Jurnal Theorems (*The Original Reasearch Of Mathematics*)
Volume 9, Nomor 1, Juli 2024
URL: http://ejournal.unma.ac.id/index.php/th

e-ISSN: 2528-102X
p-ISSN: 2541-4321

EFFORTS TO IMPROVE LEARNING ACTIVITY AND LEARNING ACHIEVEMENT IN MATHEMATICS THROUGH THE DISCOVERY LEARNING MODEL IN CLASS IV-B OF STATE ELEMENTARY SCHOOL 2 PLIKEN

Nazza Fauzan Khuriyathusyfah[1*], Arifin Muslim [2]
Elementary School Teacher Education Study Program, Faculty of Teacher Training and Education
Muhammadiyah University Purwokerto

Corresponding Author *:*
Nazza Fauzan Khuriyathusyfah,
Elementary School Teacher Education Study Program,
Muhammadiyah University Purwokerto,
Jl. KH Ahmad Dahlan, Hamlet III, Dukuhwaluh, Kembaran District.
Regency. Banyumas. Central Java. Indonesia.
E-mail: nazzasyfah11@gmail.com
Contact Person: 081-390-835-629

Article Information:
Accepted 2024-06-13
Revised 2024-07-20
Accepted 2024-07-27

How to Cite:
Khuriyathusyfah, N.F.., Muslim, A. (2024). Efforts to Improve Learning Activity and Mathematics Learning Achievement Through the *Discovery Learning Learning Model* in Class IV-B of SD Negeri 2 Pliken. *Journal of Theorems (The Original Research of Mathematics* , *9* (1), 170-181.

ABSTRACT

This study aims to describe the level of learning activity and mathematics learning achievement through the discovery learning model in understanding the concept of measuring the area and circumference of squares and rectangles assisted by unit square media. This study adopts the Classroom Action Research (CAR) methodology, which consists of four phases: planning, implementation of actions, observation, and reflection, which are carried out in two cycles, each consisting of two meeting sessions. The subjects in this study were 24 students from class IVB. Data collection methods include observation, giving questionnaires, tests at the end of each cycle, interviews, and documentation. The findings show a significant increase in active students, increasing from 61.79% with the criteria of "quite often active" in cycle I to 82.15% with the criteria of "very often active" in cycle II. In addition, there was a significant increase in students' mathematics learning achievement, with the average classical score increasing from 69.41% in cycle I to 85.16% in cycle II, accompanied by an increase in the percentage level of classical learning completion from 64.58% in cycle I to 89.58% in cycle II. Thus, the integration of the discovery learning model assisted by unit square media shows an increase in learning activity and mathematics learning achievement of class IVB students at SD Negeri 2 Pliken.

Keywords: Learning Activity, Learning Achievement, *Discovery Learning Model.*

INTRODUCTION

Mathematics is a science that is present in every aspect of human life. In the opinion of (Anggraini, Y., 2021) Mathematics is a deductive, formal, abstract science and uses symbolic language. In everyday life, mathematics is often used to solve various problems and also serves as the basis for various scientific disciplines. Therefore, it is very important for children to be taught Mathematics subjects from the start of elementary school education. Learning mathematics in elementary school (SD) is an interesting learning area to develop, because children at elementary school age are in the development phase of thinking and learning.

e-ISSN: 2528-102X
p-ISSN: 2541-4321

Mathematics learning at the fourth grade of elementary school, students' thinking processes are still related to concrete objects. Students can learn and accept what they get with concrete objects and experiences that students have. This is a stage known as concrete operations at the age of 7 to 11 years. Citing this theory (Anggreani et al., 2020) emphasizes that elementary school students often face challenges when learning abstract mathematical concepts. Therefore, it is very influential to develop these concepts by using real examples to facilitate student understanding, along with the development of their understanding through direct experience from the students themselves.

Based on research observations conducted at IV-B SD N 2 Pliken, it appears that some students are still not active in participating in learning. Observations and interview stages revealed several fundamental problems, such as some students not focusing on the teacher, learning is still centered on the teacher, lack of student involvement in lessons, and students' unwillingness to ask questions or provide responses to class discussions. In fact, during group discussions only 1 or 2 students are active, with the majority of students not carrying out according to the teacher's instructions or not participating at all. Without proper handling, this can result in student ineffectiveness in the ongoing learning process.

In addition to identifying challenges in the learning process, researchers also analyzed student performance in Mathematics learning that most of the Mid-Semester Summative Assessment (STS) Values for class IV-B were still below the Learning Objective Completion Criteria (KKTP) which was set at 70. As many as 15 students or 62.5% of the total students had not achieved Mathematics completion. Only 9 students or 37.5% achieved completion. Anticipating this problem, efforts to improve teaching and learning activities are needed to improve their mathematics learning achievement values.

Overcoming these challenges requires the application of appropriate learning models during the teaching process which are expected to contribute greatly to the achievement of learning outcomes. Therefore, based on the problems, researchers are looking for solutions to improve students' learning activity and mathematics learning achievement by implementing the discovery learning model. According to (Utami et al., 2021), the discovery learning model can empower children to actively participate by discovering and learning on their own, the aim is to reach more knowledge so as not to depend on others, either individually or collaboratively with peers which is continued in the presentation of their findings to the front of the class.

This methodological approach has been proven to increase student activity in the learning process and encourage efforts to improve student learning achievement. This is in accordance with the opinion of (Yuvita, K., 2021) that using the *discovery learning model* students will be trained to construct their own knowledge by emphasizing understanding concepts through experiments with study groups so that it is hoped that student activity and learning outcomes will increase, according to (Aryani, S., 2024) mathematics learning achievement is an indicator Students' success in the knowledge they

e-ISSN: 2528-102X
p-ISSN: 2541-4321

have mastered after going through the learning process at school is represented through scores from test results. Through the application of this *discovery learning* model, students not only retain the material studied more effectively but also develop critical thinking skills, evaluation abilities, and problem solving sharpness. According to (Prasetyo, et al., 2021) outlines the procedural steps of the *discovery learning model*, which include: (1) stimulation, (2) identification problems, (3) collecting data, (4) processing data, (5) verification, and (6) generalization.

Learning through the application of the discovery learning model, students are increasingly active in the learning process. (Nindya, E., 2019) learning activity is the active involvement of children in the learning mechanism, activity will foster a dynamic educational environment where students are encouraged to ask questions, express opinions, and seek clarification. According to Sudjana (Putri & Firmansyah, 2019) stated that indicators of student learning activity include: (1) participating in their learning assignments; (2) involved in problem solving; (3) asking other students or teachers when facing difficulties regarding understanding the problem; (4) involved in group discussions according to teacher instructions; (5) training themselves to solve questions or problems; (6) evaluating their abilities; (7) trying to find more information to solve problems; (8) applying the knowledge gained to complete tasks. Along with the increase in student learning activity, mathematics learning achievement is expected to increase.

The effectiveness of the discovery learning model can be increased through the integration of appropriate learning media. The use of learning media plays an important role in the teaching process, with the selection of the right media can also be a determining factor in the success of learning. According to (Arsyad, 2020: 10) defines learning media as everything that is used to provide information during learning, which aims to increase student interest and participation in mathematics lessons. Unit Square Media represents one of the learning aids used in this study. According to (Fitria & Budiyono, 2021) unit square media helps improve students' numeracy skills in elementary school mathematics lessons, this unit square media is made of mica or transparent plastic, in the form of a square area that is given lines so that it forms square squares, each square is the same size.

Related to previous research by (Daningtyas et al., 2023) stated that the process of learning mathematics with unit square media can improve learning outcomes and students' abilities in calculating the area and circumference of squares and rectangles. Further research (Marshella, A. D. et al., 2023) found an increase in the process of student learning outcomes in the use of unit square media in mathematics learning. This is in line with the opinion of (Abrar & Mahmudah, 2023) that learning media has an important role in helping students understand abstract and difficult mathematical concepts. Therefore, the existence of media can provide concrete evidence that is in accordance with what is conveyed by the teacher and is used to improve students' mathematics learning achievement.

Based on the description, the researcher will utilize the discovery learning model assisted by unit square media as an effort to improve learning activity and mathematics learning achievement. This study aims

e-ISSN: 2528-102X
p-ISSN: 2541-4321

to describe how the discovery learning model can improve learning activity and mathematics learning achievement of students in elementary schools. In addition, the benefits of this study help teachers hone their abilities to improve the quality of teaching, especially in mathematics subjects.

METHODS

The type of research used in this research is Classroom Action Research (PTK). The aim of this research is to increase understanding of learning activities in the classroom . In research involving teachers and students of class IV-B SD Negeri 2 Pliken in the second semester of the 2023/2024 academic year. This research was carried out over one month from February to March. With 2 cycles, each cycle consisting of 2 meetings with two teaching hours lasting 35 minutes. The subjects in this research were students and female students in class IV-B at SD N 2 Pliken for the 2023/2024 academic year, with a total of 24 people, 11 male students and 13 female students. This research model adapts research from the Kemmis & Mc pattern. Taggrat with the Classroom Action Research model through 4 stages starting from planning, carrying out actions, observing until finally reflecting.

Collection technique The data in this research uses test techniques in the form of evaluation question sheets to measure student success after learning , and non-test techniques in the form of activity observation sheets for students and activity sheets for teachers, student learning activity questionnaire sheets. Apart from that, there were interview sessions and activity documentation. The indicator of success for this research is that the students in class IV-B of SD N 2 Pliken have increased their average level of achievement The learning activity of students in the "good" category reaches at least 75% of the total number of students. The indicator of success in mathematics learning achievement is reaching at least 75% of students who are able to meet the predetermined Learning Objective Achievement Criteria (KKTP) score of 70.

RESULTS AND DISCUSSION

Learning Activity

Student learning activity was measured using a learning activity questionnaire given to each student in class IV-B. The questionnaire contains 20 questions containing positive and negative statements to understand whether the student is active or not in class. The results of the recapitulation of the learning activity questionnaire after implementing the *discovery learning model* assisted by unit square plot media in class IV-B students at SD Negeri 2 Pliken in get results as follows;

Table 1. Results of Analysis of Student Learning Activeness

Information	Percentage of Average Score for Learning Activeness	Criteria
Cycle I	61.79%	Active quite often
Cycle II	82.15%	Very often active

Based on Table 1, there is a significant increase in student learning activity, as indicated by the increase in scores in each cycle. In Cycle I, the average score reached 61.79%, symbolized by the criteria

e-ISSN: 2528-102X
p-ISSN: 2541-4321

"quite often active", while in Cycle II, this figure increased to 82.15%, marked by the criteria "very often active" has achieved the success indicator so that learning with the discovery learning model assisted by unit square media can provide an increase in student learning activity. This is because with a series of learning, students not only write and listen to explanations from the teacher but students also communicate and play an active role during the learning process. In accordance with the opinion of (Ratnasari et al., 2024) that square media helps students to actively ask questions or discuss to find and calculate the area and circumference of squares and rectangles because this media is very easy to find in everyday life.

In cycle I, the level of learning activity is quite low because students have not achieved the indicators of learning activity such as students are less active in asking questions or responding to questions asked by the teacher. However, the teacher has shown his responsibility well and shown patience in using the discovery learning model assisted by unit square media where at each meeting students are given the challenge to calculate the area of squares and rectangles with the help of unit square media making students able to actively ask questions with their fellow group members by discussing.

It has been proven that there has been an increase in the number of students who follow the teacher's instructions attentively. This finding is in line with (Suwanto, E., 2021) states that if the principles of *the discovery learning model* are taught, the teacher only acts as a guide by giving students the opportunity to be active in accordance with the goals that have been designed. Even though many students pay attention to the teacher and are quite actively involved in learning, there are still some students who show hesitation in responding to the teacher's questions and have difficulty articulating their critical thinking processes when dealing with problem solving tasks.

In this first cycle, the researcher did not see the aspect of good learning, there were several obstacles, namely the researcher did not provide enough motivation to students during group and individual activities, the researcher's shortcomings did not optimally create an effective learning process so it was important to improve it again in order to obtain better results for the next cycle.

In the second cycle, the researcher succeeded in correcting the lack of grades obtained in the first cycle. From the beginning of the research activity, the researcher had provided a good stimulus for students to be active in the learning process , by instilling motivation, students became more active in asking questions. Researchers can also provide learning scenarios that are appropriate to the teaching modules that have been prepared. Not only that, researchers are also good at providing a conducive and better situation than the previous cycle.

e-ISSN: 2528-102X
p-ISSN: 2541-4321

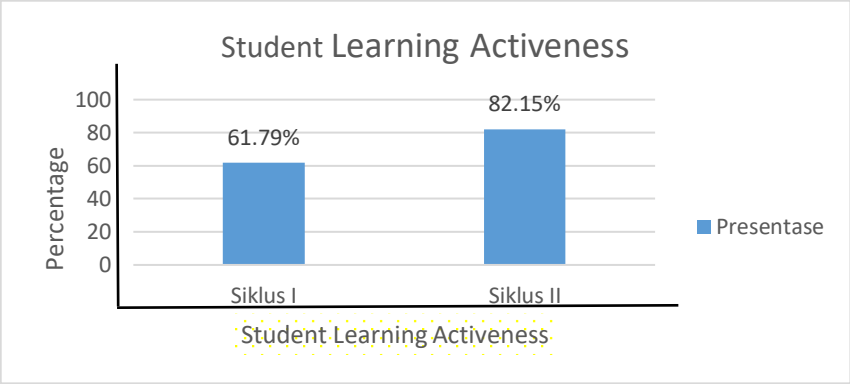

Figure 2. Histogram of Student Learning Activeness

The implementation of the action in the second cycle, as described in the illustration above, has increased the level of student activity throughout the teaching and learning phase. Students began to ask if there was material that was not understood, then students began to understand the mathematics material explained by the teacher and this conducive learning environment has facilitated active participation and learning focus among students in group discussions to find formulas and calculate the perimeter of squares and rectangles with the help of unit square media, thus improving the overall teaching and learning experience. When they learn to use the discovery learning model, it has been proven that during the discussion and presentation process more than half of the class of students take turns being active, this indicates that there is a level of student confidence that increases more actively discussing problems in learning and responding to situations during learning.

The expected student activity in the learning process requires balanced interaction. This interaction includes communication between teachers and students and between students, with the aim of creating multidirectional communication in learning, if students who are active in learning will encourage them to better understand the knowledge they are learning. This is in line with (Sispariyanto et al., 2019) who argue that knowledge observed by oneself will increase their enthusiasm and activity in the teaching and learning process through the application of the discovery learning model. Through the formation of study groups, students are given the opportunity to actively convey their thoughts to their friends. This helps them see things from a different perspective.

Based on the explanation above, the researcher assessed that the activeness of class IV-B students of SD N 2 Pliken in learning had reached a success indicator of 75%. Research presented by (Nopianur, et al., 2023) explains that there is an increase in student learning activity from cycle I to cycle II. This is in line with the opinion of (Rachmawati et al., 2021) who stated that the discovery learning model is a learning model that provides students with direct experience through practice so that students will discover for themselves the information being taught.

e-ISSN: 2528-102X
p-ISSN: 2541-4321

Learning achievement Student

In measuring learning achievement after each cycle ends, students undergo an evaluation question test for 15 minutes. Further details regarding student test results for Cycle I and Cycle II are presented in the following table :

Table 2. Results of Mathematics Learning Achievement Analysis

No.	Information	Cycle I		Cycle II	
		Meeting 1	Meeting II	Meeting I	Meeting II
1 .	Learning Achievement Criteria	70	70	70	70
2 .	Total Students	24	24	24	24
3 .	Total Students Completed	14	17	21	22
4 .	Total Students Not Completed	10	7	3	2
5 .	Average	65.16	73.66	82.5	87.83
6 .	Classical Average	69.41		85.16	
7 .	Mastery learning	58.33%	70.83%	87.5%	91.66%
8.	Completeness of Classical Learning	64.58%		89.58%	

Based on Table 1, there is a significant increase in student learning activity, as indicated by the increase in scores in each cycle. In Cycle I, the average score reached 61.79%, symbolized by the criteria "quite often active", while in Cycle II, this figure increased to 82.15%, marked by the criteria "very often active" has achieved the success indicator so that learning with the discovery learning model assisted by unit square media can provide an increase in student learning activity. This is because with a series of learning, students not only write and listen to explanations from the teacher but students also communicate and play an active role during the learning process. In accordance with the opinion of (Ratnasari et al., 2024) that square media helps students to actively ask questions or discuss to find and calculate the area and circumference of squares and rectangles because this media is very easy to find in everyday life.

Cycle I, the level of learning activity is quite low because students have not achieved the indicators of learning activity such as students are less active in asking questions or responding to questions asked by the teacher. However, the teacher has shown his responsibility well and shown patience in using the discovery learning model assisted by square media where at each meeting students are given the challenge to calculate the area of squares and rectangles with the help of square media making students able to actively ask questions with their fellow group members by discussing.

Even though several activities have been completed, students still have not achieved their goals in understanding the material taught. Therefore, to increase students' enthusiasm for learning and working on LKPD through discussions, stronger assessments and interactive engagement with the learning environment and peers is very important as a means of cultivating their questioning skills and abilities. This is in line with the opinion of (Nurlitasari, A., & Badarudin, 2019) that the *discovery*

e-ISSN: 2528-102X
p-ISSN: 2541-4321

learning model forces students to obtain material themselves, requiring students to ask the teacher and other students.

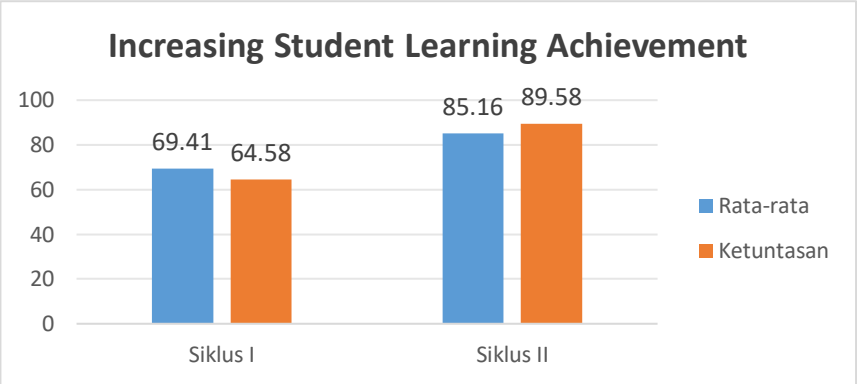

Figure 2. Histogram of Improvement in Mathematics Learning Achievement

Figure 2 shows that students' abilities in the teaching and learning process are getting better, marked by an increase in student learning achievement in teaching and learning using the *discovery learning model* in each learning cycle. The increase in scores in cycle II can be seen from how the use of *discovery learning* and unit square plot media is effective in helping students achieve learning goals. Student learning achievement in cycle II increased by obtaining an average classical score of 85,16% and classical learning completion increased by 89.58%. There are still 2 students who have not finished because these students have difficulty focusing on learning, making it difficult to complete LKPD and evaluation questions.

The success in cycle II was also due to the increased activeness of student learning during group discussions, students worked well together in solving problems in the LKPD. This activeness is one form of achieving good learning achievement, students are able to collect their knowledge independently, both individual and group assignments, and students are more courageous in asking questions to the teacher and are able to solve existing problems and are able to create a more enjoyable learning experience. In accordance with the opinion of (Handayani, T., 2021) that the discovery learning model can provide the widest possible opportunity to bring out creativity, collaboration, and communication such as in activities: assignments, students find and present their findings in front of their friends.

The use of square unit media in the learning process through the discovery learning model has changed the dynamics of the class to be more interesting. Students are invited to learn in groups, complete challenges, and solve problems faced. In addition, the use of this media also has a significant positive impact, especially in the development of students' motor skills, such as when they do activities such as cutting, pasting, and arranging. This is what helps students to be more active in discussing determining the right gaps in arranging them. This is supported by the opinion of (Devi, 2021) through square unit media, it can help students to calculate area and circumference by counting unit squares,

e-ISSN: 2528-102X
p-ISSN: 2541-4321

with square unit media teaching aids, it can concretize students because it is practiced directly by students in finding their own knowledge and practicing finding flat shape formulas using square media, real concepts about the area and also the circumference of squares and rectangles are easier to understand and have a positive impact on them so that they can improve their mathematics learning achievement.

Based on the results of the research analysis above, it can be shown that the *discovery learning model* is able to improve mathematics learning achievement from cycle I to cycle II because this model is applied in accordance with the syntax or stages of learning activities which consist of stimulation then identification problems then collecting the data, then processing data it. The data verification is then proven to be authentic and finally generalization (Yulianto & Muryaningsih, 2022). Carrying out initial activities by applying the *discovery learning model* to class IVB students, the teacher divides students into 5 to 6 groups before starting teaching and learning activities , then students are given Student Worksheets (LKPD) and assisted by unit square plot media to support students' understanding. regarding the material to be taught. Students will think , pay attention to the teacher, and encourage students to read books, which is what is called fostering student curiosity. Then the teacher will give the study group the opportunity to complete the LKPD by first identifying the problem and then aligning it with a temporary answer to the problem question.

One of them is to answer the problem, students must collect a lot of real information to prove whether the answer is in accordance with reality or not through the help of the unit square media. Then students will process the data by applying the lesson concept that has been designed by the teacher by providing LKPD with the help of the unit square media. The results are analyzed in student worksheets. Then students together with their groups will present the results achieved by students and provide proof to all friends in the class. Through the help of the unit square media, students can prove the results of the area and circumference of flat shapes. At this proof stage, the teacher asks students to work on a problem related to the material being taught.

All students have completed the questions given, the teacher discusses all the correct answers does it together with the students. Students and teachers together calculate the area and perimeter of squares and rectangles from the problems contained in the questions with the help of square media. Furthermore, the teacher asks students to look recheck the answers on the LKPD whether they are correct or wrong, then the teacher provides a conclusion from the teaching and learning activities that have been carried out. The final activity in this study was that students worked on evaluation questions totaling 5 essay questions. The purpose of this evaluation question is to measure students' abilities after implementing the discovery learning model in achieving learning objectives.

The use of the discovery learning model in the material on measuring the area and circumference of flat shapes in class IV-B SD N 2 Pliken can increase learning activity because in the learning process

e-ISSN: 2528-102X
p-ISSN: 2541-4321

students are encouraged to actively participate in working together with group members to think critically to find and find data using media such as unit squares and present the results of group discussions in front of the class. So the interactions that occur in this process not only deepen students' understanding of the concepts taught by the teacher but make learning more meaningful because students can hone their ability to solve problems and also make them more active in learning in class because the teacher does not convey the material as a whole so that students ask the teacher. This is in line with the opinion of (Ariastuti, B. A,. 2020) that effective interaction between teachers and students and with other students makes learning activities able to achieve a learning goal so that it has a significant influence on student learning outcomes.

Efforts to improve students' mathematics learning achievement are also influenced by teacher and student activities. This can be seen from the results of teacher observations of student learning achievement reaching an average of 67.38% in cycle I, then increasing in cycle II reaching 95.65%. Based on these results, the teacher has delivered the learning very well. In addition, student activity during the learning process using the discovery learning model in improving mathematics learning achievement can be seen from the results of student observations in cycle I, student activity is good in terms of paying attention to the learning process with an average percentage of 65% so it is important to improve it again in order to obtain better results, in cycle II there was an increase in student activity with a percentage of 87.5% of the learning process in cycle II students have succeeded in achieving targets in understanding the learning process.

When learning using the discovery learning model, one of the phases is data collection, when exploration takes place the teacher gives students the opportunity to collect as much relevant information as possible to prove whether the hypothesis is true or not, so that with the process of collecting data students are trained to be actively involved in finding and finding concepts of learning materials and training students to express their opinions to solve problems so that the knowledge gained will easily last a long time in students' memories. Therefore, the application of the discovery learning model with the help of unit square media can make the learning process centered on students so as to increase learning activity and mathematics learning achievement. This is in line with the results of previous research from (Saputra & Yohana, 2019) showing that discovery learning can increase mathematics learning activity and learning outcomes.

CONCLUSION

Classroom action research on class IVB students at SD N 2 Pliken has shown positive results in efforts to increase learning activity and mathematics learning achievement through the *discovery learning model* with the help of unit square plot media. After two teaching cycles, important progress was observed. The results of the learning activity questionnaire increased, where in cycle I the results were 61.79%, the criteria were quite often active, then the results in cycle II increased to 82.15%, the

e-ISSN: 2528-102X
p-ISSN: 2541-4321

criteria were very often active. There was also an increase in achievement in the first cycle, achieving learning completeness of 64.58% in the sufficient category, and in the second cycle, learning completeness experienced a significant increase, reaching 89.58%, obtaining a very good title. Therefore, the application of the *discovery* learning model in teaching mathematics, especially the material for measuring the area and perimeter of squares and rectangles with the help of unit square plot media, has an effect on the level of student activity in learning and has an impact on the mathematics learning achievement of fourth grade students at SD Negeri 2 Pliken. .

ACKNOWLEDGMENTS

The preparation of this Classroom Action Research (CAR) was inseparable from the prayers and support of the researcher's parents and the researcher's siblings. Collaboration and guidance from the supervisor, namely Mr. Arifin Muslim , as well as other great people who cannot be mentioned here one by one. Finally, to the researcher himself , a big appreciation for being willing to try this far and not giving up easily even at the lowest point when working on the final assignment of this thesis.

REFERENCE

Abrar, M., & Mahmudah, I. (2023). DEVELOPMENT OF DEVELOPMENT TOOLS FOR CALCULATING THE AREA & PERIFERENCE OF UNIT SQUARES TO MAKE MATHEMATICS LEARNING EASIER. Bumi Persada Education Journal, 2(2), 9-19 .

Anggraeni, ST, Muryaningsih, S., & Ernawati, A. (2020). Analysis of factors causing difficulties in learning mathematics in elementary schools. *Journal of Basic Education Research (JRPD)* , *1* (1), 25-37.

Anggraini, Y. (2021). Analysis of teacher preparation in teaching mathematics in elementary schools. *Basicedu Journal* , *5* (4), 2415-2422.

Ariastuti, BA (2020). The Relationship between Educational Interaction and Interest in Learning Mathematics in High Grade Students at SD Muhammadiyah Polanharjo Klaten in the 2019/2020 Academic Year. *GENIUS (Journal of Education Policy and Elementary Education Issues)* , *1* (1), 1-6.

Arsyad, Azhar. (2020). Instructional Media. PT. Raja Grafindo Persada.

Aryani, S. (2024). APPLICATION OF THE DISCOVERY LEARNING MODEL TO IMPROVE REASONING AND LEARNING ACHIEVEMENT. *Dyadic: Scientific Journal of Educational Technology* , *14* (1), 240-250.

Daningtyas, Z. K., Istianah, F., & Majid, M. A. (2023). Improving Learning Outcomes in Calculating the Area of Squares and Rectangles in Non-Standard Units Through Square Unit Plot Media for Grade III Students of SDN Sidodadi. Innovative: Journal Of Social Science Research, 3(2), 3497-3509.

Handayani, T. (2021). Discovery Learning Learning Model on Area and Perimeter of Flat Shapes for Class IV Elementary School. *Journal of Prospective Learning* , *6* (1).

Fitria, IK, & Budiyono, H. (2021) *Use of Unit Square Plot Media USE OF UNIT SQUARE PLOT MEDIA TO IMPROVE LEARNING OUTCOMES IN MATHEMATICS MATTER AREAS AND CIRCUMFERENCES OF FLAT SHAPE CLASS III SDN TROPODO 1 SIDOARJO* .

e-ISSN: 2528-102X
p-ISSN: 2541-4321

Marshella, A. D., Nuroso, H., & Prasetyowati, D. (2023). The Use of Unit Square Media to Improve Cognitive Learning Outcomes of Flat Shape Area Material in Grade III Students. Tambusai Education Journal, 7(2), 8331-8340.

Nindya, E. (2019). Increasing Activeness and Learning Outcomes Through the Discovery Learning Model. Journal of Elementary School Education, 4(2).

Nopianur, Y. A., Waluyati, S. A., & Saputra, A. (2023). Improving Student Learning Activeness through Discovery Learning Model in PPKn Subject. Melior: Indonesian Journal of Education and Learning Research, 3(1), 20-27.

Nurlitasari, A., Badarudin, B., & Eka, KI (2019). Efforts to Improve Student Questioning Skills and Learning Achievement through the Discovery Learning Model on the Theme 7 Events in Life in Class VB of SD Negeri 1 Kedungbanteng. *Journal of Educational Perspectives* , *13* (1), 1-11.

Putri, N. Y., & Firmansyah, D. (2019). The Relationship between Student Learning Activity and Learning Achievement. Proceedings of the National Seminar on Mathematics and Mathematics Education Sesiomadika.

Prasetyo, AD, & Abduh, M. (2021). Increasing Student Learning Activeness Through the Discovery Learning Model in Elementary Schools. Basicedu Journal, 5(4), 1717–1724.

Rachmawati, LA, Koeswanti, HD, & Sadono, T. (2021). Discovery Learning Model Assisted by Audio Visual Media to Increase the Activeness and Science Learning Outcomes of Elementary School Students. *Educative: Journal of Educational Sciences* , *3* (3), 770-776.

Ratnasari, N., & Mar'ah, S. (2024). THE INFLUENCE OF THE USE OF RECTANGULAR PLOT PROVIDERS ON LEARNING OUTCOMES IN MATHEMATICS THE PERIVERY AND AREA OF FLAT BUILDINGS.TULIP (Educational Scientific Writing): Journal of the Faculty of Teacher Training and Education, 13(1), 18-25.

Rizqiana, D. L. (2021). The Use of Square Plot Learning Media to Improve Learning Activities and Learning Outcomes of Planar Geometry Material. Kalam Cendekia: Scientific Journal of Education, 9(1).

Saputra, EW, & Yohana, Y. (2019). Application of the Discovery Learning (Dl) Learning Model to Increase the Activeness and Mathematics Learning Outcomes of Class V Elementary School Students. *Education Partners E-Journal* , *3* (11), 1465-1475.

Sispariyanto, E., Relmasira, S., & Hardini, A. (2019). EFFORTS TO INCREASE ACTIVITY AND SCIENCE LEARNING OUTCOMES THROUGH THE DISCOVERY LEARNING MODEL IN CLASS IV OF PRIMARY SCHOOL. Pendas Cakrawala Journal, 5. https://doi.org/10.31949/jcp.v5i2.1333

Suwanto, E. (2021). Application of discovery learning to increase activeness and learning outcomes of linear program material. Action Research Journal, 1(1), 40–46.

Utami, OD, Muryaningsih, S., & Yudiastuti, M. (2021) IMPROVING THE CREATIVE THINKING ABILITIES OF CLASS IV STUDENTS OF SD NEGERI 2 TLAGAYASA THROUGH THE DISCOVERY LEARNING MODEL.

Yulianto, A., & Muryaningsih, S. (2022). Application of the Discovery Learning Model to Improve Mathematics Learning Achievement in Flat Figure Material. *Journal of Basic Education Research (JRPD)* , *3* (2), 139.

Yuvita, K. (2021). Implementation of the Discovery Learning Learning Model to Increase the Activeness and Mathematics Learning Outcomes of Class V Students at SDK Maumere 2. *Global Edu* , *4* (1), 84-94.