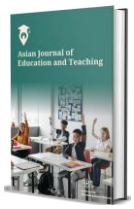
Asian Journal of Education and Teaching

Vol. 1 No. 1 JANUARY 2025



Improving Students' Critical Thinking Skills in Mathematics Learning Using Contextual Learning Approach at MI Negeri 1 Labuhanbatu

Hartati[1], MI Negeri 1 Labuhanbatu, Indonesia
Hartanti[2], MI Tahfidzul Qur'an, Indonesia

ABSTRACT

This research is motivated by the low mathematics learning outcomes and critical thinking skills of fourth grade students of Madrasah Ibtidaiyyah Negeri 1 Labuhanbatu in the 2024/2025 academic year. This study aims to; (1) describe the application of a contextual approach to improve mathematics learning outcomes and students' critical thinking skills; and (2) improve and determine the improvement of students' critical thinking skills by using a contextual approach to multiplication and division materials. This type of research is classroom action research. The subjects in this study were 30 fourth grade students of MIN 1 Labuhanbatu. While the objects in this study are improving learning outcomes in mathematics subjects and students' critical thinking skills. The instruments used in this study were interviews, observations, questionnaires and essay evaluation questions. The data analysis techniques used in this study were quantitative and qualitative data analysis. The steps of the contextual learning approach are as follows; 1) relating; 2) applying; 3) experiencing; 4) cooperating, and; 5) transferring. The improvement of learning outcomes is shown in the initial condition of the average learning outcomes, which is 64.51 with a percentage of completion of 44.44%, increasing in cycle I the average learning outcomes to 76.53 with a percentage of completion of 73.33%, in cycle II the average learning outcomes to 87.2 with a percentage of completion of 86.66%. Students' critical thinking skills show that the initial condition of students' critical thinking skills obtained a value of 58.17 in the "not critical" criteria, after the action was taken the value of critical thinking skills increased to 79.36 in the "quite critical" criteria, the percentage of students who were at least quite critical in the initial condition was 33.33% in the final condition increased to 83.33%.

Corresponding Author:

Hartati
MI Negeri 1 Labuhanbatu, Indonesia
hartatisurianto123@gmail.com

OPEN ACCESS

ARTICLE HISTORY
Received: 17 Nov 2024
Revised: 27 Des 2024
Accepted: 5 Jan 2025
Published: 31 Jan 2025

KEYWORDS
Critical thinking skills, contextual learning approach, mathematics learning.

Introduction

Education is one of the important aspects of human life to develop themselves, so that they can become quality and potential human beings and be able to compete in the era of globalization. Through education, humans can develop their thinking skills. Education plays a major role in shaping the character, development of knowledge and mentality of a child to produce a young generation that is intelligent and dignified. This is in accordance with the national education system stated in Law of the Republic of Indonesia No. 20 of 2003 (in the national education system, article 1) explaining that education is a conscious and planned effort to create a learning atmosphere for students to be more active in developing their potential. Based on this explanation, it is very clear that the main goal of education is to form better individuals. Elementary school is the first level of education that aims to develop basic skills, such as reading, writing, arithmetic, and other basic skills. Elementary school students experience development in the level of thinking that requires stimulus to understand the knowledge they receive in order to think critically in receiving knowledge and solving a problem, because by thinking critically students can make a decision or conclusion that makes sense about what they believe or do. Critical thinking is an activity of thinking to achieve a goal. Critical thinking develops students' skills in solving problems, making decisions, or drawing conclusions from a problem. According to Ennis (in Susanto, 2013: 121), critical thinking is an activity by thinking with the aim of making an acceptable decision about what is believed or done.

Mathematics is one of the subjects at all levels of education, from elementary school to college. Mathematics is a science that discusses numbers and figures (Soedjadi, 2000: 11). Mathematics learning is very influential in everyday life both in general and specifically. The purpose of learning mathematics in elementary school is to train students' thinking and reasoning in drawing conclusions and developing imaginative, creative and critical powers by making predictions or trying, so that they can develop problem-solving skills. According to Muhlisrarini (2014: 148) the purpose of learning mathematics is to increase success in achieving goals and improve student learning outcomes in learning mathematics. Ideal mathematics learning is learning that is centered on students and in learning mathematics children are faced with the realities of students' real lives that contain mathematical problems.

In reality now, mastery of mathematics, both by elementary school students (SD) to high school students (SMA), has always been a big problem. Mathematics is still considered a difficult and boring subject for students. The problem in learning mathematics is the low learning outcomes of students. The low learning outcomes of students in mathematics are evidence that during the learning process students still find it difficult to receive learning. One of the mathematics subjects in elementary schools that is considered difficult for students to understand is the material on multiplication and division. Multiplication and division material is material that is paired with each

other. Multiplication and division material is also one of the materials that is difficult for students to understand and is material that takes a long time to instill.

Based on the results of interviews conducted with teachers at MIN 1 Labuahanbatu, researchers obtained information that mathematics is one of the subjects that takes a long time to instill, where it is explained that in the learning process students still find it difficult to accept the material given by the teacher. One of the mathematics subjects whose learning outcomes are still low is multiplication and division. It is known that the minimum completeness criteria (KKTP) for mathematics subjects in class MIN 1 Labuhanbatu is 75. Students are said to have achieved KKTP if their score reaches 75 or more. The results of the mid-term exam in mathematics for class IV, even semester in 2024/2025 showed that out of 30 there were 13 students (77.44%) who achieved KKTP/KKM, while 22 (55.55%) had not achieved KKTP. With the highest score range of 100 and the lowest score of 60 and the average class score Based on the results of observations on December 3, especially in mathematics lessons, it shows that students' mastery of mathematics subject matter is still low.

The problem in learning mathematics is because students do not have the motivation to learn as a result of learning that emphasizes direct provision of material. This problem makes students passive in the learning process and causes many students to have scores below the Kktp. This results in low critical thinking skills of students. As a result of low critical thinking skills of students, it affects low student learning outcomes. Based on the results of interviews and observations with grade IV teachers, it can be concluded that student learning outcomes in mathematics subjects in grade MIN 1 Labuhanbatu Pandan are relatively low.

One of the causes of low arithmetic ability in multiplication and division material is because the learning carried out by the teacher is still one-way where the teacher is the source, provider, and giver of information (conventional), while students only record what the teacher says. In other words, teachers still use a teacher-centered approach, meaning that the teacher is the source of all knowledge that will be received and known by students. In addition, teachers in explaining the material have not linked the material to the real-world situations of students. In the process of learning mathematics carried out by teachers, it is seen that students are not faced with the reality of everyday life that contains mathematical problems, and are also not trained to think critically in dealing with mathematical problems related to students' daily lives. While critical thinking skills have an important role in learning, especially in mathematics subjects. If students do not have critical thinking skills, it will be difficult for students to accept new knowledge and difficult to solve a problem in learning mathematics. Where in learning mathematics, critical thinking skills are needed to solve problems related to mathematics.

In overcoming these problems, teachers must be critical and creative in choosing a learning approach that is suitable for students. By choosing the right learning approach

for students, learning outcomes and learning objectives can be achieved optimally. One of the concepts or principles of mathematics requires experience through an approach that leads children to think concretely to abstractly, namely through a contextual learning approach or contextual teaching and learning. CTL is a learning system that aims to motivate students to understand the meaning of the subject matter by linking the material and the real world of students or in everyday life. According to Nurhadi (in Hosnan (2014: 267), CTL is a learning concept that helps teachers in linking the material being studied with the real world of students and connecting knowledge and its application in everyday life.

Methods

This research is a type of Classroom Action Research (CAR). Suyadi (2012: 3) stated that classroom action research (CAR) is an observation in the form of action on a learning activity that is deliberately raised and occurs in the classroom simultaneously. Classroom action research is a systematic study of efforts to improve the implementation of educational practices carried out by classroom teachers by taking actions in learning (Wiriaatmadja, 2007: 12). This opinion is in accordance with the opinion of Arikunto (in Taniredja, 2010: 16) who defines classroom action research as an activity of observing learning activities in the form of actions that arise and occur in the classroom. Suyanto (in Muslicah, 2009: 9) said that classroom action research is a form of research that is reflective by taking action that aims to improve or enhance learning practices in the classroom. From the opinions of several experts above, it can be concluded that classroom action research is research conducted by teachers in the classroom with the aim of improving learning practices and processes. that classroom action research is research conducted by teachers in the classroom with the aim of improving the practice and process of Action planning is the initial stage in implementing classroom action research. Action planning consists of identifying problems, analyzing the causes of problems, and developing forms of action as problem solving. At this stage, the researcher focuses on the problems being studied. Then the researcher formulates the problem clearly. The next stage is to determine the method used to overcome the problem.

At the implementation stage, it is the implementation of the previously designed action planning stage. In the implementation stage, the researcher does not limit the cycles carried out, but the researcher conducts research in 2 cycles where each cycle consists of 2 meetings. This research is guided by improving learning outcomes and critical thinking skills. At the observation stage, it is carried out simultaneously with the implementation stage. In the observation stage, the researcher makes observations and records everything that is needed in accordance with the observation guidelines that have been prepared. This is done to find out and obtain a complete objective picture of

the development of the learning process, and the influence of the actions chosen on the actual class conditions.

Reflection is an evaluation activity to see the plan from start to finish, obstacles, and things that need to be changed or not. This reflection aims to find out whether the actions that have been taken have shown success or not. In this reflection stage, the researcher begins by determining whether the actions taken to solve a problem have achieved the goal or not. After that, the researcher determines or makes a decision to carry out the next cycle or stop because the problem has been solved. In addition, the researcher also finds out to what extent the actions taken are able to fix and improve the problem being studied. Before conducting the research, the researcher prepared various necessary things, including (1) asking permission from the principal of class IV of Madarasah Ibtidaiyyah Negeri 1 Labuhanbatu to (1) conduct research activities in class IV of Madarasah Ibtidaiyyah Negeri 1 Labuhanbatu (2) conducting observations in class IV of Madarasah Ibtidaiyyah Negeri 1 Labuhanbatu during the mathematics learning process to obtain an overview of students' learning outcomes and critical thinking skills, (3) the researcher conducted interviews with class IV teachers to find out students' learning outcomes and critical thinking skills, especially in mathematics, (4) the researcher identified problems that emerged during the learning process, namely regarding students' learning outcomes and critical thinking skills, (5) the researcher prepared a research plan in each cycle, (6) the researcher made an initial overview of improving learning outcomes and critical thinking skills of class IV students in mathematics, (7) the researcher reviewed competency standards, basic competencies, indicators, learning objectives, and teaching materials that would be used, (8) the researcher prepared learning instruments (syllabus, CP, LKS, and research instruments), (10) the researcher prepared facilities and supporting facilities needed by the class in learning activities, and (11) researchers carry out research.

This research is a classroom action research that raises problems in the learning process in the classroom. This research was conducted in 2 cycles. Each cycle was conducted in 2 meetings with a time allocation of 4 x 35 minutes. The time allocation was adjusted to the school's lesson hour policy. In the plan for each cycle, the researcher implemented it according to the Kemmis and Mc Tagart model. The Kemmis and Mc Tagart model consists of action planning (planning), action implementation (acting), observation (observing), and reflection (reflecting) repeatedly in the next cycle. The first step taken by the researcher after obtaining a picture of the class situation was to carry out cycle I classroom action. Action planning was carried out to find out the problems that occurred in the classroom through observation and interviews with the class teacher. In cycle I, the researcher carried out two meetings, each meeting with a time allocation of 2 x 35 minutes. The material taught in cycle I was multiplication and division arithmetic operations. Before implementing cycle I, the researcher prepared learning devices, compiled a syllabus, compiled a learning implementation plan (CP) for

cycle I for the first and second meetings, teaching materials, prepared student worksheets (LKS), prepared learning media, and observation sheets. The evaluation questions in cycle I consisted of 5 essay questions. In addition to compiling learning devices, the researcher also compiled a research instrument for a critical thinking mathematics questionnaire. The researcher also prepared an assessment for validation of learning instruments and questionnaires. Then, the researcher validated the learning devices with experts, namely lecturers and teachers.

The teacher provided an initial explanation of the multiplication and division material through question and answer activities (Questioning). Then the teacher gave examples of multiplication and division problems along with how to solve them using concrete media, namely marbles (Modeling). Students had the opportunity to experiment using concrete media, namely marbles in solving multiplication or division problems (Inquiry).

Cooperating Students formed 6 groups according to the teacher's instructions, namely counting from 1 to 6 (Learning Community). Next, the teacher demonstrates multiplication and division up to two-digit numbers using Dienes block media to students, the teacher gives an example of how to use Dienes block media in multiplication and division (Modeling). Each group discusses to answer the questions in the LKS using Dienes blocks.

Representatives from each group present their work or answers (Modeling). Next, the teacher re-presents the material on multiplication with two-digit results and division of two numbers by one number using the short stacking method (Inquiry). Students work on the questions in the LKS by working in groups. Students get the opportunity to ask about material that has not been understood in today's learning by means of questions and answers, then students with teacher guidance make conclusions about the learning that has been done (Reflection.). Students work on the final learning evaluation questions which are done individually (Authentic Assessment). The teacher conducts apperception before learning by asking questions about multiplication and division using number cards (Questioning).

The teacher demonstrates multiplication and division up to three-digit numbers using Dienes block media to students. Then the teacher gives an example of a multiplication problem with a three-digit result and a division of three-digit numbers using Dienes block media. Continued by explaining the material by giving an example of how to solve multiplication and division in short rows. The teacher re-presents the next material by giving an example of a multiplication and division story problem. The teacher explains how to solve an example of a multiplication and division story problem in a short row. Cooperating Students form 6 groups according to the teacher's instructions, namely counting from 1 to 6. Each group works on the story problems in the LKS.

Applying. Representatives from each group present their work or answers (Modeling). Furthermore, the teacher gives students time to provide responses to the group that comes to the front of the class (Questioning). Students get the opportunity to ask questions about material that has not been understood in today's learning. Students are assisted by the teacher to make conclusions about the learning that has been done. Students work on evaluation questions that are done individually. At each meeting in cycle I, the researcher makes observations to determine the results of students' mathematics learning on the material of multiplication and division arithmetic operations. The researcher conducts an evaluation at the end of each learning meeting. This is done by the researcher to determine the improvement in student learning outcomes. The researcher also makes observations during the learning process using an observation sheet to see students' critical thinking skills. The researcher uses a cellphone camera to document the actions taken by students during the learning process. Reflection is an evaluation activity to see the plan from start to finish, obstacles, and things that need to be changed or not. Reflection aims to determine whether the actions that have been taken show success or not. In this reflection stage, the researcher begins by determining whether the actions taken as a problem solver have achieved the goal or not. After that, the researcher decides to carry out the next cycle or stop because the problem has been solved. If the results in cycle I show that the target in cycle I has not been achieved, then it is necessary to continue to cycle II. The action planning stage carried out in cycle II is not much different from cycle I. In cycle II, the researcher held two meetings where each meeting had a time allocation of 2 x 35 minutes.

The material taught in cycle II, namely multiplication and division arithmetic operations. Before conducting cycle II, the researcher prepared learning devices, compiled a syllabus, compiled a learning implementation plan for Learning Achievements (CP) for the first and second meetings of cycle II, teaching materials, prepared student worksheets (LKS), prepared learning media, and observation sheets. The evaluation questions in cycle II amounted to 5 essay questions. Next, the researcher also prepared an assessment for the validation of learning instruments and questionnaires. Then, the researcher validated the learning devices with experts, namely lecturers, principals, and class teachers. The interview guidelines were prepared by the researcher before conducting interviews with class III teachers of SD Negeri Karangmloko 1.

The interview guidelines were prepared to help and facilitate researchers in obtaining initial data. The critical thinking skills interview guidelines made by the researcher used 6 critical thinking indicators as the focus in the interview guidelines. The six indicators of critical thinking skills were taken by 3 experts. The selection of the 6 indicators was adjusted to the characteristics of the contextual learning approach. Face Validity is the validity that shows whether the measuring instrument or research instrument in terms of the appearance of the footprint measures what is to be

measured, this validity refers to the form and appearance of the instrument. Face validity in this study is used for learning devices. The learning devices in this study consist of a syllabus, Learning Outcomes (CP), student worksheets (LKS), teaching materials, and critical thinking skills questionnaires.

The learning devices that have been validated by experts are then summarized to find the average score and eligibility criteria based on the type 1 assessment reference benchmark (PAP). The following is a table of validation eligibility criteria adopted from Masidjo (1995). The face validity test in this study includes learning devices in the form of a syllabus, lesson implementation plan (RPP), student worksheets (LKS), and teaching materials that are tested through expert judgment on lecturers and class teachers. Validator 1 and 2 are lecturers of Sanata Dharma University who are experts in Mathematics and validator 3 is a class teacher of SD Negeri Karangmloko 1. The validity test of the learning device uses a Likert Scale of 1, 2, 4 and 5. A score of 1 means very poor, a score of 2 means poor, a score of 4 means good, and a score of 5 means very good. The assessments that have been given by lecturers and teachers are then added up and the average is calculated.

From table 3.14 on the results of the validation of teaching materials, it can be obtained that the average score obtained from validator 1 is 4.66 on the "very feasible" criteria. The average score of validator 2 is 3.66 on the "quite feasible" criteria with the average score of validator 3 being 4.83 on the "very feasible" criteria. Then the average score of the three validators is 4.38, namely on the "feasible" criteria. So it can be concluded that the teaching materials are included in the "feasible" category for use in research according to the PAP 1 criteria (Masidjo, 1995: 153) with a score range of 1 to 5, the validation feasibility table can be seen in table 3.10. The validity test of the contents of the critical thinking ability questionnaire was tested through expert judgment on 2 lecturers. Validator 1 is a lecturer at Sanata Dharma University who is an expert in psychology and validator 2 is also a lecturer at Sanata Dharma University in the field of psychology. This validity test uses a Likert Scale of 1, 2, 3, 4 and 5. A score of 1 means very poor, a score of 2 means poor, a score of 3 means sufficient, a score of 4 means good, and a score of 5 means very good.

The assessments given by lecturers and teachers are summed up and averaged. From table 3.15, data is obtained that the average score of validator 1 is 3.8 with the criteria of "quite feasible". The average score of validator 2 is 3.8 with the criteria of "quite feasible". The results of the two validators obtained an average score of 3.8 with the criteria of "quite feasible". Based on the validation results of the two validators, it can be concluded that the thinking ability questionnaire sheet is included in the category of "quite feasible" to be used in research according to the PAP 1 criteria (Masidjo, 1995: 153) with a score range of 1 to 5, the validation feasibility table can be seen in table 3.10. The content validity in this study uses 5 essay questions. The essay questions are tested through expert judgment to lecturers and class teachers. Validators 1 and 2 are

lecturers at Sanata Dharma University who are experts in Mathematics and validator 3 is a class teacher at Karangmloko 1 Elementary School.

Result

Classroom action research entitled "Improving Learning Outcomes and Critical Thinking Skills of Grade III Students of SD Negeri Karangmloko 1 on the Material of Arithmetic Operations of Multiplication and Division Through Contextual Learning Approach" was conducted from October 12 to October 30, 2015, the following research results were obtained. The initial conditions before the research, the researcher first conducted initial observations on the learning carried out by teachers, especially in mathematics subjects. This observation aims to see the learning process in the classroom and students' critical thinking skills and to clarify and determine the indicators to be achieved in this research. Furthermore, the researcher also conducted interviews with grade III teachers to seek information about the learning process in the classroom and students' critical thinking skills. The characteristics of grade III students of SD Negeri Karangmloko 1 based on the results of observations during mathematics learning are as follows: (1) Many students do not pay attention to the teacher during the lesson, (2) There are some students who are sleepy when the teacher explains the material, (3) Many students have not been able to respond to questions given by the teacher, (4) Not many students ask the teacher when given the opportunity to ask about material that is not yet understood, (5) There are some students who are lazy to do assignments given by the teacher.

The low condition of student learning activities when participating in learning activities in mathematics subjects results in low critical thinking skills of students. The low critical thinking skills of students affect the low learning outcomes in mathematics subjects. This is proven based on the results of interviews obtained data on student learning outcomes in the mid-semester exam in the 2014/2015 academic year. It is known that the percentage of completion in the initial condition reached 44.44% or 12 students who were able to achieve KKM, while 55.55% or 15 students had not been able to achieve KKM. The average value obtained by students is 64.51 with the highest value of 100 and the lowest value of 44. Initial data on learning outcomes can be seen in (table 4.1). At the beginning before taking action in cycle I, the researcher gave a questionnaire on Monday, October 12, 2015 to obtain initial data on the critical thinking skills of grade III students of SD Negeri Karangmloko 1. Based on the results of the questionnaire, the initial value of critical thinking skills was 58.17 on the "not critical" criteria based on table 3.24 in chapter III. With a percentage of students who are at least quite critical of 33.33%. Initial data on critical thinking skills can be seen in (table 4.11). The research in cycle I was carried out in 2 meetings. Cycle I meeting 1 was held on October 13, 2015 and cycle I meeting 2 was held on October 17, 2015. Each meeting was held for 2 teaching hours or 2 x 35 minutes. The initial step taken by the researcher to conduct research on the application of contextual teaching and learning approaches as an effort

to improve learning outcomes and critical thinking skills of grade I students was to ask permission from Mr. Sumarno as the Principal of SD Negeri Karangmloko 1. Then the researcher met with the Grade III teacher, Mrs. Ratna Indrayanti to ask for permission to conduct research in grade III and at the same time conduct interviews as an initial step to identify problems that occur in grade III of SD Negeri Karangmloko 1. The researcher planned a time to conduct initial observations before conducting the research. After conducting observations, the researcher found problems with the learning process.

One of these problems is the low learning outcomes and critical thinking skills in mathematics subjects for grade III of SD Negeri Karangmloko 1. In the planning stage in this study, the researcher prepared learning tools, research tools, and targets set by the researcher to achieve indicators of learning outcomes and indicators of critical thinking skills. The learning tools in this study were in the form of a syllabus, lesson implementation plan (RPP), student worksheets (LKS), and cycle I evaluation questions. The learning tools were then validated by lecturers and class teachers. The implementation of learning in cycle 1 was carried out for two meetings. The first meeting was held with an allocation of two teaching hours or 2 x 35 minutes. The second meeting was held for two teaching hours or 2 x 35 minutes. After completing the research in cycle I, in the next meeting the researcher gave five final evaluation questions for cycle I in the form of essay questions. In addition, the researcher also compiled a questionnaire about students' critical thinking skills. This research was conducted in class IV of Madarasah Ibtidaiyyah Negeri 1 Labuhanbatu located at Bilah Hilir, Negeri Baru Village, Bangun Sari II Hamlet. This research was conducted in class III with 30 students consisting of 15 male students and 15 female students. Learning activities in this study were carried out in two meetings with a time allocation of 2 x 35 minutes for each meeting.

The first meeting was held on February 11, 2025 and the second meeting was held on February 18, 2025. Then the final evaluation of cycle I was held on February 12, 2025. The learning activities carried out in cycle I were by using the steps of the contextual learning approach, namely (1) Relating, (2 Experiencing, (3) Cooperating, (4) Applying, (5) Transfering. And using 7 components of the contextual learning approach including; (1) Constructivism, (2) Inquiry, (3) Questioning, (4) Learning Community, (5) Modeling, (6) Reflection, (7) Authentic Assessment. Meeting 1 was held on February 11, 2025 with the main material of multiplication with two-digit results and division with two numbers. In general, the learning carried out was in accordance with the learning design that had been made by the researcher. At this meeting, the concepts of multiplication and division were taught simply.

The opening activity (Relating) began by providing motivation to students. by singing songs that aim to motivate students to learn. The core activities (Experiencing, Cooperating, Applying) of learning are carried out by providing an initial explanation of multiplication and division by asking students. "Who has marbles at home?"

(Questioning) If there are 3 containers of marbles and each container contains 5 marbles, how many marbles are there in total?" In this activity, the researcher conducted a direct experiment using marbles in front of the class (Constructivism), then the researcher appointed one of the students to practice directly using the marbles (Modeling). Through this activity, the researcher introduced that multiplication comes from repeated addition. Furthermore, students are divided into 6 groups (Learning Community). The researcher provides an example of how to use Dienes block media in multiplication and division operations (Modeling).

Then students in the group together try to practice how to use Dienes block media (Learning Community). Furthermore, the researcher explains multiplication with two-digit results and division of two numbers in a short stacked manner (Inquiry). Students discuss in groups working on the questions on the student worksheet (Learning Community). The final activity (transferring) students with the help of the teacher ask and answer questions about the learning that has been done (Reflection). Then individually students work on the final evaluation questions of the meeting (Authentic Assessment). The second meeting was held on October 17, 2015. The initial activity (relating) was carried out by asking and answering questions about the material taught in the first meeting (Questioning). Furthermore, exploring students' understanding of multiplication and division by playing a question and answer game using number cards (Contructivism). In the core activity (Experiencing, Cooperating, Applying) the researcher divided students into 6 groups as in the first meeting (Learning Community). The researcher used Dienes block media. The researcher gave examples of problems about multiplication and division to be solved using Dienes block media (Contructivism). Students discussed working on the questions on the student worksheet (Learning Community). The next activity the researcher gave everyday problems (story problems) related to multiplication

The second meeting was held on October 17, 2015. The initial activity (relating) was carried out by asking and answering questions about the material taught in the first meeting (Questioning). Furthermore, exploring students' understanding of multiplication and division by playing a question and answer game using number cards (Contructivism). In the core activity (Experiencing, Cooperating, Applying) the researcher divided students into 6 groups as in the first meeting (Learning Community). The researcher used Dienes block media. The researcher gave examples of problems about multiplication and division to be solved using Dienes block media (Contructivism). Students discussed working on the problems on the student worksheet (Learning Community). The next activity, the researcher gave everyday problems (story problems) related to multiplication and division (Contructivism). The researcher explained the problems using mathematical sentences, namely known, asked, answered, and so. Then the solution to the multiplication and division problems used a short stacked method (Inquiry). Students worked in groups on the story problems on the student worksheet

(Learning Community). Representatives from each group wrote the results of working on story problems on the board (Modeling). The researcher then confirmed the students' answers, whether the answers worked on by the students were correct or not. The final activity (transferring) students with teacher guidance concluded the learning outcomes that had been carried out (Reflection). Then students worked on the final evaluation questions of the cycle which were worked on individually to repeat the material that had been studied (Authentic Assessment).

Observations were made to determine the improvement in learning outcomes and students' critical thinking skills through a contextual learning approach. The improvement in learning outcomes observed was in the material on multiplication and division operations for class III of SD Negeri Karangmloko 1. The critical thinking skills observed included six indicators, namely: 1) Analyzing arguments; 2) Being able to ask questions; 3) Being able to answer questions; 4) Solving problems, (5) Making conclusions; 6) Skills in evaluating and assessing the results of observations. The improvement in learning outcomes in cycle I can be observed from the results of the final evaluation of cycle I. Then students' critical thinking skills can be seen from the results of the questionnaire that has been filled out by class IV students of MIN 1 Labuhanbatu, no action has been taken. Furthermore, the researcher observed students' critical thinking skills from meeting 1 and meeting 2 using a critical thinking ability observation sheet that had been made by the researcher which aimed to see whether there was an increase in students' critical thinking skills, the observation data from cycle I meetings 1 and 2 would be used as initial data for observing students' critical thinking skills.

Learning activities in cycle I using a contextual learning approach in mathematics subjects in class IV MIN 1 Labuhanbatu went according to the plan that had been prepared. In cycle I, it was carried out for two meetings. The first meeting was held on Tuesday, February 11, 2025 for 2 lesson hours or 2 x 35 minutes. While the second meeting was held on Saturday, February 18 for 2 lesson hours or 2 x 35 minutes. Then at the end of the cycle I research, the researcher conducted a final evaluation of cycle I which was carried out on Wednesday, February 13, 2025

Overall, learning activities have increased compared to conditions before the study, students actively ask and answer questions from the teacher. When the teacher is explaining the material using media or verbally, students are very enthusiastic about paying attention. During learning, the teacher also conducts learning in groups. The atmosphere during learning. in groups runs conducively, because the teacher gives points to groups that actively ask and answer questions from the teacher. The awarding of points aims to increase students' enthusiasm in participating in learning. The results of the average value of the increase in learning outcomes in cycle I obtained an average class value of 76.53, the researcher targeted the final success criteria for cycle I to be 70. Then the results of the percentage of completion in cycle I were 73.33% or around 22

students had completed and 26.66% or around 8 students had not completed (table 4.2). It can be concluded that the increase in learning outcomes in cycle I experienced a significant increase from the initial condition data before the study was conducted. Based on this description, it can be concluded that the increase in learning outcomes of class MIN 1 Labuhanbatu students has increased and has exceeded the target set by the researcher. However, the researcher will continue to cycle II with the aim of strengthening student learning outcomes so that they improve again, and by continuing to cycle II, the researcher will make improvements to learning that is still lacking in cycle I so that it can be improved in cycle II. Then students' critical thinking skills are also expected to increase.

The research in cycle II was carried out in two meetings. Cycle II meeting 1 was held on February 11 and cycle II meeting 2 was held on February 18, 2025. Each meeting was held for 2 teaching hours or 2 x 35 minutes. Then at the end of the research cycle I and cycle II, the researcher gave a final evaluation question on the date. The final evaluation value of the cycle will be used as the final data in cycle II. In the action planning in cycle II, the researcher prepared learning tools in the form of a syllabus, lesson implementation plan (RPP), student worksheets (LKS), and cycle II evaluation questions. The implementation of learning in cycle II was carried out for two meetings. The first meeting was held with a time allocation of 2 teaching hours or 2 x 35 minutes. The second meeting was also held for 2 teaching hours or 2 x 35 minutes. After completing the research in cycle II, then in the next meeting the researcher conducted a final evaluation of cycle II. In addition, at the end of cycle II the researcher will provide a critical thinking skills questionnaire.

Meeting 1 in cycle II was held on October 24, 2015. In cycle II meeting 1, the researcher will deliver material that is not much different from cycle I meeting 1, namely about multiplication with a result of two digits and division of two digits. The initial learning activity (Relating) begins with apperception, namely by singing a song to motivate students to learn. The core learning activity (Experiencing, Cooperating, Applying) begins by dividing students into 6 groups. Then the teacher confronts students with problems about multiplication and division which will then be solved using concrete media of marbles and Dienes block media (Constructivism). In the previous meeting in cycle I, the researcher has given an example of how to use Dienes block media. The researcher gives students worksheets to be worked on in groups (Learning Community). Furthermore, the researcher explains the multiplication problems with a result of two digits and division of two digits by means of short stacking (Inquiry). The final activity (Transferring) students are assisted by and the teacher makes conclusions about the learning that has been done (Reflection). At the end of the learning, the researcher gives final evaluation questions to determine the improvement of student learning outcomes (Authentic Assessment).

The second meeting was held on February 11, 2025. The initial learning activity (Relating) was carried out by praying, then continued by providing motivation by singing songs to raise students' enthusiasm for learning. Apperception activities were carried out by asking questions about the learning carried out in cycle II meeting 1 (Questioning), then continued by telling stories about daily activities related to multiplication and division (Constructivism). The core learning activity (Experiencing, Cooperating, Applying) the researcher demonstrated again the multiplication with three-digit results and the division of three numbers by means of short arrangements (Inquiry). Students were divided into 6 groups as in the previous meeting. The researcher then gave examples of multiplication and division using the Dienes block media, then students were asked to try to practice directly using the Dienes block media (Learning Community). Students worked on the questions on the student worksheet by discussing with their groups (Learning Community). Before continuing to the next material, the researcher conducted a question and answer session about the arithmetic operations of multiplication and division using number cards (Questioning). The researcher re-presented the material by providing examples of story problems about everyday problems related to multiplication and division (Constructivism). Furthermore, the researcher explained how to solve the story problems using mathematical sentences. Students worked in groups on the story problems on the student worksheet (Learning Community). The final activity (Transferring) students with teacher guidance concluded the learning outcomes that had been carried out (Reflection).

The final learning activity was carried out by working on the final evaluation questions of the meeting which were worked on individually to repeat the material that had been studied (Authentic Assessment). Observations were carried out to determine the increase in learning outcomes and students' thinking skills through a contextual learning approach. The increase in learning outcomes observed was about multiplication and division arithmetic operations. The critical thinking skills observed included six indicators, namely: (1) Analyzing arguments, (2) Being able to ask questions, (3) Being able to answer questions, (4) Solving problems, (5) Making conclusions, (6) Skills in evaluating and assessing the results of observations. The increase in learning outcomes in cycle II was seen from the evaluation questions of cycle II and the final evaluation questions of cycles I and II. Meanwhile, the increase in critical thinking skills can be seen from the results of the final questionnaire.

Then the results of observations of increasing critical thinking skills during the learning process can be seen from the results of observations using observation sheets that researchers have made starting from meetings 1 and 2, the results of the observation cycle II are used as the final observation data. The overall learning process, students actively participate in learning, students are very active in asking or answering when researchers ask questions or when researchers are explaining the material. Learning activities in cycle II went well. Cycle II was carried out for two meetings. Meeting

1 was held on February 11, 2025. Cycle II meeting 2 was held on February 18, October 2025. Each meeting was held for 2 teaching hours or 2 x 35 minutes. Learning activities in cycle II students were very enthusiastic in receiving learning, when the teacher was explaining the material students were seen listening and paying attention but there were still some students who did not pay attention to the teacher's explanation. In cycle II, students were very active in asking and answering when the teacher explained the material or when the teacher asked questions. It was also seen that students were very happy during group learning, because during group learning the teacher explained the material about multiplication and division using learning media so that students were very enthusiastic about practicing the use of the learning media. The teacher also gives points to groups that are active in asking or answering questions from the teacher. In the middle of learning in cycle II, the researcher provides a game through questions and answers using number cards about multiplication and division.

Learning outcomes in cycle II increased. In cycle I, the average learning outcomes obtained by students were 75 and the percentage of students who completed reached 77%. The average achievement in cycle II increased, reaching 855 with a target of 75 and the percentage of student completion reached 80% or 24 students completed with a target of 80% (table 4.3). It can be concluded that the desired achievement results by the researcher in cycle II have been achieved, but the researcher still provides final evaluation questions for cycle I and cycle II which have been implemented on February 18, 2025 with the aim of strengthening the increase in learning outcomes obtained by students at the end of the cycle. Then the results of the final evaluation of cycle I and cycle II will be used as the final results of cycle II. The average score at the end of cycle I and cycle II reached 87.2 with a target in cycle II of 75. With a percentage of completion reaching 86.66% or around 26 students completed and 13.33% did not complete or around 4 students (table 4.4). Then based on the final questionnaire data, a score of 79.36 was obtained on the "quite critical" criteria, based on table 3.24 in chapter III. With a percentage of students who were at least quite critical reaching 83.33% (table 4.19). Based on table 4.3, the results of the calculation of the increase in learning outcomes in cycle II obtained an average of 81 with a target of 85. From the results of the calculation of the percentage of student completion, there were 80% or 30 students who completed the target set by the researcher of 80%, and there were 6 students or 20% who did not complete or had not reached the KKTP set by the researcher. The results of the calculation of the overall data of the initial questionnaire indicators obtained a total class score of 1745, with an average class score of 58.17 in the "not critical" criterion and an average class score of 58.17 in the "not critical" criterion.

There are 10 students who are included in the minimum fairly critical criteria with a percentage of 33.33% of students who have critical thinking skills. The following is a summary of the initial critical thinking ability values from indicators 1 to 6 and the overall value of the critical thinking ability indicators. Based on table 4.12, data is

obtained on the initial conditions of the critical thinking ability of grade III students of SD Negeri Karangmloko 1, the critical thinking ability value of each indicator is obtained. In indicator 1 analyzing arguments, the critical thinking ability value is obtained, which is 53.5 in the "very uncritical" criterion with a percentage of students who are at least fairly critical of 30%. Indicator 2 is able to ask questions, the critical thinking ability value is obtained 64 in the "not critical" criterion, with a percentage of students who are at least fairly critical of 40%. Indicator 3 is able to answer questions, the critical thinking ability value is obtained, namely 54 in the "very uncritical" criterion, with a percentage of students who are at least fairly critical of 30%. Indicator 4 problem solving obtained a value. critical thinking ability is 60.33 in the "not critical" criteria, with a percentage of students who are at least quite critical 43.33%. Indicator 5 draws a conclusion that the critical thinking ability value is 58 in the "not critical" criteria, with a percentage of students who are at least quite critical 36.66% and Indicator 6 skills to evaluate and assess the results of observations obtained a critical thinking ability value of 59 in the "not critical" criteria, with a percentage of students who are at least quite critical 50%. Then from the overall data shows the critical thinking ability value reaches 58.17 in the "not critical" criteria with a percentage of students who are at least quite critical 33.33%.

Discussion

The implementation of classroom action research which started from February 11, 2025 to February 18, 2025 went smoothly, according to what was planned by the researcher. The purpose of this study was to improve learning outcomes and critical thinking skills of grade IV students of MIN 1 Labuhanbatu on the material of multiplication and division arithmetic operations through a contextual learning approach. The selection of multiplication and division arithmetic operations material was because based on the results of interviews with grade IV teachers, learning outcomes on multiplication and division materials were still low. This is evident from the results of the mid-term exam in the 2014/2015 academic year, it was known that there were 44.44% of students who achieved the KKTP and the remaining 55.55% of students had not achieved the KKTP determined by the school, which was 60, with an average student score reaching 64.51. Then the next step the researcher looked for competency standards (CP) and basic competencies (TP) which were included in the material of multiplication and division arithmetic operations. Based on the problems that occurred, the researcher took research material on multiplication and division operations using a contextual learning approach or contextual teaching and learning. Then CP .7 was selected to perform arithmetic operations on numbers up to three digits and TP 3.6 to perform multiplication resulting in three digit numbers and division of three digit numbers. The selection of competency standards and basic competencies was because the material was taught in the odd semester. This research is a classroom action research (PTK) using

2 cycles and each cycle consists of 2 meetings. Then this research uses 2 variables, namely increasing learning outcomes and critical thinking skills.

This research uses a contextual learning approach. The contextual learning approach is a learning concept that helps teachers in linking the material being studied by students and encourages students to make connections between the knowledge they have and its application in students' daily lives. Relating activities in this study, the teacher conveys the learning objectives to be achieved, namely about multiplication and division operations. Experiencing activities in this study, the teacher explains the material about multiplication and division by giving examples of everyday problems related to mathematical problems. Then the teacher demonstrates how to use learning media to explain the material about multiplication and division. Cooperating activities in this study, the teacher divides students into several groups, then students work on the questions in the LKS (Student Worksheet). Applying activities, students present the results of their work in front of the class. Furthermore, the teacher and students discuss the results of the work together. Transferring activities in this study, the teacher guides students to summarize or conclude the material that has been studied. Then the teacher gives evaluation questions.

In conducting the research, the researcher applied seven components of the contextual learning approach which include seven main components (Hosnan, 2014: 369), namely: Constructivism activities in this study, namely the researcher builds students' knowledge of the material being taught, namely about multiplication and division. The researcher conducts apperception by asking about daily activities related to multiplication and division. Then the researcher tries to connect the knowledge possessed by students with the material being studied. In the finding activity (Inquiry), the researcher always tries to provide daily problems related to multiplication and division. From these problems, students are then required to be directed to find a way to solve the problem. In the asking activity in this study, the teacher and students carry out question and answer activities regarding material that has not been understood. Namely about the steps for using learning media, how to solve multiplication and division problems by arranging short stories and story problems about multiplication and division. The learning community in this study, the researcher divides students into 6 groups according to the instructions, namely counting from 1 to 6. Each group discusses to answer the questions in the LKS. Representatives from each group come to the front of the class to present the results of the answers that have been worked on. Modeling in this study, researchers present learning media to solve problems about multiplication and division. Then students try to practice how to use the learning media. The learning media in question are marbles and Dienes blocks. Researchers provide direction and demonstrate the correct way to use learning media in solving problems about multiplication and division, and explain how to solve multiplication and division

problems by arranging short stories and story problems related to multiplication and division.

Reflection activities in this study, teachers and students conduct questions and answers, namely by reflecting by assigning students to relate learning to students' daily lives, by asking questions about the subject matter that has been studied. Real assessment in this study, researchers provide evaluation questions to be worked on individually. Giving evaluation questions aims to improve student learning outcomes. Learning research on mathematics subjects, arithmetic operations of multiplication and division in cycle I was conducted on Tuesday, February 11, 2025 and Wednesday, February 12, while cycle II was conducted on Tuesday, February 18, 2025 and Wednesday, February 19, 2025. Data on the increase in learning outcomes were obtained from the average value of the final evaluation of cycle I and the final evaluation of the cycle. According to Brahim (in Susanto, 2013: 5) argues that learning outcomes can be interpreted as the level of student success in learning the subject matter. Then this study has relevance to the research written by Erna Nurmaningsih in (2009) because this study has the same variable, namely learning outcomes.

The improvement in learning outcomes in cycle I experienced an increase compared to the initial conditions before the research was conducted using a contextual approach. In the initial conditions before the research was conducted, it showed that the percentage of student completion was 44.44% of MIN 1 Labuhanbatu class students in the 2024/2025 academic year who were able to achieve KKtp. Meanwhile, 55.55% of students had not achieved KKtp (Table 4.1).

After it was known that the initial data on the learning outcomes of MIN 1 Labuhanbatu class students in the 2024/2025 academic year was still low, then the researcher conducted research in cycle I using a contextual learning approach. After conducting research in cycle I using a contextual learning approach in mathematics lessons on the material of multiplication and division arithmetic operations, the average value in cycle I was 76.53 with the target set by the researcher being 70.

Based on figures 4.2 and 4.3, data was obtained that there was an increase in learning outcomes using a contextual approach. The results of the study in cycle I by applying a contextual approach, obtained an average value of 76.53 with a target in cycle I of 70. Then the percentage of learning outcomes in cycle I increased to 73.33% with a target set by the researcher of 70% (Table 4.2). It can be concluded that the achievement of the average value of learning outcomes and the percentage of learning outcomes in cycle I have reached the target set by the researcher. Then to strengthen student learning outcomes, the researcher continued the study in cycle II with materials and learning steps that were almost the same as in cycle I. The data obtained in cycle II showed that the average value obtained by students reached 87.2 with a target set by the researcher of 80. The percentage of students who completed reached 86.66% or 26 students completed and there were 13.33% or 4 students who had not completed with

the target set by the researcher in cycle II being 80% of students completed (Table 4.4). From table 4.23 it can be concluded that the increase in learning outcomes of class IV students of MIN 1 Labuhanbatu experienced an increase, from the initial condition before the action was taken, the average value reached 64.51 with a percentage of student completion of 44.44%. After the action in cycle I, the average value became 76.53 with a percentage of completion of 73.33%. Then the action was taken in cycle II, the average value became 87.2 with a percentage of completion reaching 86.66%. From figures 4.6 and 4.7 it can be seen that the initial condition before the research was conducted reached 44.44% with an average value of 64.51, after the research was conducted in cycle I using a contextual learning approach on the material of multiplication and division arithmetic operations, the average value in cycle I reached 76.53 with a percentage of completion of 73.33% of students completed. From the learning outcomes in cycle I, it can be said to be successful because the results obtained by students have exceeded the target that the researcher expected. However, the researcher wanted to improve learning outcomes and consolidate learning outcomes, so the researcher continued to cycle II.

After continuing to cycle II by applying a contextual learning approach, learning outcomes increased. In cycle II, an average score of 87.2 was obtained with a percentage of completion reaching 86.66%. Based on the results of the research and discussion above, it can be concluded that the use of a contextual teaching and learning approach in learning mathematics on the material of multiplication and division arithmetic operations is very appropriate for improving learning outcomes in class IV students of MIN 1 Labuhanbatu in the 2024/2025 Academic Year. This is evident from the average value of learning outcomes and the percentage of completion in each cycle which increased gradually. Based on the results of the achievements that have been obtained, it can be concluded that this research was successful and the researcher stopped this research until cycle II.

Critical thinking skills in this study were studied using 2 instruments to measure critical thinking skills, namely using a questionnaire and an observation sheet. The questionnaire was administered twice, namely at the beginning before the research was conducted, namely on February 11, 2025 and at the end after the research was conducted, namely on February 18, 2025. Based on the results of observations that have been carried out in cycles I and II, it can be concluded that there is an increase in critical thinking skills in class MIN 1 Labuhanbatu in the 2024/2025 academic year. This is in line with Anggelo's opinion (in Susanto, 2013: 122), critical thinking is implementing thinking activities that include analyzing, recognizing problems, solving problems, concluding and evaluating. This study has relevance to the study written by Nur Prafitriani (2014) with the same variables as this study, namely critical mathematical thinking.

Based on Figure 4.8, the questionnaire data on students' critical thinking skills from the initial conditions before the research and the final conditions after the

research increased. In indicator 1, the initial data before the research was conducted, the critical thinking skills score was 53.3 on the "very uncritical" criteria, then after the research was conducted, indicator 1 increased with a critical thinking skills score of 79.15 on the "quite critical" criteria. In indicator 2, the initial data before the research was conducted, the critical thinking skills score was 64 on the "quite critical" criteria, while after the research was conducted, the critical thinking skills score on indicator 2 increased to 83.7 on the "critical" criteria. Then in indicator 3, the initial data before the research was conducted, the critical thinking skills score was 54 on the "very uncritical" criteria, after the research was conducted, the critical thinking skills score on indicator 3 increased to 82 on the "critical" criteria. In indicator 4, before the research was conducted, the critical thinking skills score was 60.3 on the "not critical" criteria, then after the research was conducted, the critical thinking skills score increased to 74.76 on the "quite critical" criteria. In indicator 5 before the research, the critical thinking ability score was 58 in the "not critical" criteria, after the research, indicator 5 increased to 78.3 in the "quite critical" criteria.

Then in indicator 6 before the research, the critical thinking ability score was 59 in the "not critical" criteria, after the research, indicator 6 increased to 83.36 in the "critical" criteria. Then the overall value of the initial condition of critical thinking ability was 58.17 "not critical" after the research increased to 79.36, namely in the "quite critical" criteria. From Figure 4.9, it can be seen that the percentage of students who were at least quite critical has increased. In indicator 1, the initial condition before the research, the percentage of students who were at least quite critical was 30%, then increased in the final condition to 83.33%. In indicator 2, the initial condition, the number of students who were at least quite critical was 40%, increasing in the final condition to 97%. Indicator 3, the initial condition, the number of students who were at least quite critical was 30%, increasing in the final condition to 93%. Then in the condition of indicator 4, the number of students who were at least quite critical was 43.33%, increasing in the final condition to 76.66%. Indicator 5 initial condition, the number of students who were at least quite critical was 36.33%, increasing in the final condition to 76.66%. In indicator 6 initial condition, the number of students who were at least quite critical was 50%, increasing in the final condition to 93.33%. Then the overall initial condition, the number of students who were at least quite critical, namely 33.33%, increased in the final condition to 83.33%. Furthermore, data collection of observations or observations on critical thinking skills was carried out during the learning activities, namely in cycles I and II.

The purpose of collecting observation data on critical thinking skills is to strengthen critical thinking skills from the results of the questionnaire. Observations in cycle I were carried out twice, namely in cycle I meeting 1 and cycle I meeting 2. While observations in cycle II were carried out twice, namely in cycle II meeting 1 and cycle II meeting 2. Based on Figure 4.10, data was obtained on critical thinking skills based on

observations. In indicator 1, the initial data obtained a score of 62, which is in the "quite critical" criteria, then the final data on indicator 1 increased to 73, which is in the "critical" criteria. In indicator 2, a score of 67 was obtained, which is in the "quite critical" criteria, then the final data acquisition in cycle 2 increased to 76 in the "critical" criteria. Then in indicator 3, the initial observation score data was obtained 63 in the "quite critical" criteria and the final condition in indicator 3 obtained a score of 77 in the "critical" criteria. In indicator 4, the initial observation data obtained a score of 57, which is in the "not critical" criteria and the final data in indicator 4 increased to 74 in the "critical" criteria. While in indicator 5, the initial observation data obtained a score of 53 in the "not critical" criteria, then the final data in indicator 5 increased to 68 in the "quite critical" criteria. Then the initial data in indicator 6 obtained a score of 55 in the "not critical" criteria and the final data in indicator 6 increased to 70 in the "quite critical" criteria. From the questionnaire data and observations on critical thinking skills above, the results show that there is an increase in critical thinking skills in each indicator.

Conclusion

Based on the results of classroom action research (CAR) that has been implemented at SD Swasta Islam Terpadu Bunayya Pandan regarding the application of contextual teaching and learning approach, it can be concluded that the application of contextual learning approach in improving learning outcomes and critical thinking skills in mathematics on the material of multiplication and division operations in grade IV is carried out with the following steps: (1) Relating, (2) Experiencing, (3) Cooperating, (4) Applying, (5) Transferring. The application of contextual learning approach can improve learning outcomes in mathematics subjects on the material of multiplication and division operations in grade III of SD Negeri Karangmloko 1. This can be seen from the initial average condition before the research was conducted, which was 64.51 with a percentage of completion of 44.44%. After conducting research in cycle I using a contextual learning approach on the material of multiplication and division operations, there was an increase with an average value of 76.53 with a percentage of student completion reaching 73.33%. Then continued to cycle II by applying a contextual learning approach, student learning outcomes increased. In cycle II the average increased to 87.2 with the percentage of student completion reaching 86.66%. The application of the contextual learning approach can improve the critical thinking skills of grade III students of SD Negeri Karangmloko 1. This can be seen from the initial critical thinking ability score of 58.17 on the "not critical" criteria with the percentage of students who are at least quite critical 33.33%. In the final condition the critical thinking ability score increased to 79.36 on the "quite critical" criteria, with the percentage of students who are at least quite critical reaching 83.33%.

References

Arikunto, S. (2002). Prosedur Penelitian. Bandung: Rineka Cipta.

Dasopang, M. D., Lubis, A. H., & Dasopang, H. R. (2022). How do Millennial Parents Internalize Islamic Values in Their Early Childhood in the Digital Era? AL-ISHLAH: Jurnal Pendidikan, 14(1), 697–708.

Dasopang, M. D., Nasution, I. F. A., & Lubis, A. H. (2023). The Role of Religious and Cultural Education as A Resolution of Radicalism Conflict in Sibolga Community. HTS Theological Studies, 79(1), 1–7.

Erawadi, E., Hamka, H., & Juliana, F. (2017). The Analysis of Student's Stressed Syllables Mastery at Sixth Semester of TBI in IAIN Padangsidimpuan. English Education: English Journal for Teaching and Learning, 5(1), 44–57.

Fatimah, A., & Maryani, K. (2018). Visual Literasi Media Pembelajaran Buku Cerita Anak. Jurnal Inovasi Teknologi Pendidikan, 5(1), 61–69. https://doi.org/10.21831/jitp.v5i1.16212

Gogahu, D. G. S., & Prasetyo, T. (2020). Pengembangan Media Pembelajaran Berbasis E-Bookstory untuk Meningkatkan Literasi Membaca Siswa Sekolah Dasar. Jurnal Basicedu, 4(4), 1004–1015.

Hamka, H. (2023). The Role of Principals on Teacher Performance Improvement in a Suburban School. QALAMUNA: Jurnal Pendidikan, Sosial, Dan Agama, 15(1), 371–380.

Hamka, H., Suen, M.-W., Anganthi, N. R. N., Haq, A. H. B., & Prasetyo, B. (2023). The Effectiveness of Gratitude Intervention in Reducing Negative Emotions in Sexual Abuse Victims. Psikohumaniora: Jurnal Penelitian Psikologi, 8(2), 227–240.

Harahap, S. M., & Hamka, H. (2023). Investigating the Roles of Philosophy, Culture, Language and Islam in Angkola's Local Wisdom of 'Dalihan Na Tolu.' HTS Teologiese Studies/Theological Studies, 79(1), 8164.

Hendrawati, S., Rosidin, U., & Astiani, S. (2020). Perilaku hidup bersih dan sehat (PHBS) siswa/siswi di sekolah menengah pertama negeri (SMPN). Jurnal Perawat Indonesia, 4(1), 295–307. https://doi.org/https://doi.org/10.32584/jpi.v4i1.454

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

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

Lubis, A. H., & Dasopang, M. D. (2020). Pengembangan Buku Cerita Bergambar Berbasis Augmented Reality untuk Mengakomodasi Generasi Z. Jurnal Pendidikan: Teori, Penelitian, Dan Pengembangan, 5(6), 780–791.

Lubis, A. H., Dasopang, M. D., Ramadhini, F., & Dalimunthe, E. M. (2022). Augmented Reality Pictorial Storybook: How does It Influence on Elementary School Mathematics Anxiety? Premiere Educandum: Jurnal Pendidikan Dasar Dan Pembelajaran, 12(1), 41–53.

Lubis, A. H., & Wangid, M. N. (2019). Augmented Reality-assisted Pictorial Storybook: Media to Enhance Discipline Character of Primary School Students. Mimbar Sekolah Dasar, 6(1), 11–20. https://doi.org/10.17509/mimbar-sd.v6i1.16415

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

Manshur, U., & Ramdlani, M. (2019). Media audio visual dalam pembelajaran PAI. Al-Murabbi:Jurnal Pendidikan Agama Islam, 5(1), 1–8.

Mardhiyah, R. H., Aldriani, S. N. F., Chitta, F., & Zulfikar, M. R. (2021). Pentingnya Keterampilan Belajar di Abad 21 sebagai Tuntutan dalam Pengembangan Sumber Daya Manusia. Lectura: Jurnal Pendidikan, 12(1), 29–40.

Ningsih, Y. S., Mulia, M., & Lubis, A. H. (2023). Development of Picture Storybooks with TheoAnthropoEco Centric Approach for Elementary School Students. AL-ISHLAH: Jurnal Pendidikan, 15(2), 1888–1903.

Nurhidayah, I., Asifah, L., & Rosidin, U. (2021). Pengetahuan , Sikap dan Perilaku Hidup Bersih dan Sehat pada Siswa Sekolah Dasar. 13(1), 61–71. https://doi.org/10.32528/ijhs.v13i1.4864

Pebtiyanti, I., Ahmad, A., Dzaky, M., Fauziah, S. N., Rendi, & Puspitasari, P. (2023). Peran kurikulum merdeka dalam meningkatkan harmonisasi antara masyarakat dan sekolah. Jurnal Pacu Pendidikan Dasar, 3(1), 269–277. https://doi.org/https://doi.org/10.22021/pacu.v3i1.411

Rahmah, S., & Lubis, A. H. (2024). Problem Posing as a Learning Model to Improve Primary School Students' Mathematics Learning Outcomes in Gayo Lues. Journal of Indonesian Primary School, 1(4), 93–104.

Rahman, A., Munandar, S. A., Fitriani, A., Karlina, Y., & Yumriani. (2022). Pengertian Pendidikan, Ilmu Pendidikan dan Unsur-Unsur Pendidikan. Al Urwatul Wutsqa: Kajian Pendidikan Islam, 2(1), 1–8.

Ranisa, R., Erawadi, E., & Hamka, H. (2018). Students' Mastery in Identifying Adverbs at Grade VIII SMPN 2 Batang Toru Tapanuli Selatan. ENGLISH EDUCATION JOURNAL: English Journal for Teaching and Learning, 6(2), 241–252.

Ricardo, R., & Meilani, R. I. (2017). Impak Minat dan Motivasi Belajar terhadap Hasil Belajar Siswa. Jurnal Pendidikan Manajemen Perkantoran (JPManper), 2(2), 188–201.

Santi, Undang, & Kasja. (2023). Peran Guru PAI dalam Membentuk Karakter Peserta Didik di Sekolah. Jurnal Pendidikan Tambusai, 7(2), 16078–16084. https://doi.org/https://doi.org/10.31004/jptam.v7i2.8918

Sugiyono. (2018). Metode Penelitian Kuantitatif Kualitatif dan R&D. Bandung: Alfabeta.