared. Based on the results of the reflection, all stages of learning referring to the Mordiscvein model syntax were implemented well. During the learning activities, students appeared more active in responding to questions from the starters, participating in group discussions, and engaging in investigative activities related to the material "Forces Around Us". Cooperation among group members also improved, with most students being able to share roles and no longer relying on just one or two people. Furthermore, during the presentation stage, students demonstrated greater courage and confidence in conveying discussion results and were able to respond politely to other groups. However, there were still some students who were not fully active at the start of the activity, but with guidance and motivation from the teacher, these students began to show better involvement.

The learning outcomes of fourth-grade students of SDN 6 Tapa Bone Bolango in Cycle II increased after the implementation of the Mordiscvein learning model assisted by animated video media on the Forces Around Us material.

Of the 18 students who took the evaluation test in Cycle II, 16 students (88%) achieved a KKTP score of ≥ 75 , while 2 students (11%) had not achieved a complete score. The increase in learning outcomes indicates that the implementation of the Mordiscvein learning model supported by animated video media was able to improve students' understanding of the material being studied. Based on the established success criteria, namely at least 85% of students achieving a score of ≥ 75 , the learning process in Cycle II was declared successful. Thus, the study was stopped in Cycle II because the success indicators had been achieved and there was no need to continue to the next cycle.

B. Discussion

Based on the results of the actions carried out by researchers in class IV of SDN 6 Tapa, Bone Bolango District, data obtained showed that student learning outcomes in the Natural Sciences subject on the material of forces around us were still relatively low. Of the 18 students who participated in the evaluation in Cycle I, only 6 people or 33% obtained a score of ≥ 75 according to the established KKTP, while 12 people or 66% had not achieved completeness. These results indicate that students' understanding of the material on various forces has not reached the expected success indicator, namely a classical completeness of at least 90%. Therefore, corrective actions are needed through the implementation of a more innovative learning model and are able to actively involve students. Researchers used the Mordiscvein learning model supported by animated video media to help students understand the material being taught. The Mordiscvein learning model trains students to think critically and teaches students to dare to speak and work together in groups is the key to success. This is similar to the opinion of Saleh et al (2022) The Mordiscvein learning model can stimulate students' interest in group discussions so that they can learn from their own thoughts. This will enable them to develop thinking skills, speaking skills, the courage to stand in front of the class, and the ability to express their opinions, especially in groups. Through group discussion activities, this model also helps students develop a strong sense of responsibility, especially regarding group participation.

In the second cycle, there was an increase in learning outcomes compared to the first cycle. This was evidenced by the increase in the percentage of students' learning achievements reaching the KKTP, from 33% in the first cycle to 88% in the second cycle, where in the second cycle the remaining two students who did not complete the class were indeed said to be children who needed special attention in the learning process. The Mordiscvein learning model assisted by Animation Video media used in the second cycle was more optimal compared to the first cycle. This was because the researcher was more intensive in revising the learning media so that it could be accessed by all students. Especially when students revalidated the results of their hypotheses from the problem formulation they determined at the beginning, it became easier because all materials related to the topic of "forces around us" were already available in it. The next activity, the teacher guided the study groups in drawing conclusions and encouraged students to make presentations. This can increase student activity compared to the first cycle. The teacher informed all groups

that groups that were active in the learning process would be recorded and given additional marks. This policy encouraged all groups to be more active in the learning process. This is in line with Amalia Rizki Pautina's (2021) view that providing rewards can increase students' learning motivation. Rewards provide additional encouragement for students to be more active, enthusiastic, and involved in the learning process. This action can increase students' motivation to be more active in group activities, such as discussions in formulating problems and hypotheses, especially during presentations of group discussion results. They are also more enthusiastic in answering questions when the teacher provides a statement of fact or opinion, with students "Raise Hand" to answer and provide reasons why they consider it a fact or opinion. The data generated in this second cycle has proven to meet the research's success because student learning outcomes are in accordance with the expected percentage. Therefore, the use of the Mordiscvein learning model assisted by animated video media is an alternative solution to improve student learning outcomes in the science subject in grade IV.

4. Conclusion

Based on the results of the research that has been done, it can be concluded that the use of the Mordiscvein learning model assisted by Animation Video media in the subject of Science can improve student learning outcomes in grade IV of SDN 6 Tapa Bone Bolango. This is shown by the student learning outcomes in cycles I and II experienced a very significant increase. In cycle I, there were 6 students whose learning outcomes met the Learning Objective Achievement Criteria (KKTP) with a percentage of 33% in cycle II, students whose learning outcomes met the Learning Objective Achievement Criteria (KKTP) were 16 people with a percentage of 88%. This is because in cycle II improvements and re-implementation of the Mordiscvein learning model assisted by Animation Video media refer to the shortcomings in cycle I so that in cycle II learning becomes more directed in accordance with the learning syntax. Thus, the hypothesis in this study by using the Mordiscvein learning model assisted by Animation Video media can improve student learning outcomes in grade IV of SDN 6 Tapa Bone Bolango.

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