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## **IMPROVEMENT OF MATHEMATICS LEARNING OUTCOMES MATERIAL ON FLAT WAKE THROUGH IMAGE MEDIA IN GRADE IV STUDENTS OF SD NEGERI 21 PULAU PUNJUNG FOR THE 2019/2020 ACADEMIC YEAR**

**UMI PUTRI YANTI<sup>1</sup>**

<sup>1</sup> SDN 21 Pulau Punjung, Kabupaten Dharmasraya  
Alamat e-mail umiputrisz86@gmail.com

### **Abstract**

*This research was motivated by a lack of motivation in learning mathematics in grade IV A SDN 21 Pulau Punjung. This research was conducted to increase student learning motivation in mathematics by using image media in class IV A SDN 21 Pulau Punjung. The method used is class action research conducted by planning, enforcement, and reflection. The analysis uses a picture of student learning outcomes seen from the absorbency and completeness of student learning described descriptively. The results showed an increase in mathematics learning outcomes through image media, as seen in the average student activity from cycle I reaching 51.01%, and experienced an increase in cycle II, reaching 54.5% to 83%. The increase is also found in students' learning absorption starting from procyclical, reaching 51.36% increased to 80.9% in cycle III.*

**Keywords:** *learning outcome, math.*

### **Abstrak**

Penelitian ini dilatarbelakangi oleh kurangnya motivasi dalam pembelajaran matematika di kelas IV A SDN 21 Pulau Punjung. Penelitian ini dilakukan dalam peningkatan motivasi belajar siswa pada mata pelajaran Matematika dengan menggunakan media gambar di kelas IV A SDN 21 Pulau Punjung. Metode yang digunakan adalah penelitian tindakan kelas yang dilakukan dengan perencanaan, penindakan, dan refleksi. Analisis menggunakan gambaran hasil belajar siswa yang dilihat dari daya serap, ketuntasan pembelajaran siswa yang dijabarkan secara deskriptif. Hasil penelitian menunjukkan bahwa terjadi peningkatan hasil pembelajaran matematika melalui penggunaan media gambar tampak pada rerata aktivitas siswa dari siklus I mencapai 51,01% mengalami peningkatan pada siklus II mencapai 54,5 % meningkat menjadi 83% pada . peningkatan juga terdapat pada daya serap siswa dalam pembelajaran dimulai dari prasiklus mencapai 51,36% meningkat menjadi 80,9% pada siklus III.

**Kata Kunci:** hasil belajar, matematika, media gambar

## **INTRODUCTION**

The learning process in formal schools, especially mathematics learning, is the primary learning in learning process. The role of mathematics learning contained in the 2013 curriculum is the development of logical thinking competencies, which are realized by activities, identification, experimentation, problem-solving, thinking patterns and mathematical models, as well as various communication media, realized through symbols, tables, graphs, and diagrams in describing ideas and ideas. The teacher's role is needed toto apply mathematics learning functions and objectives for students to develop dailydaily (Sidi, 2001).

Mathematics is challenging learning and improves students' thinking. However, this learning is assumed to be scary learning for students. We can see students' refusal to do mathematics, interest in learning mathematics, and low work results in mathematics learning. This learning mathematics shows that a teacher is required to make students comfortable with learning for students (Nuryati, 2022); (Latifah et al., 2022).

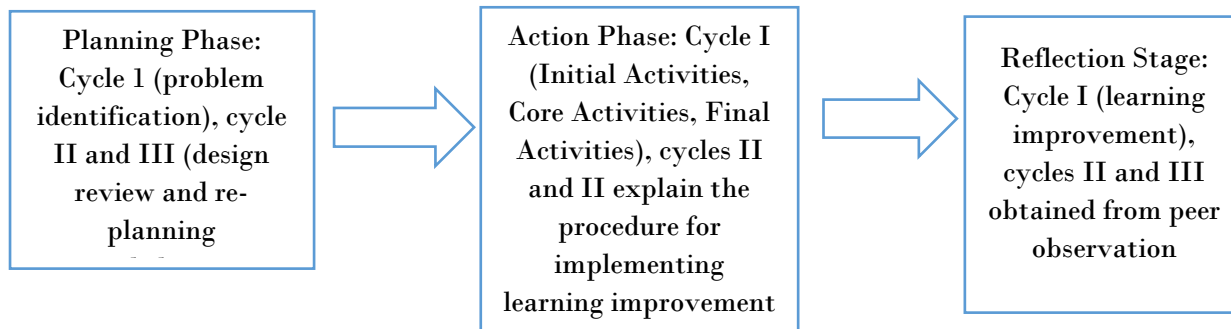
One of the mathematics learning activities in class IV A SD Negeri 21 Pulau Punjung, Pulau Punjung District, Dharmasraya Regency, has yet to be as expected. Based on what is obtained in Mathematics learning, especially in the material of the nature of the flat building, there are 25 students, approximately 28% (7 people) of students are categorized as obtaining a KKM score of 7.00. This condition arises from using methods that focus on conventional methods and have yet to use media or the lack of maximum use in the learning process (Setyawati et al., 2022). This learning process causes the average value of Mathematics in the aspect of flat building properties to be categorized as low, which is 55.40

Based on the results of reflection, it was identified that (1) teachers only fixated on conventional methods; (2) they lack maximum use of learning media; (3) the learning objectives have not been delivered; (4) they lack examples; (5) the teacher provides information too quickly to make it difficult for students to understand; (6) less able to allocate learning time; (7) lack of skills in managing or choosing learning models. The problems described above are the factors causing low student learning outcomes in learning Mathematics for grade IV A students of SD Negeri 21 Pulau Punjung, Pulau Punjung District, for the 2019/2020 school year.

Through the help of colleagues, improvements were made to the causes of the problems that occurred above through the use of visual media on flat building material. The use of image media can support the learning process so that it can affect student learning outcomes. Therefore, the use of image media in the delivery of learning materials can encourage students to be active and creative, easy to understand, and unborning, attract students to ask questions and students able to answer questions (Djamarah, 2014)( In addition, the use of image media can actively involve students in Mathematics learning directly aims to encourage students to actively interact in learning so that it has an impact on student learning outcome (Rahayu & Hidayati, 2018).

## RESEARCH METHOD

This study used research subjects in class IV A SDN 21 Pulau Punjung, Pulau Punjung District, Dharmasraya Regency, in the 2019/2020 learning year with 25 students, with 17 male and eight female students. The study was conducted from August 2 to October 25, 2019. This study used classroom action research covering cycles I, II, and III. The procedure is carried out by applying fractional calculation operations at the planning, enforcement, data collection, and reflection stages and the improvement cycle assisted by peers as observers. The following is a picture of the PTK flow diagram in this study.



Gambar 1. PTK flow diagram Mathematics Learning Outcomes Material Nn Flat Wake Through Image Media in Grade IV A to Elementary School Students

Data analysis is obtained from student learning pictures based on student learning absorption and completeness (Iskandar & Ibad, 2009). Analysis of student absorption is carried out using the following formulation.

DS = Remarks

DS = Absorbency

JB = Number of correct answers

BS = Number of question items (Ministry of Education and Culture 1994)

To determine students' absorption obtained from learning outcomes analyzed using categories such as Table 1 below.

Table 1. Intervals and categories of student absorption

Interval	Category
80 – 100	Very Good
70 – 79	Good
60 – 69	Enough
≤ 59	Less Enough

Source : Depdiknas 2006

Meanwhile, to analyze the completeness of student learning using the following formulation.

KI

Information:

KI: Percentage of student learning completeness

SS: Score obtained

SM: Maximum score (Ministry of Education, 2007)

## RESULT AND DISCUSSION

For the study in the subpoint, a theoretical study is needed to dissect the data used in the research. The following is an explanation of the theory used.

## Definition of Mathematics

Definition Mathematics is the science that describes numbers through basic operations, such as adding, multiplying, and dividing. However, mathematics is a scientific field that examines structuring patterns—alteration, and space. Informally, Mathematics can be known as the study of numbers and numbers. According to the formalist school, Mathematics is the study of structuring which is interpreted axiomatically through symbolic logic and notation. Another perspective states that Mathematics is a science of study that is the foundation of other sciences. As in ancient Egypt, the study of arithmetic was used to make pyramids, and the determination of rainfall, or mathematics, was the father of other sciences (Mu'minah, Halimatul Lim; Suryaningsih, 2020).

The characteristic of Mathematics is that it has an invisible object so that people can have difficulty solving it. Creativity is needed in understanding Mathematics as a way of coercion given by other friends so that it can motivate other students. In mathematics, learning is needed so that through the process of changing through practice steps carried out in a natural environment. Hilgard emphasizes that behaviour change is necessary for the learning process. The learning process in question is a psychological activity that appears in each student's change process and shows behaviour change (Utami, 2022).

The learning process can produce learning outcomes that can see completeness. Learning outcomes are students' skills in acquiring knowledge. Learning outcomes are outputs obtained based on the learning process. Learning outcomes can be seen based on the completeness of learning. The completeness of learning in question is that students can understand and absorb the material provided by the teacher well (Ramadhani, 2021); (Arif, 2013). For the learning process to be carried out well, it is done with learning media that create comfort. This learning is necessary to support learning activities. Learning media is a motivating medium in the learning process. Learning media can stimulate students' thoughts, feelings, and desires to motivate them in the learning process (Selvianiresa & Prabawanto, 2017); (Widayati, 2013). Learning that uses image media has advantages, such as clarifying learning material through objects and conveying information in the form of messages and ideas.

This illustrated media can also impact students' learning outcomes (Hendrawati, 2020);(Aji, 2016). The visual media in question is available to represent learning material used to be included in mathematics learning. This picture media is a form of media used in learning to support teachers in providing instructional objectives because picture media can describe experiences so that there is an improvement in the quality of learning and student learning outcomes (Arnita, 2017). Using picture media can foster students' learning motivation, interact directly with other students and their teachers, and increase student learning skills in class so that students can be understood well (Ernanda, 2019). In addition, teaching and providing learning materials related to problem-solving through image media can help students have a critical mind. Pictorial media provide experience to

students through graphical objects displayed to improve their ability to understand the material that requires space, time and objects that are not possible to bring into the classroom (Harahap, 2016); (Agustyani et al., 2022).

The results and data analysis discussion include cycles I, II, and III meetings through planning, implementation, observation, and reflection. Then continued with cycle III through meetings conducted in class with enforcement, application, observation, and assessment, and reflection was carried out, not face-to-face. The following results of cycles I, II, and III are described.

The steps taken to analyze the data are:

1. Compile data on student learning outcomes from the initial study, the first, second, and third cycles.
2. Data is arranged in tables to make it easier to observe the progress of the improvement process.
3. Create a table of learning completeness and mastery of the material.
4. Create a student activeness table.

The acquisition value of more than 70 learning outcomes is declared complete learning. In contrast, 70 and below are declared incomplete learning—the results of learning improvements from the initial study, the first, second, and third cycles.

### Cycle I

The learning outcomes obtained based on the provision of flat building material through the use of pictorial media, namely

Table 1. Math Scores of Class IV A Students

Cycle	KKM	The Lowest	The Highest	Modus	Average
Pra-cycle	70,00	25	85	50	55,40
Cycle I	70,00	30	85	50	56,60

In the table, it can be seen that in the first cycle, the average score of students was low, whereas at the meeting, it was 56.60. While the absorption of students in cycle one can be seen below.

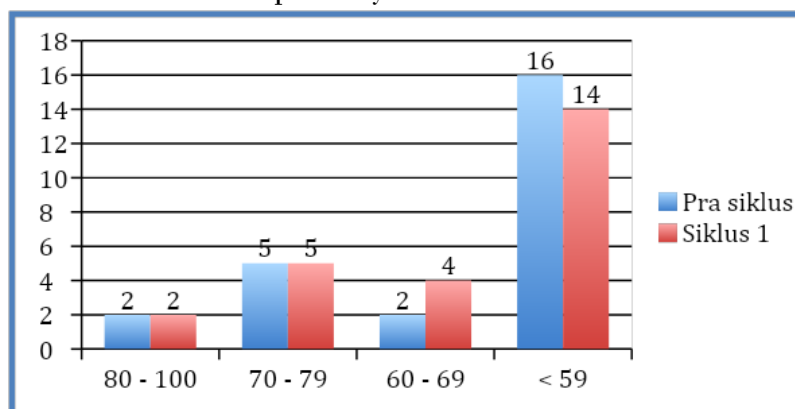


Table 2. Student absorption in Cycle I

No	Interval	Student absorption	
		Pra-cycle	Siklus I
1.	Baik sekali (80 - 100)	2 (8%)	2 (8%)
2.	Baik (70 - 79)	5 (20%)	5 (20%)
3.	Cukup (60 - 69)	2 (8%)	4 (16%)
4.	Kurang (< 59)	16 (88%)	14 (56%)
Total		25 (100%)	25 (100%)
Average		55,40	56,60

The table above shows that in the precycle, the average absorption of students was still 55.40, then rose slightly in cycle 1, which was 56.60. For details, it can be illustrated in the graph below.

Graphs 1. Cycle I Math Scores



## Cycle II

Learning outcomes through flat building materials using image media are obtained with the completion of student learning

Table 3. Mathematics Score Data of Class IV A Students

Cycle	KKM	The Lowest	The Highest	Modus	Average
Pra-cycle	70,00	25	85	50	55,40
cycle I	70,00	30	85	50	56,60
cycle II	70,00	45	90	65	71,60

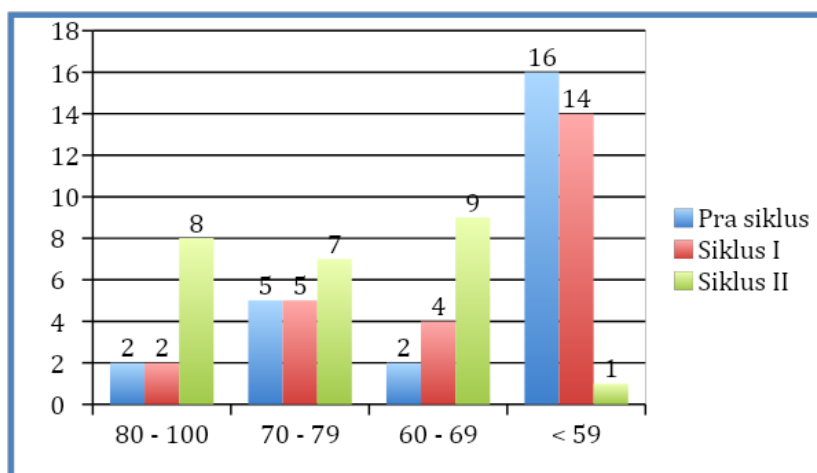
The table explains that cycle II obtained an average value of an increase from cycle I. Based on cycle I, as much as 56.60 and an increase in cycle II, 71.60. While the absorption of students in cycle II appears in the table below.

Table 4. Student absorption in Cycle II

No	Interval	Student absorption		
		Pra-cycle	Cycle	
			I	II
1.	Very good (80 - 100)	2 (8%)	2 (8%)	8 (32%)
2.	Good (70 - 79)	5 (20%)	5 (20%)	7 (28%)
3.	Enough (60 - 69)	2 (8%)	4 (16%)	9 (36%)
4.	Less Enough (< 59)	16 (88%)	14 (56%)	1 (4%)
Total		25 (100%)	25 (100%)	25 (100%)
Average		55,40	56,60	71,60

Table 4 states that the average precycle absorption of students was obtained as much as 55.40, then in cycle I began to increase to 56.60, and there was an increase in cycle II, which was 71.60. For clarity, appear in the following graph.

Graph 2. Mathematics Scores of Cycle II Students



### Cycle III

After redesigning the learning improvement in terms of cycle II, the third cycle met the completeness criteria set by 25 students. The average score of students has also improved. Then it is obtained as below.

Table 5. Mathematics Value Data of Class IV A Students Cycle III

Cycle	KKM	The Lowest	The Highest	Modus	Average
Pra-cycle	70,00	25	85	50	55,40
Cycle I	70,00	30	85	50	56,60
Cycle II	70,00	45	90	65	71,60
Cycle III	70,00	70	100	80	84,80

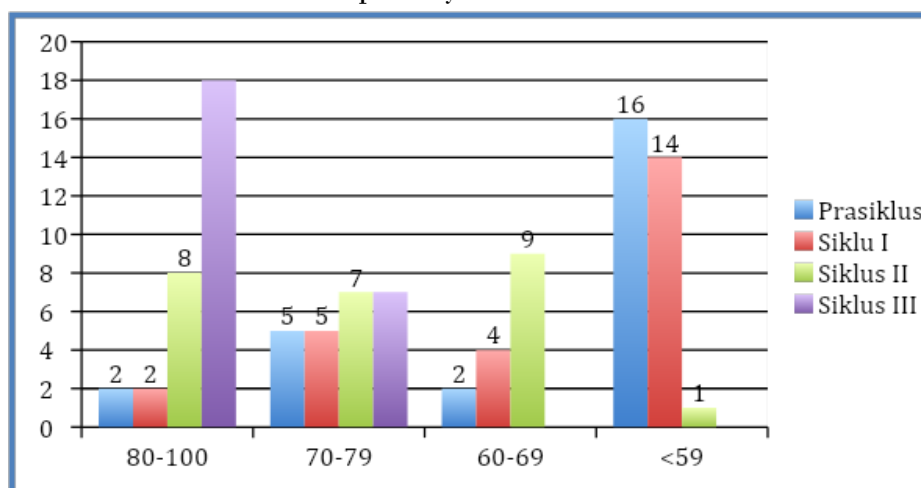
The table above shows that in cycle III, the average value increases more than in cycles one and II, where the value is 84.80. While the absorption of students in cycle III can be seen below.

Table 6. Student absorption in Cycle III

o	Interval	Student absorption			
		Precycle	Siklus		
			I	II	III
1	Very Good (80 - 100)	2 (8%)	2 (8%)	8 (32%)	18 (72 %)
2	Good (70 – 79)	5 ( 20% )	5 ( 20% )	7 (28%)	7 (28%)
3	Enough (60 – 69)	2 ( 8% )	4 (16%)	9 (36%)	-
4	Less Enough (< 60)	16 (88%)	14 (56%)	1 (4%)	-
Total		25 (100%)	25 (100%)	25 (100%)	25 (100%)
Average		55,40	55,60	71,60	84,40

The table shows that in the precycle, the average absorption power was obtained as much as 55.40, then in cycle III, it increased to 84.40 from cycle I 56.60. There was an increase in cycle II by as much as 71.60, shown in the following graph.

Graph 3. Cycle III Math Values





Data analysis based on student activities in participating in mathematics learning is shown in the following table.

Table 7. The results of the analysis of student activities in learning through the use of illustrated media cycle I

No	Observed student activity	Cycle I Student Activity Value
1.	Observing images	68%
2.	Working on LKS	100%
3.	The courage to ask	32%
4.	Answer questions	12%
Average		51,20%
Category		Less enough

Table 7 shows that the average activity of 56.60 second-cycle students is categorized as less. Table 8. The results of the analysis of student activities in learning through the use of pictorial media in cycle III

No	Observed student activity	Average Student Activity in Cycle II
1.	Observing images	92%
2.	Working on LKS	100%
3.	The courage to ask	72%
4.	Answer questions	88%
Average		84%
Category		Very good

### Discussion of Research Results through Learning Revision

#### Cycle I

student learning outcomes in the table, the initial data's average value was 55.40. Improvements were made in the first cycle using image media, and the average value of student learning increased to 56.60. For grades per individual according to the completeness criteria, namely 70.00, in the initial data, only seven out of 25 students were completed, and 18 other students were not. In the first cycle, no completed students were still the same as many as 18 students.

This learning outcome needs to be improved because many students must complete following the established KKM. For this reason, in the following learning activity, efforts are made to use learning media as effectively as possible so that students who learn feel happy and easily accept lessons, for example, by making systematic LKS and compiling evaluations following learning objectives.

#### Cycle II

Looking at the table of student learning outcomes, the average score of the initial data was 55.40. Improvements were made in the second cycle using image media, and the average value of student learning increased to 71.60. For grades per individual following the completeness criteria, namely 70.00, only 15 out of 25 students were completed in the initial data, and ten other students were not. This learning outcome is categorized as still needing to be improved because there are still many students who still need to complete it by the established KKM. For this reason, in the following learning activity, efforts are made to use learning media as effectively as possible so that students who learn feel happy and easily accept lessons (Juliawati & Rahmatunnisa, 2019); (Fikri, 2019).

### Cycle III

The student learning outcomes in the table, the initial data's average value was 55.40. Then an improvement was made in cycle III using image media, and the average value of student learning increased to 84.40. For the value per individual by the completeness criteria, namely 70.00, in the initial data, only seven out of 25 students completed, and 18 other students were not. There were no complete four people in the first cycle, and 14 still needed to be completed. Furthermore, in cycle II, all students are complete.

After the improvement in cycle II was implemented, the average score of student learning outcomes was 71.60. This learning outcome shows that using image media can improve student learning outcomes. Based on the results of data processing in the improvement of learning that was carried out, we began to see an increase in results using image media in mathematics learning. According to (Sudjana, 2011), using image media appropriately and variously can:

1. Arouse passion for learning in students.
2. Allows more direct interaction between students, environment and teachers.
3. Allows students to learn independently according to their abilities.

### CONCLUSION

The results of the study stated that the efforts made in improving student learning outcomes through image media could be concluded as (1) The use of picture media has increased the mathematics learning outcomes of grade IV A SDN 21 students of Pulau Punjung, Pulau Pujung District for the 2019/2020 academic year; (2) the average student activity through the cycle I as much as 51.20% is categorized as less, cycle II as much as 56, 60% is still categorized as less and cycle II obtained as much as 84% categorized as good; (3) the average absorption of students obtained as much as 55.40, an increase of 84.40 in cycle III.

**REFERENCES**

- Agustyani, T. N., Abidin, Y., & Rakhmayanti, F. (2022). Pengaruh Media Pembelajaran Game terhadap Keterampilan Menulis Puisi Siswa Sekolah Dasar. *Didaktik : Jurnal Ilmiah PGSD FKIP Universitas Mandiri*, 8(1), 280–289.
- Aji, R. (2016). Digitalisasi, Era Tantangan Media. *Islamic Communcation Journal*, 1(1), 43–54.
- Arif, S. A. (2013). *Penggunaan Media Gambar Bangun Datar sebagai Upaya Meningkatkan Hasil Belajar Matematika Siswa Kelas III SDN Jubelkidul 2 Kecamatan Sugio Kabupaten Lamongan*. Universitas Muhammadiyah Malang.
- Arnita. (2017). Inovasi Metode dan Media dalam Pembelajaran Seni di Indonesia. *Jurnal Konseling Dan Pendidikan*, 5(1), 44–51.
- Djamarah, S. B. (2014). *Pola Asuh Orang Tua dan Komunikasi dalam keluarga : upaya Membangun Citra Membentuk Pribadi Anak* (1st ed.). RINEKA CIPTA.
- Ernanda, N. (2019). Upaya Meningkatkan Hasil Belajar Matematika pada Konsep Bangun Datar dengan Menggunakan Media Gambar Diam di Kelas II SD Negeri 01 Durian Tinggi Kecamatan Kapur IX. *THEOREMS*, 4(2), 158–168.
- Fikri, Z. (2019). Peningkatan Hasil Belajar Matematika Materi Bangun Datar Menggunakan Media Papan Berpaku pada Anak Tunarungu Kelas V di Sekolah Luar Biasa Karnnamanohara Yogyakarta. *Jurnal Widia Ortodidaktika*, 8(11), 1181–1191.
- Harahap, D. (2016). Penggunaan Media Gambar untuk Meningkatkan Hasil Belajar IPS Siswa. *REKOGNISI: Jurnal Pendidikan Dan Kependidikan*, 1(1), 74–83.
- Hendrawati. (2020). Meningkatkan Hasil Belajar Matematika Materi Luas Bangun Ruang melalui Penggunaan Media Bangun Ruang pada Siswa Kelas VI SD Negeri Karang Asing 04 Kecamatan Cikarang Utara Kabupaten Bekasi. *Jurnal Pedagogia*, 8(4), 43–54.
- Juliawati, S. E., & Rahmatunnisa, S. (2019). Peningkatan Hasil Belajar Matematika Siswa Materi Bangun Datar melalui Media Menara Hanoi dan Origami. *Holistika: Jurnal Ilmu PGSD*, III(1), 53–56.
- Latifah, D., Maryam, I., & Darmono, B. P. (2022). Efektivitas Model Pembelajaran Blended Learning Berbantuan EDMODO terhadap Penalaran Matematis Siswa Kelas X SMK Kesehatan Purworejo. *Jurnal Eduscience (JES)*, 9(3), 650–660.
- Mu'minah, Halimatul Lim; Suryaningsih, Y. (2020). implementasi STEAM (Science, Technology, Arts and Matematics) dalam Pembelajaran Abad 21. *Jurnal Bio Education*, 5(1), 65–73.
- Nuryati. (2022). *Implementasi Literasi Digital dalam Pembelajaran Matemaika di SD Negeri Sumogawe 01 Kabupaten Semarang*. Universitas Muhammadiyah Surakarta.
- Rahayu, S., & Hidayati, N. W. (2018). Meningkatkan Hasil Belajar Matematika melalui Penggunaan Media Bangun Ruang dan Bangun Datar pada Siswa Kelas V SDN Jomin Barat 1 Kecamatan Koto Baru Kabupaten Karawang. *JPSD*, 4(2), 204–215.

- Ramadhani, R. G. (2021). *Pengembangan Perangkat Pembelajaran Matematika dengan Pendekatan Contextual Teaching and Learning (CTL) pada Materi Statistika di Kelas VIII SMP Negeri 18 Pekan Baru*. Universitas Islam Riau.
- Selvianiresa, D., & Prabawanto, S. (2017). Contextual Teaching and Learning Approach of Mathematics in Primary Schools. *Journal of Physics: Conference Series*, 895(1). <https://doi.org/10.1088/1742-6596/895/1/012171>
- Setyawati, D., Saputri, A. R., Fani, F. A., & Hajron, H. K. (2022). Upaya Meningkatkan Hasil Belajar Geometri Anak Sekolah Dasar Menggunakan Metode Gambar. *Konferensi Ilmiah Dasar*, 1186–1194.
- Sidi, I. D. (2001). *Menuju Masyarakat Belajar: Menggagas Paradigma Baru Pendidikan*. Logos Wacana Ilmu.
- Sudjana, N. (2011). *Supervisi Pendidikan, Konsep dan Aplikasinya Bagi Pengawas Sekolah* (N. Sudjana, Ed.). Binamitra Publishing.
- Utami, J. Y. (2022). Upaya Peningkatan Prestasi Belajar Matematika dalam Memahami Materi Statistik melalui Pendekatan CTL pada Siswa Kelas XII Tata Busana SMK Negeri Pringkuku. *Humaniora*, 9(3), 212–217.
- Widayati, G. (2013). *Upaya Meningkatkan Aktivitas dan Hasil Belajar tentang Bangun Datar dengan Media Gambar pada Siswa Kelas IV Sekolah Dasar Negeri 2 Sabranglor Tahun Ajaran 2013/2014*. Universitas Muhammadiyah Surakarta.