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Implementation of Audio-Visual Assisted Problem-Based Learning (PBL) Model to Improve Critical Thinking Skills

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Abstract: This study aims to improve the Critical Thinking Skills of Grade IV Students of SDN 2 Talise through Classroom Action Research (CAR). CAR is a research method deliberately conducted in classroom settings to enhance learning quality. The research follows Kemmis and McTaggart's model, comprising four stages: Planning, Action, Observation, and Reflection. Conducted at SDN 2 Talise during the 2024/2025 academic year, this study involved 17 grade IV students as research subjects. Data collection employed both non-test and test techniques. Non-test methods included interviews, observations, and documentation, while test data was gathered through essay assessments evaluating students' critical thinking skills in social studies material. The study implemented Problem-Based Learning (PBL) assisted by audio-visual media. Results demonstrated progressive improvement across cycles. In Pre-Action, classical learning completion achieved 25%. Cycle I showed improvement to 30.76%, representing a 5.76% increase. Most significantly, Cycle II demonstrated substantial progress with 89.41% classical learning completion, indicating a remarkable 58.65% improvement from Cycle I. These findings reveal that PBL implementation with audio-visual support effectively enhances students' critical thinking abilities. The dramatic improvement from 25% to 89.41% completion rates across the research cycles demonstrates the model's effectiveness. The progressive enhancement pattern confirms that structured problem-based approaches, when properly implemented with multimedia support, can significantly develop elementary students' critical thinking skills in social studies education. Therefore, the Problem-Based Learning model proves successful in improving Grade IV students' critical thinking skills at SDN 2 Talise.

Keyword: Problem-Based Learning (PBL), Audio Visual Critical Thinking Skills, IPAS.

Abstract: *Penelitian ini bertujuan untuk Meningkatkan Kemampuan Berpikir Kritis Siswa Kelas IV SDN 2 Talise. Jenis penelitian yang dilakukan adalah Penelitian Tindakan Kelas (Classroom Action Research) yang pada hakikatnya merupakan penelitian yang sengaja dimunculkan di kelas, dan bertujuan untuk*

meningkatkan kualitas pembelajaran di kelas. Penelitian ini mengikuti model penelitian yang dikembangkan oleh Kemmis dan Mc Taggart yang terdiri dari empat tahapan, yaitu: (1) Perencanaan, (2) Tindakan, (3) Observasi, dan (4) Refleksi. Penelitian ini dilaksanakan di SDN 2 Talise, tahun ajaran 2024/2025 dengan subjek penelitian siswa kelas IV yang berjumlah 17 siswa. Adapun teknik yang dilakukan dalam pengumpulan data penelitian ini adalah Non Tes dan Tes. Pengumpulan data non tes berupa Wawancara, Observasi, dan Dokumentasi. Sedangkan pengumpulan data Tes melalui tes Issay untuk menilai kemampuan berpikir kritis siswa terhadap materi IPAS. Hasil penelitian menunjukkan bahwa selama proses kegiatan pembelajaran dengan Penerapan Model Pembelajaran Problem Based Learning (PBL) berbantuan audio visual dalam pembelajaran IPAS dikelas IV pada siklus I, memperoleh presentase ketuntasan belajar klasikal sebesar Sebesar 30.76%. yang meningkat dari pelaksanaan PRA Tindakan yang memperoleh presentase ketuntasan belajar klasikal sebesar 25%. Adapun perolehan peningkatan yang didapatkan dari Pra Tindakan ke siklus I adalah 5,76%. Selanjutnya pada tahapan siklus ke II, peningkatan hasil kemampuan berpikir kritis semakin terlihat signifikan, dimana hasil presentase ketuntasan belajar klasikal yang diperoleh sebesar 89.41%, yang menunjukkan adanya peningkatan hasil kemampuan berpikir siswa dari siklus I ke siklus II sebesar 58.65%. Dengan demikian dapat disimpulkan bahwa penerapan model pembelajaran Problem Based Learning (PBL) berbantuan audio visual terhadap siswa kelas IV di SDN 2 Talise dapat meningkatkan kemampuan berpikir kritis siswa.

Kata Kunci : *Problem Based Learning (PBL)*, Audio Visual Kemampuan Berpikir Kritis, IPAS

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Introduction

Social Studies education is a subject that examines a set of events, facts, concepts, and generalizations related to social issues. Angreni (2021) states that social studies education, as a field of study offered at the school level, not only provides knowledge but also values, attitudes, and skills for students' lives in society, the nation, and the state, with various characteristics. Elementary school social studies education is a field of study that examines humans in all aspects of life and their interactions within society. Therefore, social studies lessons are designed to develop knowledge, understanding, and analytical skills regarding social conditions and to enter a dynamic community life. Asriningsih (2021) states that the goal of social studies education is to educate and provide basic skills for self-development according to talents, interests, abilities, and the environment, as well as various provisions for continuing education to a higher level. Hopeman (2022) states that elementary school education is strongly linked to the Problem-Based Learning (PBL) model. PBL is a learning method that emphasizes problem-solving and the application of

knowledge in real-life contexts. At the elementary school level, this approach is very relevant because it can increase student engagement in learning. PBL allows students to be active in finding solutions. Irawati et, al (2024). Problem-Based Learning (PBL) is a learning method where relevant problems are presented at the beginning of the instructional cycle. PBL uses everyday problems as a learning context, which helps develop students' problem-solving skills (Argaw et al., 2017). This model teaches students about critical thinking, problem-solving skills, and acquiring essential knowledge and concepts from the material taught through real-world problems. PBL is based on real problems that exist in students' lives, so it becomes a means for students to solve problems (Dianawati et al., 2017). PBL has several stages in the learning process. The stages include: (1) orienting students to the problem; (2) forming study groups; 3) providing guidance on student investigations; (4) presenting the results of the work; and (5) conducting an evaluation of the problem-solving process (Ngalimun, 2016).

Critical thinking skills are an essential component of mathematical thinking skills that all students should possess, both in school contexts and in everyday life. By thinking critically, individuals, including students, can reflect, adjust, change, or improve their thinking before making decisions or actions. Critical thinking skills play an important role in equipping students with the skills needed to face the various problems they face in their environment, Putri (2023). Facione (2011) in Kurniawan (2023) states that critical thinking is a self-regulatory activity in determining something so that it manifests its characteristics or characteristics such as inference, analysis, interpretation, evaluation, self-regulation, and also exposure to certain evidence, concepts, criteria, or contextual considerations as a basis for determining decisions. Because individuals who think critically must be able to provide reasons and decisions that have been taken, answer questions, be open to differences of opinion, and listen to the reasons for other people's opinions, Wiguna (2023)

Based on initial observations at SDN 2 Talise in May 2025, a similar situation was found. Of the 17 fourth-grade students, several had not yet achieved the Learning Objective Completion Criteria (KKTP) for the Social Studies material. In implementing Social Studies learning, teachers still use less interactive learning models, such as only providing explanations without providing opportunities for students to actively participate. This hinders the development of students' critical thinking skills, mainly due to the lack of discussion and debate in the learning process. Although some teachers try to encourage students to think critically through discussion, not all students feel comfortable or able to participate in debates. When teachers ask questions that require students to think through questions related to existing phenomena or problems, students often answer carelessly. This indicates that a learning environment that supports critical thinking has not been fully realized. Teachers also rarely involve students in analysis and reasoning activities, such as simple contextual problems, so students are not trained to think critically. As a result, students' critical thinking levels are low, they tend to be passive during learning and group discussions, and have difficulty solving Higher Order Thinking Skills (HOTS) level problems. Limited time and resources, such as a dense curriculum, also make it difficult for teachers to integrate critical thinking exercises into their teaching.

Furthermore, students who are less interested in social studies and shy students become less active in the learning process, thus lacking critical thinking skills.

This is because social studies instruction has not been able to develop or enhance students' critical thinking skills. After all, it is teacher-centered and focused solely on reading texts. Yet, social studies learning is closely related to our daily lives. Furthermore, four students (25%) still scored above the Minimum Completion Minimum (KKM), while 13 other students (75%) still fell below the average (KKM of 75). This indicates that students' critical thinking skills are still low and require further training to improve. Addressing the problems encountered in the field requires solutions. One possible solution is to implement audio-visual learning models, such as Problem-Based Learning (PBL). The Problem-Based Learning (PBL) model is a teaching and learning process that presents students with problems, and students are expected to actively solve them, while the teacher acts as a facilitator (Budiarti & Murtafiah, 2023). The Problem-Based Learning (PBL) model is an active learning method because it can transform students' thinking skills through a systematic learning process, allowing students to expand and develop their thinking skills optimally (Hijriah, 2020). The Problem-Based Learning (PBL) model can be made more structured with the help of audiovisual media. Audiovisual media combine sound and visual elements, such as videos, films, or audio slides, so students can see and hear the material directly (Riva, Siti, 2023). The use of audiovisual media helps students focus better, avoid boredom, and facilitates comprehension because the material is presented engagingly and interactively. (Rahmi, Lucyana, 2021).

Audiovisual media are a learning medium that can attract students' attention. Having this media available to students can facilitate independent learning. This allows students to learn the material first, allowing them to better understand the material when the teacher explains it. One of the uses of audiovisual media is in social studies, which is characterized by its abstract nature. The emergence of various audiovisual media can help students learn the material independently. Currently, the availability of audiovisual media to support the social studies learning process is still lacking and is not widely used in schools. (Aryani & Sofiah, 2021).

Based on Piaget's theory, it is stated that the level of cognitive development of elementary school students is at the concrete operational stage, where students can think through real objects and real problems (Susanto, in Haryanti, 2017). et al. (in Massa, 2014,) argue that "critical thinking in elementary school can include teaching activities that invite students to be able to see: assess reasons and truth; be open; respect others during discussions; and be willing to see thoughts from other people's perspectives". Lack of critical thinking skills in students can affect the development of children's intellectual potential. According to Johnson (in Susilaningrum, 2014) said that, If children are allowed to use thinking at a higher level at each grade level, they will eventually get used to distinguishing between truth and lies, appearance and reality, facts and opinions, and knowledge and beliefs. Johnson also said that the purpose of critical thinking is to achieve a deep understanding of revealing the meaning behind an event. Children who are less

skilled in critical thinking tend to be less than optimal in gaining a deep understanding of an event.

Based on the explanation above, the researcher decided to use the PBL learning model to improve students' critical thinking skills in social studies. The PBL learning model, also known as the problem-based learning model, is a learning model that uses real problems encountered in the environment as a basis for acquiring knowledge and concepts through critical thinking and problem-solving skills. Some of the advantages of this learning model include the existence of problems raised based on real problems around students and encouraging students to be able to solve these problems, build their knowledge through data collection to solve these problems, learn to think critically, and enrich learning resources (Rosidah 2018).

Method

The type of research used in this study is Classroom Action Research (CAR). Sanjaya (2016) states that CAR is the process of examining learning problems in the classroom through self-reflection to solve these problems by implementing various planned actions and analyzing the effects of each treatment. The type of research used is classroom action research, as conducted by Arikunto (2015). Planning, Implementation, Observation, and Reflection are the four stages of each cycle carried out in this study. The purpose of this research is to find solutions to problems that arise during the classroom learning process. According to Tampubolon (2014), classroom action research is research conducted by educators/prospective educators in their classrooms in a collaborative/participatory manner to improve educator performance regarding the quality of the learning process and enhance student learning outcomes, both academic and non-academic, through reflective action in a cyclical (recycling) manner. The research model is used to produce a clear picture of the research to be carried out. In this research model, the spiral modification is listed by Kemmis and Mc. Taggart. Each cycle consists of several steps, namely 1) Planning, 2) Implementation of action, 3) Observation, 4) Reflection

This class (PTK) was implemented in grade 4 of SDN 2 Talise in the even semester in mid-May of the 2024/2025 academic year. The subjects of this study were 17 grade IV students, consisting of 11 boys and 6 girls. The types of data obtained in this study are quantitative data obtained from the results of assignments given to students and qualitative data obtained from the results of observations of teacher and student activities as well as interviews with students and teachers. The data sources in this study come from primary and secondary data. Primary data were obtained from the results of student learning tests at the end of each meeting of each cycle in the ongoing teaching and learning activities, and primary data were also obtained through the results of observations of teacher activities along with student activities. The secondary data were obtained from the results of interviews with students.

Observations were conducted using observation sheets to record activities during the learning process, while learning outcome tests in the form of essay questions were conducted at the end of each cycle to measure student achievement. Data analysis was conducted qualitatively and quantitatively. Qualitative data were obtained from

observations and analyzed descriptively to determine student responses and the effectiveness of the learning process. Quantitative data in the form of student learning test results were analyzed by calculating the percentage of learning completion using the following formula:

a. Percentage of individual completion

$$\text{Mark} = \frac{\text{Scores obtained by students}}{\text{Maximum score for the question}} \times 100$$

b. Classical learning completion

$$\text{Complete Learning} = \frac{\text{Many students have completed}}{\text{Many students in total}} \times 100\%$$

The description of classical mastery is measured by assessing the results obtained. If the percentage of students achieving mastery is 75% or more, then the learning is considered classically complete. Conversely, if the number of students completing is still below 75%, then the learning has not achieved classical mastery. The criteria for the success of the action are determined based on classical mastery. An action is considered successful if at least 75% of students achieve the Minimum Mastery Criteria (KKM). This 75% threshold refers to the general standard used in various classroom action studies to determine the effectiveness of learning interventions.

Qualitative data analysis was conducted to analyze the results of observations of teacher and student activities for each cycle. The formula used to observe the achievement of learning stages for teacher and student activities is as follows:

$$\text{Mark} = \frac{\text{Total Score Obtained}}{\text{Maximum Score}} \times 100$$

Table 1: Qualitative values of teacher and student activities

Mark					Ranking
90%	**<**	**NR**	**≤**	**100%**	**: Very good**
85%	**<**	**NR**	**≤**	**90%**	**: Good**
75%	**<**	**NR**	**≤**	**85%**	**: Enough**
0%	**<**	**NR**	**≤**	**75%**	**: Not enough**

Source : Dekdikbud in Mei Reke (2021)

Results And Discussion

Result

This research is a Classroom Action Research (CAR) conducted in the fourth grade of SDN 2 Talise. The goal is to improve students' critical thinking skills by implementing the Audio Visual Assisted Problem Based Learning (PBL) model. A total of 17 students

became the subjects of the research, which was carried out in two learning cycles. Each cycle consists of four stages: planning, implementation, observation, and reflection. Tables/charts/figures do not contain raw data that can or should still be processed.

Implementation Phase (Action) Cycle I

Planning Stage of Cycle I

During the planning stage, researchers prepared all the necessary materials for the research. These included: Creating a teaching module for the Social Sciences subject, with learning materials in Chapter 9 on the History of Hindu, Buddhist, and Islamic Kingdoms in Indonesia, with the topic "History of Indonesian Kingdoms." Next, they created observation sheets for teacher and student activities. They then prepared a post-test for critical thinking to assess student learning outcomes through the implementation of the Problem-Based Learning (PBL) model. Finally, they prepared a camera to document activities occurring during the learning process.

Implementation Phase (Action) Cycle I

In the preliminary activities, students answer the teacher's greetings well and politely, then pray together while listening to the teacher taking attendance, then listen to the objectives and materials presented, Starting the core activities by explaining the material using Audio Visual media, in the core activities, At the stage of student orientation to the problem, students observe the history of the kingdoms around them, Next, conduct questions and answers, and give directions to observe the pictures in the classroom, then organize students to learn, ask students to watch the learning video on the projector screen, then divide students into 4 groups, in one group consisting of four or five students. Students discuss the video, then guide the investigation, namely explaining how to work on LKPD, guiding each group, after completing the LKPD, then developing and presenting the results of the work. They will present the results of their work then other groups will provide suggestions and responses. Finally, analyzing and evaluating problem solving, researchers provide reinforcement and reflection, and give students an evaluation test to determine students' critical thinking skills by applying the audio-visual-assisted PBL model.

Observation Stage Observation Cycle 1

The observation phase was conducted during the first cycle of teaching and learning activities. This observation involved observing students' critical thinking skills, teacher activities, and student activities during two classroom sessions. These observations are as follows:

Table 2: Results of Student Evaluation Test Cycle I

No.	Acquisition Aspect	Results
1.	Total number of 4th grade students	**17**
2.	Number of students who completed the course	**7**
3.	Number of students who did not complete the course	**10**
4.	Highest score	**100**

5.	Lowest score	**40**
6.	Classroom learning completion percentage	**30.76%**

Based on the table above, it can be seen that students' critical thinking skills at the first meeting of cycle I, out of 17 students, showed that 7 students completed the critical thinking test and 10 students did not. The percentage of critical thinking completion achieved by students was 30.76%, categorized as insufficient. This percentage of completion did not reach the minimum completion criteria set at SDN 2 Talise, which is 75% in the Merdeka curriculum.

Observations of teacher activities used a research instrument in the form of an observation sheet, which was directly observed by the fourth-grade homeroom teacher of SDN 2 Talise, Ms. Sitti Shalawati Nusu S.Pd. The results of the teacher activities can be seen in the following

Table 3: Observation Results of Cycle I, First Meeting

No	Acquisition Aspect	Results
1.	Total assessment scores for all aspects obtained	**75**
2.	Maximum score for all aspects	**100**
3.	Percentage score	**75%**
4.	Category	**Enough**

Based on the table above, observations of teacher activities carried out by observers on teachers in the first meeting of cycle I, the researcher obtained a percentage score of 75% which is in the sufficient category. The results of these observations were carried out during the teaching and learning process. In this activity, some activities showed that teacher teaching activities in the class were still low, namely the teacher was lacking, but there were still activities that showed that teacher teaching activities in the class were still low, namely not connecting the material with students' daily lives, the teacher also still did not provide enough trigger questions, did not motivate students in conveying learning objectives, did not provide opportunities for students to ask questions related to material that was not yet understood, did not encourage discussions between students so that they were less focused on working on the questions in the LKPD and there were several things that the teacher did not carry out, namely guiding and encouraging students to be enthusiastic in completing the LKPD, not guiding students to conclude learning activities, did not provide conclusions from the learning outcomes. Therefore, at the first meeting of cycle I, teacher activities still had several weaknesses, so the researcher took the initiative to continue to cycle II to follow up on the shortcomings in cycle I.

Observation Results of Cycle I, Second Meeting

Table 4: Results of observations of teacher activities in cycle I, second meeting

No	Acquisition Aspect	Results
1.	Total assessment scores for all aspects obtained	**94**
2.	Maximum score for all aspects	**112**
3.	Percentage score	**83.92%**
4.	Category	**Enough**

Based on the table above, the results of observations of teacher activities in the second meeting of cycle I, the researcher obtained a total of 90, with a percentage of 83.92% which has increased from the previous meeting, which was 11%. This is because the teacher has tried to be able to control the class, even though it has not been optimal. When the teacher asked students to observe the history of the kingdoms around them, they have begun to give examples, and when the teacher conducted questions and answers, students began to dare to answer, but still partially, and when forming groups, students have begun to be able to be managed even though only partially, then the teacher and students Researchers hope that by looking at the obstacle factors that researchers experienced during the learning process at the second meeting of cycle I, there will be an increase in the score obtained by the teacher in the learning process of cycle II.

Observation Results of Student Activities in Cycle I, First Meeting

Table 5: Results of observations of student activities in cycle I, first meeting

No	Acquisition Aspect	Results
1.	Total assessment scores for all aspects obtained	**76**
2.	Maximum score for all aspects	**100**
3.	Percentage score	**76%**
4.	Category	**Enough**

Based on the table above, conducted by observers on student activities at the first meeting of cycle I, an overall score of 76 was obtained with an average score of student activity results in the learning process of 76% percentage with a sufficient category. However, there are still some activities that are still low such as when taking attendance, students often come in and out of class, do not focus when listening to the teacher in front, and many still discuss each other when the teacher explains the learning objectives, do not want to ask questions, there are still many riots when dividing groups, there are still some who do not work on individual LKPD, there are still students who do not want to answer questions from the teacher. Therefore, in cycle I, student activities still have several weaknesses; the researcher took the initiative to continue to cycle II to follow up on the shortcomings in cycle I.

Observation Results of Student Activities in Cycle I, Second Meeting

Table 6: Results of observations of student activities in cycle I, second meeting

No	Aspek Perolehan	Hasil
1.	Total assessment scores for all aspects obtained	**90**
2.	Maximum score for all aspects	**112**
3.	Percentage score	**80.35%**
4.	Category	**Cukup**

Based on the table above, the results of observations of student activity at the second meeting of cycle I showed a percentage score of 80.35%, indicating an increase in the percentage score from the previous meeting, which was 4%. This indicates an improvement in classroom control, although not yet optimal. Therefore, the researcher

hopes that there will be an increase in student scores in the learning process in cycle II with the implementation of the Problem-Based Learning model assisted by audiovisuals.

Cycle I Reflection Stage

Table 7 Findings and Follow-up of the Learning Process in Cycle I

Reflection	Findings	Follow-up
Teacher Activities	Teachers are still lacking in guiding in observing the images in the classroom.	Teachers need to improve their guidance when observing images in class.
	Teachers are still lacking in forming heterogeneous groups.	Teachers need to form heterogeneous groups to make discussions more effective.
	Teachers are still lacking in providing explanations and organizing discussions regarding learning videos.	Teachers need to clarify explanations and organize discussions related to learning videos.
	Teachers are still lacking in providing detailed explanations regarding the worksheet (LKPD) work	Teachers need to provide detailed explanations for completing the worksheets.
Student Activities	When the teacher takes attendance, many students still come and go from the classroom.	In the next meeting, the teacher will take attendance in a conducive manner, with the door closed during attendance.
	Students are unable to answer questions from the teacher.	In the next meeting, the teacher will provide simple and relevant prompting questions.
	Students often play while listening to the learning objectives.	In the next meeting, the teacher will try to create a comfortable classroom atmosphere so that students don't play around and become too busy.
	Students do not answer questions	In the next meeting, the teacher will vary the class, for example, by telling a relevant incident.
	Students are difficult to manage in groups	In the next meeting, the teacher will establish clear rules for dividing the groups.

	Students do not pay attention to the teacher's explanation	In the next meeting, the teacher will use more icebreakers, short activities before the explanation.
	Students are poor at providing suggestions and responses	In the next meeting, the teacher must create a safer atmosphere so that students feel comfortable and confident in providing suggestions and responses.
Critical thinking skills	Based on the results above, students' critical thinking skills in cycle 1 still lacked the KKM (minimum completion criteria) and classical completion. Therefore, the researcher must continue learning in cycle II to correct the deficiencies in cycle I.	In the next meeting, students are expected to be more active, diligent, focused, and serious in their learning. This will enable them to achieve the minimum passing grade (KKM) and achieve class-wide mastery.

Source: Research Results in Class IV of SD Negeri 9 Mamboro, May 19, 2025

Implementation of Cycle II Actions

The implementation of the actions in cycle II is the same as the implementation of the actions in cycle I. There are only a few shortcomings in the implementation in cycle I, which will be corrected in the implementation of the actions in cycle II and the results will be used to determine the final conclusions of the activity.

Planning Stage of Cycle II

After conducting the analysis and reflection of Cycle I actions, the actions to be carried out in Cycle II are as follows: Creating a Teaching Module, the subject of Science with learning materials, namely the material of Chapter 9, Historical Heritage during the Kingdoms. Creating observation sheets for teacher and student activities. b. Preparing a post-test sheet for student learning outcomes to see the improvement in students' critical thinking skills through the application of the Problem-Based Learning (PBL) model. c. Preparing a camera for the documentation of activities that occur during the learning process.

Implementation Phase (Action) Cycle II

Preliminary Activities

In the preliminary activities, students answer the teacher's greetings well and politely, then pray together while listening to the teacher taking attendance, then listen to the objectives and materials presented, Starting the core activities by explaining the material using Audio Visual media, in the core activities, At the stage of student orientation to the problem, students observe the history of the kingdoms around them, Next, conduct questions and answers, and give directions to observe the pictures in the

classroom, then organize students to learn, ask students to watch the learning video on the projector screen, then divide students into 4 groups, in one group consisting of four or five students. Students discuss the video, then guide the investigation, namely explaining how to work on LKPD, guiding each group, after completing the LKPD, then developing and presenting the results of the work. they will present the results of their work then other groups will provide suggestions and responses. Finally, analyzing and evaluating problem solving, researchers provide reinforcement and reflection, and give students an evaluation test to determine students' critical thinking skills by applying the audio-visual-assisted PBL model.

Observation Stage (Observation) Cycle II

Table 8 Results of Student Evaluation Tests in Cycle II

No.	Acquisition Aspect	Results
1.	Total number of 4th-grade students	17
2.	Number of students who completed the course	17
3.	Number of students who did not complete the course	-
4.	Highest score	100
5.	Lowest score	80
6.	Classroom learning completion percentage	83.52%

The table above shows that 17 students achieved individual learning completion, with a classical learning completion percentage of 83.52%, meeting the minimum completion criteria (KKM) set at SDN 2 Talise. The classical learning completion percentage in Cycle II was successful, and student evaluation test results improved compared to the previous cycle. In the observation phase, the teacher used the same assessment instrument as in Cycle I: an observation sheet, which was directly observed by the fourth-grade homeroom teacher, Ms. Sitti Shalawati Nusu, S.Pd. The following is a summary of the teacher's activities, as can be seen in the following table: Hasil Pengamatan observasi aktivitas guru siklus II pertemuan pertama

Table 9: Results of observations of teacher activities in cycle II, first meeting

No	Acquisition Aspect	Results
1.	Total assessment scores for all aspects obtained	91
2.	Maximum score for all aspects	104
3.	Percentage score	87.05%
4.	Category	Good

Based on the results of Table 9 of observations of teacher activities in Cycle II, the first meeting, the researcher obtained a percentage value of 87.05%. The researcher has made optimal efforts to increase the effectiveness of teaching and learning activities.

Results of observations of teacher activities in cycle II, second meeting

Table 10 Results of observations of teacher activities in cycle II, second meeting

No	Acquisition Aspect	Results
1.	Total assessment scores for all aspects obtained	108
2.	Maximum score for all aspects	112
3.	Percentage score	96.42%
4.	Category	Verry Good

Based on the table above, the observers' observations of teacher activities in cycle II were 108, with an average score of 96.42%, categorized as very good. However, there were still activities that indicated that teachers were still lacking in providing guidance to each group. This can be concluded that the application of the Problem Based Learning (PBL) model with audio-visual assistance improved critical thinking skills and met the desired targets and were in accordance with the steps in the Teaching Module.

Observation of student activities during teaching and learning activities using a research instrument in the form of an observation sheet which was directly observed by the homeroom teacher of grade IV SDN 2 Talise, namely Mrs. Sitti Shalawati Nusu S.Pd. The results of student activities can be seen in the following table:

Results (observations) of student activities in cycle II, first meeting

Table 10. Results of observations of teacher activities in cycle II, first meeting

No	Acquisition Aspect	Results
1.	Total assessment scores for all aspects obtained	94
2.	Maximum score for all aspects	104
3.	Percentage score	90.38%
4.	Category	Good

Looking at the table of percentage score results obtained by the researcher as a teacher, the score was 90.38%, which is included in the good category and there was an increase in the percentage score from the previous cycle I, the first meeting of 76.00%, an increase of 18%. This score increased because in cycle II the researcher had maximized teaching and learning activities in the classroom.

Results (observations) of student activities in cycle II, second meeting

Table 11 Results of observations of teacher activities in cycle II, second meeting

No	Acquisition Aspect	Results
1.	Total assessment scores for all aspects obtained	106
2.	Maximum score for all aspects	112
3.	Percentage score	94.64%
4.	Category	Verry Good

Based on the table of student activity results for the second meeting of Cycle II, the percentage score was 94.64%. This percentage score increased from the second meeting of Cycle I, which was 17.84%. It can be concluded that in the second meeting of Cycle II, the researcher succeeded in managing and maximizing teaching and learning activities very

well. Based on the scores obtained at this meeting, the researcher concluded that the teaching and learning activities in Cycle II were successful.

Reflection Stage of Action Cycle II
Results of the student critical thinking evaluation test

Table 12 Findings and Follow-up of the Learning Process in Cycle II

Reflection	Findings	Follow-up
Teacher Activities	The teacher is still lacking in providing guidance to each group.	Teachers need to improve the guidance they provide to each group with more even and clear directions.
Student Activities	There are still students who do not pay attention to the teacher's explanation.	In the next meeting, teachers need to increase student interaction so that all students pay close attention to the explanation. Students will pay more attention.
	There are still students who are reluctant or afraid to give suggestions or feedback.	In the next meeting, teachers should create a more comfortable classroom atmosphere so that students are more confident in providing suggestions/responses.
Critical thinking skills	Based on Students' Critical Thinking Skills in Cycle II, it can be seen that all students achieved maximum learning completion with a percentage of 100%. Thus, it can be concluded that the results of critical thinking skills through the application of the Problem Based Learning (PBL) model in class IV of SDN 2 Talise have greatly increased compared to Cycle I.	

Source: Research Results in Grade IV of SD Negeri 9 Mamboro, May 2025

Discussion

The application of problem based learning model based on audio visual media can improve the critical thinking skills of fourth grade students of SDN 2 Talisei in the second semester of the 2024/2025 academic year. The improvement of critical thinking skills in each category and the completeness of learning outcomes have exceeded this success indicator due to the application of problem based learning model assisted by audio visual media. There are advantages of the problem based learning model, namely (a) the problem-solving model can stimulate the emergence of abilities and provide satisfaction to

determine new knowledge for students, (b) problem solving can increase student learning activities in the learning process in the classroom, (c) the problem-solving model can help students connect their knowledge and experience in understanding real-life problems, (d) the problem-solving learning model is considered more fun and preferred by students, and (e) the problem-solving model can provide opportunities for students to apply their knowledge in the real world. The problem based learning model is implemented systematically so that it can train students to think at a high level to solve a problem, so that they become challenged and motivated in and seek information related to the problem (Rosidah 2018).

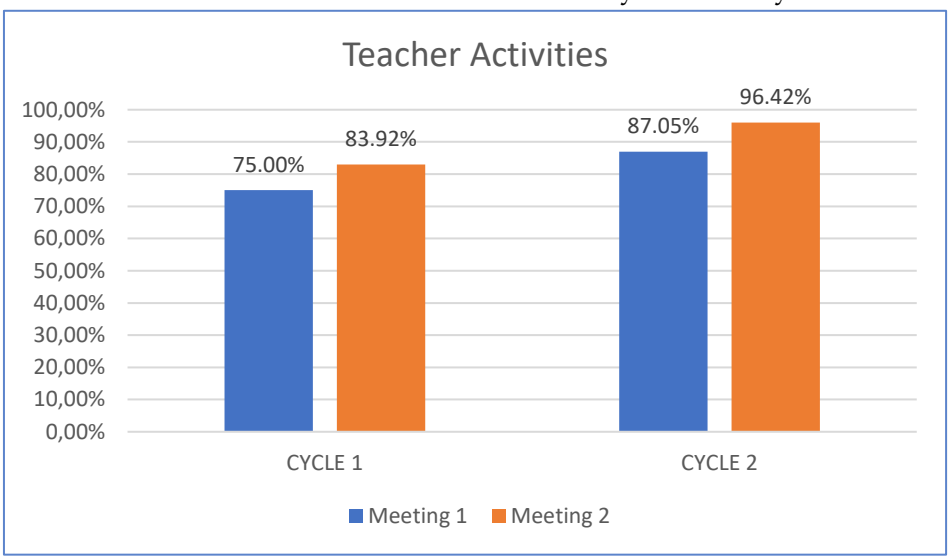
The application of the problem-based learning model can train students to think at a higher level, namely critical thinking skills. Students' critical thinking skills increase with the help of audio-visual aids, which are more effective in helping students to better understand learning by seeing direct examples through videos because this audio-visual media is more fun, interesting and challenging for students (Melindawati, Apfani, & Suryani, 2021). Audio-visual media as a tool for students to analyze problems, stimulate students to problems according to learning objectives, presenting material can increase students' attention, enthusiasm, motivation, and memory in the learning process, bringing up material explanations that can be seen or heard by students so that it will improve students' understanding of concepts and high-level thinking skills (Herlina, Syahfitri, & Ilista, 2020; Husnidar & Hayati, 2021). The purpose of this study is to improve the critical thinking skills of fourth-grade students of SDN 2 Talise in the Science subject by applying the Problem Based Learning (PBL) learning model assisted by audio-visuals. Before conducting Classroom Action Research, Classroom Action Research is a research activity to obtain truth and benefits through collaborative action. This problem-based learning model uses real-world problems as a context, utilizing audio-visual media, namely environmental-based learning videos, to enhance critical thinking skills and improve student learning outcomes.

The purpose of this research is to improve the conditions and quality of classroom learning. The discussion of research results is based on observations of teacher and student activities in each learning cycle through the application of the Problem-Based Learning (PBL) model to fourth-grade students at SDN 2 Talise. In this section, the author discusses the field results with relevant theories or previous research. This section explains this in detail.

Teacher Activity Observation Results.

To determine and understand how the Problem-Based Learning (PBL) model is applied to teachers' activities in managing instruction, two cycles were conducted. Cycle I reflected the initial conditions of the model's implementation, while Cycle II illustrated its development and effectiveness after improvements or adjustments were made. The results of these observations were then presented in a diagram showing a comparison of teacher activity levels across the two cycles.

Picture of Teacher Activities in Cycle I and Cycle II



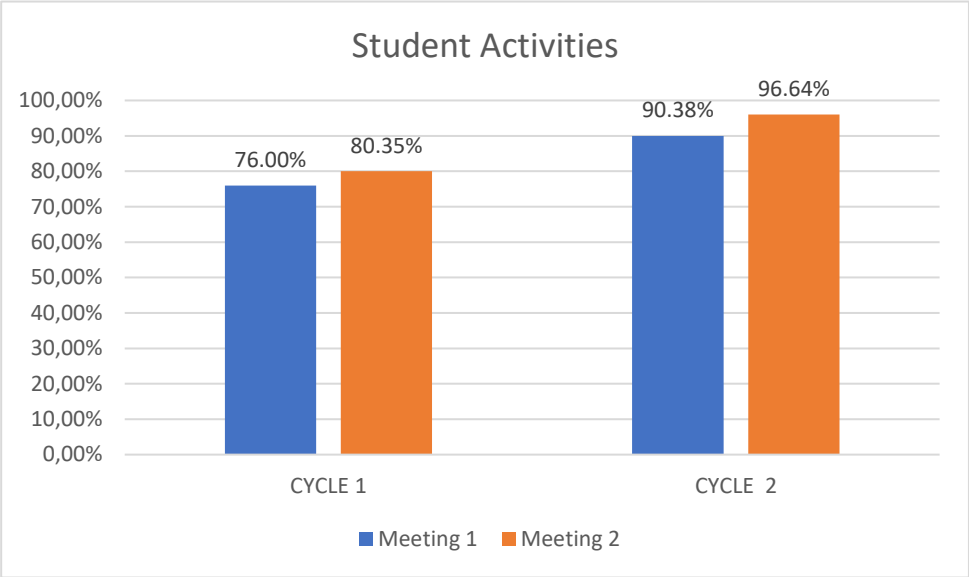
Observation of teacher activities in the learning activities of class IV SDN 2 Talise was carried out in two cycles, Cycle I and Cycle II. Cycle I was held 2x meetings, in the first meeting of Cycle I, the percentage score was obtained at 75%, which was categorized as sufficient. This value still needs to be improved so that researchers have corrected the shortcomings and obstacles that existed in the second meeting of cycle I, with a percentage value of 83.92%, an increase of 11.89% from the previous meeting to this second meeting. Researchers are still lacking in managing and controlling the class well, so that teaching and learning activities in the class are not optimal and conducive. In cycle II, two meetings were also held, the first meeting the teacher's activity obtained a value of 87.05% and in the second meeting it increased to 96.42%. In cycle II, the value obtained was categorized as very good. Researchers have tried to correct the shortcomings experienced in cycle I so that optimization and teaching and learning activities can be carried out well and conductively. This is in line with what was said by Anjasmara (2023) that teachers have a very important role in the success of the learning process. A teacher's success in the learning process can be seen from the achievement of learning objectives. One way to achieve learning objectives is for students to understand and comprehend the material presented by the teacher.

Student Activity Observation Results

To determine the improvement in students' critical thinking results, the teacher conducted a post-test, which each student was required to complete if they had achieved the specified KKM score of 75 or more. The application of the problem-based learning model combined with audio-visual media can arouse interest and motivate students, so that they can develop high-level thinking, namely critical thinking, and feel challenged to solve problems given based on the surrounding and real environment. The use of this audio-visual media will be of interest to students because it is not boring, more active, so that students can analyze and conclude problems well Oktviani, 2019). The following diagram presents data on changes that occur, providing a clear picture of the

improvement in students' critical thinking results in the learning process after implementing the Problem-based Learning (PBL) learning model assisted by audio-visual.

Image of Student Activities in Cycle I and Cycle II



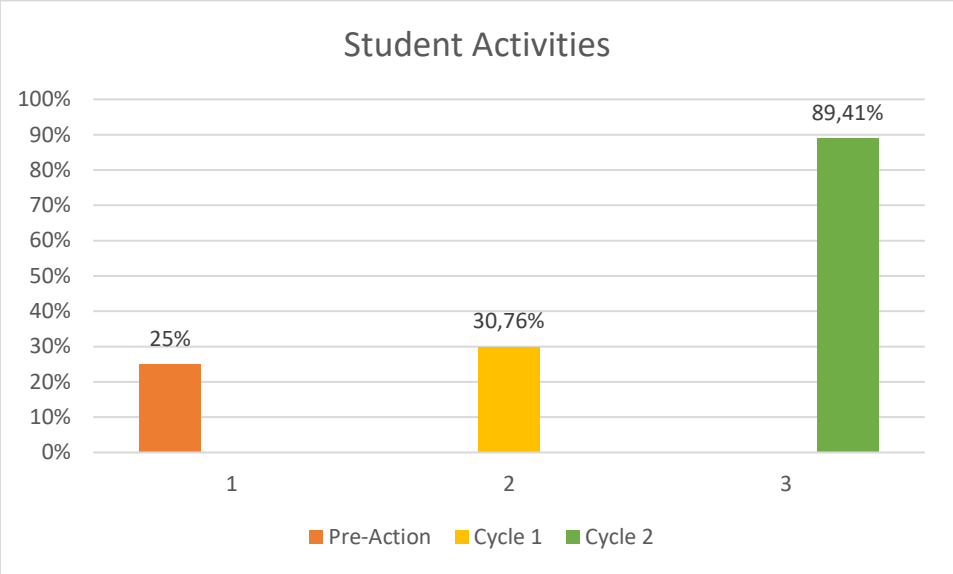
Based on the picture above shows the results of student learning activities with the application of the Problem-Based Learning (PBL) learning model assisted by audio visuals. During the teaching and learning activities, observations or observations of students in class IV SDN 2 Talise in the first cycle of the first meeting obtained a percentage value of 76%, which is categorized as sufficient, the acquisition was obtained from direct observation from the teacher to the students, Some students listened and explained the material from the teacher and worked on group assignments after listening to the learning material on the projector screen. Some students did not follow the teacher's directions in forming groups and were less involved in concluding the learning outcomes. Next, at the second meeting of cycle I, the efforts made by researchers have tried their best to manage the class well, and there has been an increase. The increase can also be seen in the first meeting of cycle II, which was 90.38% and the second meeting obtained a percentage value of 96.64%, Since the value obtained was in the very good category, the researcher decided not to continue the research to the next stage. This is supported by Djati's (2023) opinion, which states that problem-based learning is learning that begins with the presence of a problem, and then students use their knowledge to solve the problem. Providing a problem to a group of students in each learning activity can provide a variety of learning experiences for students, such as cooperation and interaction within the group, so that they are encouraged to play an active role in thinking.

Students' Critical Thinking Skills

To find out and understand how the application of the Problem-Based Learning (PBL) learning model affects the results of students' critical thinking skills in learning, it is carried out in two cycles. Cycle I reflects the initial conditions of the application of this Learning model, while Cycle II describes its development and effectiveness after improvements or adjustments are made. The results of student learning completion are determined by the KKM value that has been set by SDN 2 Talise in science learning. The

KKM value for science is 75 with 75% completion. To find out the increase in students' critical thinking skills, the teacher conducts a post-test, each student will be said to have completed if they have reached the set KKM value of 75 or more. The following diagram presents data on the changes that occur, providing a clear picture of the increase in students' critical thinking skills in the learning process after applying the Problem Based Learning (PBL) learning model.

Image of Student Activities in Cycle I and Cycle II



Based on the figure above, the results of the critical thinking ability test in Cycle I showed that 10 students completed the learning process (30%) and 7 students did not complete the learning process (70%). Meanwhile, the test results in Cycle II showed that the average student completed the learning process because they obtained a percentage of 89%. Therefore, it can be concluded that the implementation of the Problem-Based Learning (PBL) model in science learning can improve students' critical thinking skills

Conclusion

Based on the results of research conducted in class IV SDN 2 Talise, with the research subjects of class IV students with a total of 17 students, the application of the Problem-Based Learning (PBL) model assisted by audio visuals has proven effective in increasing teacher activity, student activity, and students' critical thinking skills. Teacher activity in managing learning increased from 75% in the first cycle of the first meeting to 87.05% in the second cycle of the first meeting. Furthermore, teacher activity increased from 83.92% in the second cycle of the first meeting to 96.42% in the second cycle of the second meeting. While student activity also increased from the first cycle of the first meeting, namely 76% to 90.38% in the second cycle of the first meeting, then 80.35% in the second cycle of the first meeting increased to 96.64% in the second cycle of the second meeting. both are categorized as very good. In addition, students' critical thinking skills showed a significant increase, with an acquisition of 41% in the first cycle and increased to 100% in the second cycle. Thus, the use of the Problem-Based Learning (PBL) model with audiovisual aids positively contributes to the quality of learning and students' critical thinking skills.

Based on the research findings summarized above, the researcher offers the following recommendations. Learning using the Problem-Based Learning (PBL) model can improve

students' critical thinking skills. Therefore, this learning model can be used by teachers as an alternative in the learning process to make it more effective, in line with their goals. Teachers are expected to implement a variety of learning models in each lesson to help students adapt more easily and avoid boredom.

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