Cendikia : Media Jurnal Ilmiah Pendidikan, 14 (5) (2024) pp. 546-554
Published by: IOCSCIENCE

Cendikia : Media Jurnal Ilmiah Pendidikan

Short story learning model and its role in improving motivation, activity, critical thinking, and learning outcomes of elementary school students

Karen Amalin Lestyani[1], Akhmad Riandy Agusta[2], Hanrezi Dhania[3]
[1,2]Pendidikan Guru Sekolah Dasar, Universitas Lambung Mangkurat, Banjarmasin, Indonesia
[3]Pendidikan Guru Sekolah Dasar, Universitas Djuanda, Bogor, Indonesia

ARTICLE INFO

Article history:

Received Jan 31, 2024
Revised Apr 04, 2024
Accepted Apr 20, 2024

Keywords:

Motivation
Learning Activities
Critical Thinking Skills
CERPEN Model

ABSTRACT

The problem in this study is the low motivation, activity, critical thinking skills of students in class V SDN Pasar Lama 1 due to one-way learning, not using concrete learning media and attracting students' attention, not applying meaningful learning activities, not applying learning models that focus on developing each indicator of critical thinking skills, there is no combination of learning models that can arouse student motivation. The purpose of this study was to analyze the increase in learning motivation, student activity, critical thinking skills and student learning outcomes. This research applies Classroom Action Research (PTK) because it aims to improve the learning process to increase motivation, activity, critical thinking and learning outcomes through a solution, namely the CERPEN innovative learning model. This research was conducted in 4 meetings by implementing all stages of PTK consisting of planning, implementation, observation and reflection. The subjects of this study were students of class V-B SDN Pasar Lama 1, totaling 26 students consisting of 12 boys and 14 girls, in the second semester of the 2022/2023 school year. The data collected is qualitative data obtained through observations of teacher activities, student motivation, student activities, and critical thinking skills, then using quantitative data obtained by student learning outcomes through techniques obtained by individual and group written tests. Data analysis in this study used descriptive analysis techniques and analysis of the relationship between research aspects described using tables, graphs and interpretations with percentages.

Corresponding Author:

Akhmad Riandy Agusta,
Pendidikan Guru Sekolah Dasar,
Universitas Lambung Mangkurat,
Jl. Brig Jend. Hasan Basri, Pangeran, Kota Banjarmasin, Kalimantan Selatan 70123, Indonesia.
Email : ppg.karenlestyani00728@program.belajar.id

INTRODUCTION

Mathematics has learning objectives that require students to understand mathematical concepts that will be connected to students' daily lives. Student learning activities are focused on understanding mathematical concepts, namely when students are able to solve the problems contained in the problem with little difference in the example problems presented. The objectives of mathematics

learning according to Hasyim & Eldiana (2020) consist of five standard basic abilities, namely, reasoning and proof, communication, connections, representation, and problem solving. Looking at the results of observations at SDN Pasar Lama 1 shows results that have not met the expectations of learning Mathematics. Students are not skilled in mathematical logical thinking as indicated by students still being unable to master learning concepts that are related to everyday life, when asked to mention the concept of a mathematical model they are often unable to distinguish which ones are correct and which ones are wrong, students find it difficult to find a solution to a problem. Students who should be careful and thorough in analyzing mathematical concepts and finding solutions, tend to answer randomly without correcting the truth of the concept or problem solving. In addition, students who should never give up in solving mathematical problems but students show an uninterested attitude in solving a problem, when students are given a story problem and asked to use the right formula, students tend to be lazy to analyze more deeply the story problem, and in the end students consider the problem very difficult for them. Students show an unenthusiastic attitude in finding answers to various problems posed by the teacher, are not enthusiastic about asking questions when experiencing difficulties and do not pay attention to the accuracy of solving mathematical problems that are being studied. In addition, students also show a lack of attention to the teacher's explanation which they consider uninteresting, not confident in presenting the results of their work, unless appointed by the teacher. In learning mathematics students should have a high interest, but they show no interest in solving math problems and tend to want to finish quickly from math learning classes. Students also showed confusion when asked to mention the application of learning mathematics with daily activities around them.

The real conditions in the field regarding low student motivation are characterized by students not having a high passion in participating in mathematics learning, students do not have high enthusiasm, students are slow in completing each task, students do not show high curiosity marked by not asking questions to the teacher's delivery, not enthusiastic in finding answers to various problems posed by the teacher, not enthusiastic about asking questions when experiencing difficulties and not paying attention to the accuracy of solving mathematical problems that are being studied (Handayani, n.d.; Saputro et al., 2021; Suprayogo et al., 2019). Students show an attitude of not being able to do things independently because they tend to depend on the teacher's direction, students are also not enthusiastic in the lesson which is indicated by students only following the teacher's flow in listening to the material. Students also show inattention to the teacher's explanation which they consider uninteresting, not confident in conveying the results of their work, unless appointed by the teacher. Students show low concentration, when asked by the teacher about a concept, they often repeat the question or do not have an answer to the question asked by the teacher, students are lazy to ask what surrounding objects are similar to building spaces.

Students often complain and are lazy to look for the best answers, students are just silent and do not show that they want to participate in answering when a friend answers a question from the teacher, students are still not able to be independent in finding solutions to problems, and are not confident students do not want to do more problems when they face problems that they think are difficult, especially story problems. When faced with complex problems and require problem solving, analytically students show a lethargic attitude because they do not yet have an understanding of mathematical concepts so they are not eager to solve the problems presented. students do not concentrate in participating in learning, there are still many wrong calculations of the answers, not careful in adding up the results because they are wrong in using mathematical formulas. Only a few students pay attention and are enthusiastic, and the others just chat with friends and make noise in the back. Students are noisy in class, rowdy and not interested in the implementation of class learning, therefore this has an impact on students not understanding and considering math as a subject that is very difficult to understand (Adhiyati et al., 2022; Ainin, 2020; Fitria & Budiyono, 2021).

The real conditions in the field in students' critical thinking skills are low, namely students have not been able to ask and answer questions about spatial shapes, have not been skilled in asking questions about the definition of spatial shapes, have not been skilled in analyzing the arguments presented by the teacher regarding the difference between spatial shapes and flat shapes, have not been skilled in delivering criticism when the teacher conveys concepts simply, no students ask or answer questions from the teacher, as if mathematics is a scary thing, when approached also students answer understand but in reality students do not understand. Students who should look for sources / information materials relevant to the topic, but students have not shown relevant information for problem solving, have not observed information from several sources, do not have the ability to search for information related to problem solving (providing arguments that the information is correct) students only wait for the teacher to convey sources other than textbooks and no students search or find sources of material from other sources besides books. Students who should make conclusions on learning outcomes, students have not made conclusions by deduction (general to specific), have not made conclusions by induction (specific to general), have not provided reasons for the answers given, have not provided responses from others. Students are still unable to make deductive or inductive conclusions, because when asked about the difference between spatial and flat shapes, students cannot answer, at that time the teacher has conveyed the characteristics of spatial shapes very much different from flat shapes (WIBOWO, 2023; Zahra & Hakim, 2022).

Students should define terms (retell the phenomenon or similarity of a phenomenon (objects of building space) but students in reality have not been able to consider the definition (looking for examples and not examples of a phenomenon (sorting objects that are included in building space or not), have not identified assumptions (providing a statement of truth from the definition given) and have not been skilled in concluding a truth, students are reluctant to find out what the surrounding objects have in common with the material of building space, they do not do more explanation to achieve what is called critical thinking. Students should be skilled in organizing strategies and tactics in solving problems, but in reality students have not formulated problems, have not organized problem solving strategies, have not formulated logical problem solving alternatives and have not interacted with others to determine the most appropriate solution (SINAGA, 2022; TURROSYIDAH, 2022; Winarso et al., 2023).

The impact if the problem is not overcome students are not skilled in logical mathematical thinking, so that students are confused about distinguishing which results are correct and which results are not correct, then have an impact by having a feeling of uncertainty about being able to solve mathematical problems, the impact if the problem is not overcome in learning motivation, namely low student learning motivation is characterized by students who are less interested in participating in activities directed by the teacher, slow in completing each task, no asking questions to the teacher's delivery, experiencing difficulties and not paying attention to the accuracy of solving mathematical problems that are being studied. The impact if the problem is not overcome in critical thinking skills, namely students have not been able to explain simply about mathematical concepts and analyze opinions conveyed by teachers or friends, convey criticism, feel afraid when the teacher asks because they do not understand.

The learning model is used as an option to develop students' thinking skills and activities so that students are excited, passionate, and feel happy when learning is carried out in the classroom. Therefore, the CERPEN model is used which is adopted from Contextual Teaching & Learning (CTL), Example Non Example, Number Head Together, Picture and Picture, Problem Based Learning. Learning with the CERPEN model is learning that focuses on improving students' critical thinking skills with the life of the surrounding environment and finding the right solution and determining alternative solutions to the problems faced. Furthermore, using pictures that support students to train their thinking skills and relate the problem of mathematics problems in everyday life, then in order to make the atmosphere more fun, combined with the use of head numbers used during the discussion process. To produce good student learning achievement, an interactive and

interesting learning process is needed, one of which is the application of a student-centered learning model and the use of media (Rahman et al., 2022) This model fully enhances student thinking and makes the learning atmosphere fun. In the steps of this model, it is loaded how each step can overcome the problems faced by students.

The low logical thinking of students can be overcome with the problem-based learning model chosen because it can overcome the problems of students who are not skilled in logical thinking. This model can also overcome students who are not skilled in exploring surrounding objects (Meilasari & Yelianti, 2020; Noorhapizah et al., 2019; Tan, 2021). The Contextual Teaching and Learning model can overcome students who are still low in critical thinking skills, then the problem of students who lack mathematical exploration, low curiosity and low interest in learning (Dewi & Primayana, 2019; P. M. N. Sari et al., 2020). The Example Non Example model overcomes students who are not yet skilled in exploring objects around them to learn math, increasing student curiosity. This model was also chosen because it can overcome the problem of students who easily give up in solving problems (Damayanti, 2023) (Komala et al., 2021).

The three learning models are appropriate for use in learning mathematics, but if you only use these two models, then learning feels less fun, while elementary school children like to play. So it can be combined with supporting models such as Picture and Picture and Number Head Together. The Picture and Picture model, chosen because it can overcome the problem of students who still have low curiosity this is because this model can also increase student activity and activity in learning (Kumeri et al., 2018). The Number Head Together (NHT) model, was chosen because it can overcome the problems of students who are not skilled in logical thinking, the number head together model can also be combined with concrete media, namely basically learning media is something that is used as a means of delivering information that is appropriate for learning material, has the aim of encouraging students to think critically and fostering the willingness of the learning process (A. M. Sari & Rahayu, 2022) so that it can help students who are still confused in understanding mathematical concepts, cooperative learning models can help students to be motivated in participating in mathematics learning (Setyowati & Inah, 2020).

The purpose of this study is to describe teacher activities and then analyze the increase in student motivation, critical thinking skills and student learning outcomes at SDN Pasar Lama 1.

RESEARCH METHODOLOGY

The approach in this classroom action research is a qualitative approach. A qualitative approach can be used if you want to see and reveal a situation or an object in its context; find meaning or a deep understanding of the problem at hand, which appears in the form of qualitative data, in the form of pictures, words, and events (Ibrahim et al., 2018).

The type of research conducted in this study is Classroom Action Research, each meeting of which includes interrelated planning, action implementation, observation and reflection (Novitasari et al., 2023).

This class action research was conducted at SDN Pasar Lama 1 which is located at Jl S. Parman No. 110, Banjarmasin City, South Kalimantan, 70123. In this study, the researchers chose class V SDN Pasar Lama 1 which consisted of 26 students, consisting of 12 male students and 14 female students as the subject of the research conducted in the even semester of the 2022/2023 school year in Mathematics material "Build a Cube and Beam" by using the CERPEN learning model combined from 5 learning models, namely Problem Based Learning, Contextual Teaching and Learning, Example Non Example, Number Head Together and Picture and Picture.

The factors studied in this study are teacher activity factors, student activity factors, student learning motivation, student critical thinking skills and student learning outcomes factors. This research data was obtained in the following ways: a) Observation, to obtain data on student activities

in learning and teacher activities in managing the learning process in the Mathematics content of the material "Buildings of Cube and Block spaces" by using a combination of CERPEN models (Problem Based Learning, Contextual Teaching and Learning, Example Non Example, Number Head Together and Picture and Picture). b) Questionnaires, this technique is used to obtain data on learning motivation and critical thinking skills of students in the Mathematics content of "Buildings of Cube and Block spaces using a combination of CERPEN models (Problem Based Learning, Contextual Teaching and Learning, Example Non Example, Number Head Together and Picture and Picture). c) Test, This technique is carried out by giving evaluations to students to find out quantitative data in the form of learning outcomes in mathematics lessons can be a measure of students' mathematical abilities (Ningsih et al., 2022) on Mathematics content using a combination of CERPEN models (Problem Based Learning, Contextual Teaching and Learning, Example Non Example, Number Head Together and Picture and Picture).

Data analysis was carried out descriptively which was carried out to find out by processing the information that had been collected, analyzing data in the form of making categories, associating or connecting related phenomena / information in order to find a pattern, and making conclusions (Nashihah, 2020). The research was conducted for 4 meetings.

Furthermore, the data collected with quantitative type for student learning outcomes obtained through written tests in groups and individually. Data analysis in this study using descriptive analysis cros tabulation is described by tables, graphs and interpertation with percentages to determine the increase in activity, skills and student learning outcomes. Indicators of success of learning implementation by teachers with a score range of 48-65 very good categories, student motivation is said to be successful if it reaches a score of 28-32, individual student activity with a score range between 48-65 very active categories and critical thinking skills with a score range between 17-20 very skilled categories. While classically student activeness reached a value ≥ 80% with the criteria "All Students are Very Active" and student learning outcomes with individual completeness success reached ≥ 70 in accordance with KKM and classical completeness 82% of students reached a value ≥ 70 in accordance with KKM.

RESULTS AND DISCUSSIONS

1. Observation Results of Student Motivation using the CERPEN Learning Model

Observation of student motivation was carried out during the implementation of learning which was observed by the researcher while acting as a teacher. Observation is also assisted by video recording during the learning process to recheck the accuracy of the student activity observation assessment. The results obtained from the observation of student motivation are as follows

Table 1. Recapitulation of Student Motivation

Meeting	Percentage	Category
1.	88%	Very High
2.	100%	Very High
3.	100%	Very High
4.	100%	Very High

Student motivation increases at each meeting, this is because the teacher's efforts in guiding students to follow the learning process are very good. This can also be noticed in student activities that show high motivation, namely students are involved in developing, students install and arrange pictures related to learning materials on the blackboard simultaneously and then present the results of the report work. Then students are full of enthusiasm. This is because the teacher presents learning by displaying images that contain examples and not examples, so that students are eager to analyze which images are correct and incorrect. Students also have high curiosity or curiosity. This is because the teacher displays random images, so that students can arrange the images in the correct order.

Then student activities are able to "walk alone". This is because the teacher directs students to read, and work on problems individually and asks to discuss with their peers if they do not understand. Then students have confidence, this is because they give appreciation in the form of rewards. Students also have higher concentration and consider difficulties as challenges and have high patience and fighting power.

2. Observation Results of Student Activities using the CERPEN Learning Model

Observation of student activity was carried out during the implementation of learning which was observed by the researcher while acting as a teacher. Observation is also assisted by video recording during the learning process to recheck the accuracy of the student activity observation assessment. The results obtained from student activity observations are as follows:

Table 2. Recapitulation of Student Activities

Meeting	Percentage	Category
1.	46%	Enough
2.	96%	Very High
3.	96%	Very High
4.	100%	Very High

Student activity increases at each meeting, indicated by students participating in initial orientation activities, listening to explanations of learning objectives and steps of learning activities this is due to students' curiosity about learning videos. Furthermore, students listen to explanations of learning materials using video media, pictures and songs, this is because it invites students to recognize the differences in spatial and flat shapes. With the guidance of the teacher, students install and arrange pictures, sort pictures related to learning materials on the board simultaneously and into a logical sequence. Students also listen to the illustrations shown on the learning video. Students are also involved in formulating problems which then students determine which pictures contain problems and not problems. Students also analyze pictures, discuss in groups, conduct investigations, and present the results of discussions as well as provide appreciation and responses to groups that present the results of discussions. Then students are also actively involved in answering questions when called by the teacher based on the head number to take a quiz and at the end of learning formulate conclusions..

3. Observation Results of Students' Critical Thinking Skills using the CERPEN Learning Model

Observation of students' Critical Thinking Skills was carried out during the implementation of learning which was observed by the researcher while acting as a teacher. Observations were also assisted by video recordings during the learning process to double-check the accuracy of the student activity observation assessment. Students' critical thinking skills also continued to increase at each meeting. This is due to the teacher's efforts in provoking students to be able to analyze arguments, understand concepts, convey opinions, make conclusions by deduction and mathematical induction..

Table 3. Recapitulation of Students' Critical Thinking Skills

Meeting	Percentage	Category
1.	46%	Enough
2.	96%	Very High
3.	96%	Very High
4.	100%	Very High

Students' critical thinking skills increase at each meeting, this is because the teacher's efforts in guiding students to follow the learning process are very good. It can also be seen in the critical

thinking skills of students who show very skilled, namely students do simple explanations of material concepts, because the teacher gives examples of objects around students, concludes mathematical concepts, makes further explanations and organizes strategies and tactics in solving problems.

3. Observation Results of Student Learning Outcomes using the CERPEN Learning Model

Student learning outcomes at each meeting when evaluated, always increased at each meeting. This is because the teacher tries to provoke student involvement in learning, increase motivation and students' critical thinking skills. This can be seen in table 4 below.

Table 4. Observation Results of Student Learning Outcomes using the CERPEN Learning Model

Meeting	Percentage	Affective	Psychomotor
1.	54%	92%	100%
2.	100%	88%	100%
3.	100%	88%	100%
4.	100%	100%	100%

Student learning outcomes have increased at each meeting. This is due to the use of the CERPEN learning model. In the process, this model is carried out by the teacher packaging fun learning which results in active students in participating in learning. Every time giving guidance, the teacher always reminds each student to respect the opinions of others and be disciplined towards the tasks given. Students are involved in discussing and dividing tasks to find the data needed for problem solving. Students complete the task very well, disciplined and orderly..

CONCLUSION

The conclusion that can be drawn based on the results of research and discussion is that there is a significant increase in teacher activity due to improvement efforts in each learning process using the CERPEN model properly. This has an impact on student activity which becomes very active and uses the CERPEN learning model that has been designed. This is also very influential on students' critical thinking skills, this is because students have been able to identify and analyze arguments, and express opinions on the delivery of material delivered by the teacher. The acquisition of learning outcomes has a big influence on increasing the score of learning outcomes. Based on the results of the research, discussion, and conclusions that have been described in detail, namely for the principal to provide guidance and guidance to teachers to try various learning models in order to improve students' activities, skills and learning outcomes. To the teacher when implementing learning by using a learning model that is in accordance with the objectives to be achieved. To other researchers, the results of the study can certainly be a learning innovation and reference in improving the quality of learning. The limitation of this research lies in the limited focus on the use of the Short Story learning model in improving teacher activities, students' critical thinking skills, and student learning outcomes. In addition, this study may also be limited to a particular school context or environment, so generalization of the results may be limited. For future research development, it is recommended to expand the scope of the study by considering the use of other learning models as well as integrating other factors that may affect teacher activity and student learning outcomes, such as school environmental factors, school leadership support, and student characteristics. In addition, further research could consider more complex research methods, such as experimental research with a more robust control design to directly measure the impact of using a particular learning model..

References

Adhiyati, U. P., Kumala, I., & Heryani, R. D. (2022). Tips Dan Trik Cara Mudah Belajar Matematika. *Jurnal Pengabdian Kepada Masyarakat Bangun Cipta, Rasa, & Karsa*, *1*(1), 7–13.

Ainin, N. (2020). Analisis kesalahan siswa dalam menyelesaikan soal matriks dan kaitannya dengan motivasi belajar matematika pada kelas xi. *Euclid*, *7*(2), 137–147.

Damayanti, M. P. (2023). *Penerapan Model Example Non Example Untuk Meningkatkan Hasil Belajar Siswa Pada Mata Pelajaran Dasar Listrik Dan Elektronika Kelas X Di SMK Negeri 1 Darul Kamal*. UIN Ar-Raniry Banda Aceh.

Dewi, P. Y. A., & Primayana, K. H. (2019). Effect of learning module with setting contextual teaching and learning to increase the understanding of concepts. *International Journal of Education and Learning*, *1*(1), 19–26.

Fitria, I. K., & Budiyono, H. (2021). *Penggunaan media petak persegi satuan untuk meningkatkan hasil belajar dalam mata pelajaran matematika materi luas dan keliling bangun datar kelas III SDN Tropodo 1 Sidoarjo*. State University of Surabaya.

Handayani, E. (n.d.). *MENINGKATKAN MOTIVASI BELAJAR SISWA KHUSUSNYA MATEMATIKA DENGAN METODE BIMBINGAN KELOMPOK TEKNIK HOME ROOM DI SMK*.

Hasyim, M., & Eldiana, N. F. (2020). Eksperimentasi model PBL dan PjBL berbasis schoology terhadap pemecahan masalah matematika ditinjau dari self-efficacy. *JP2M (Jurnal Pendidikan Dan Pembelajaran Matematika)*, *6*(2), 87. https://doi.org/10.29100/jp2m.v6i2.1751

Ibrahim, A., Alang, A. H., Madi, Baharuddin, & Ahmad, M. A. (2018). Metodologi Penelitian. In *PENINGKATAN MOTIVASI DAN HASIL BELAJAR MATEMATIKA PESERTA DENGAN MODEL NUMBERED HEADS TOGETHER(NHT)* (1st ed., Vol. 3, Issue December).

KOMALA, L., AFFANDI, L. H., & KHAIR, B. N. (2021). Meta-Analisis Pengaruh Model Example Non Example dalam Pembelajaran IPA di Sekolah Dasar. *Ganec Swara*, *15*(1), 868. https://doi.org/10.35327/gara.v15i1.185

Kumeri, N., Husain, R., & Ardini, P. P. (2018). PENGGUNAAN MODEL PEMBELAJARAN DAN MOTIVASI BELAJAR TERHADAP HASIL BELAJAR SISWA KELAS V DI SEKOLAH DASAR. *Akademika*, *7*(2), 164–171.

Meilasari, S., & Yelianti, U. (2020). Kajian model pembelajaran problem based learning (pbl) dalam pembelajaran di sekolah. *BIOEDUSAINS: Jurnal Pendidikan Biologi Dan Sains*, *3*(2), 195–207.

Nashihah, U. H. (2020). Membangun Kemampuan Komunikasi Matematis Siswa dengan Pendekatan Saintifik : Sebuah Perspektif Pendahuluan. *Jurnal Pendidikan Matematika (Kudus)*, 179–188.

Ningsih, A., Meilasari, V., & Darwanto. (2022). Pengaruh Model Pembelajaran Flipped Classroom terhadap Hasil Belajar Pola Bilangan Peserta Didik SMP Negeri 3 Kotabumi. *Jurnal Eksponen*, *12*(2), 45–54.

Noorhapizah, Nur'alim, Agusta, A. R., & Fauzi, Z. A. (2019). MENINGKATKAN KEMAMPUAN BERPIKIR KRITIS MELALUI KETERAMPILAN MEMBACA PEMAHAMAN DALAM MENEMUKAN INFORMASI PENTING DENGAN KOMBINASI MODEL DIRECTED INQUIRY ACTIVITY (DIA), THINK PAIR SHARE (TPS) DAN SCRAMBLE PADA SISWA KELAS V SDN PEMURUS DALAM 7 BANJARMASIN. *Prosiding Seminar Nasional Hasil Riset Dan Pengabdian*, *5 No. 2*.

Novitasari, F., Harun, L., Utami, R. E., & Padmi Susilawati. (2023). UPAYA PENINGKATAN HASIL BELAJAR MENGGUNAKAN MODEL PROBLEM BASED LEARNING PADA MATERI TURUNAN FUNGSI ALJABAR. *Jurnal Eksponen*, *13*, 7823–7830.

Rahman, I. N., Amin, S., & Setiani, H. (2022). Development Of LKPD Based On Contextual Teaching And Learning To Improve The Learning Result Of Class V SDN Karawaci 1. *Cendikia: Media Jurnal Ilmiah …*, *13*(2), 366–370.

Saputro, K. A., Sari, C. K., & Winarsi, S. W. (2021). Pemanfaatan Alat Peraga Benda Konkret Untuk Meningkatkan Motivasi Dan Hasil Belajar Matematika Di Sekolah Dasar. *Jurnal Basicedu*, *5*(4), 1735–1742.

Sari, A. M., & Rahayu, T. S. (2022). Pengembangan Media Pembelajaran Interaktif "Andromatika" Pada Materi Bilangan Untuk Meningkatkan Motivasi Belajar Peserta Didik Kelas Iv Sekolah Dasar. *Cendikia: Media Jurnal Ilmiah Pendidikan*, *13*(2), 297–306.

Sari, P. M. N., Parmiti, D. P., & Sukmana, A. I. W. I. Y. (2020). Efektivitas Hasil Belajar Matematika Melalui Model CTL Berbasis Masalah Terbuka Siswa Kelas IV SD. *Jurnal Ilmiah Sekolah Dasar*, *4*(2), 248–256.

Setyowati, L., & Inah, E. N. (2020). Penerapan Model Number Head Together (NHT) dalam Meningkatkan Hasil Belajar Matematika pada Siswa Sekolah Dasar. *Diniyah : Jurnal Pendidikan Dasar*, *1*(1), 23. https://doi.org/10.31332/dy.v1i1.1818

SINAGA, S. B. U. L. I. (2022). *PENERAPAN MODEL PEMBELAJARAN MEANS ENDS ANALYSIS (MEA) UNTUK MENINGKATKAN KEMAMPUAN PEMECAHAN MASALAH MATEMATIKA SISWA KELAS VIII SMP SWASTA HARVARD MEDAN TAHUN PELAJARAN 2021/2022*.

Suprayogo, R., Sutrisno, S., & Supandi, S. (2019). Eksperimentasi Pendekatan RME terhadap Prestasi Belajar Matematika Ditinjau dari Motivasi Belajar Siswa. *Media Penelitian Pendidikan: Jurnal Penelitian Dalam Bidang Pendidikan Dan Pengajaran*, *13*(2), 189–201.

Tan, O.-S. (2021). *Problem-based learning innovation: Using problems to power learning in the 21st century*. Gale Cengage Learning.

TURROSYIDAH, A. (2022). *PENINGKATAN KEMAMPUAN PEMECAHAN MASALAH MATEMATIS DAN SELF-CONFIDENCE SISWA SMP MELALUI MODEL PEMBELAJARAN DISCOVERY LEARNING*. FKIP UNPAS.

WIBOWO, F. A. (2023). *PENGEMBANGAN LKPD BERBASIS REALISTIC MATHEMATICS EDUCATION BERBANTUAN LIVE WORKSHEETS UNTUK MENINGKATKAN KEMAMPUAN BERFIKIR KRITIS*

MATEMATIS SISWA PADA PEMBELAJARAN MATERI BANGUN RUANG SISI DATAR DI KELAS VIII SMP. UNIVERSITAS JAMBI.

Winarso, A., Siswanto, J., & Roshayanti, F. (2023). Pengembangan perangkat pembelajaran pada materi interaksi makhluk hidup dengan lingkungan ditinjau dari kemampuan pemecahan masalah dan berfikir kritis siswa SMP Negeri 2 Moga. *Jurnal Kualita Pendidikan*, *4*(1), 16–27.

Zahra, F. A., & Hakim, D. L. (2022). Kemampuan Berpikir Kritis Matematis Siswa SMA Pada Materi Bangun Ruang Sisi Datar Pasca Pembelajaran Jarak Jauh. *Teorema: Teori Dan Riset Matematika*, *7*(2), 425–438.