THE EFFECTIVENESS OF PMR LEARNING MODEL AS MATERIALS OF SUMMARY OF 1ST GRADER

Compiled as one of the requirements for completing the Strata I Study Program in Department of Elementary Study Program, Faculty of Teacher Training and Education

By:

Fadlilah Salsabila Riyadi
A510190001

ELEMENTARY SCHOOL STUDY PROGRAM
FACULTY OF TEACHER TRAINING AND EDUCATION
UNIVERSITAS MUHAMMADIYAH SURAKARTA
2022

APPROVAL

THE EFFECTIVENESS OF PMR LEARNING MODEL AS MATERIALS OF SUMMARY OF 1ST GRADER

PUBLICATION ARTICLE

By:

Fadlilah Salsabila Riyadi
A510190001

Has been checked and approved by:

Supervisor

Dr. Achmad Fathoni, M. Pd

NIDN. 0626065701

ACCEPTANCE

THE EFFECTIVENESS OF PMR LEARNING MODEL AS MATERIALS OF SUMMARY OF 1ST GRADER

by:

Fadlilah Salsabila Riyadi
A510190001

Has been defended in front of the Examiner Team
Faculty of Teacher Training and Education
Muhammadiyah University of Surakarta
On Friday, Desember 2, 2022
And declared to have met the requirements to be accepted

The board of examiners:

1. **Dr. Achmad Fathoni, M. Pd** ( )
(Head of Examiner)
2. **Dra. Ratnasari Dyah Utami, M. Si** ( )
(Member I of Examiner)
3. **Drs. Suwarno, S. H., M. Pd** ( )
(Member II Examiner)

Dean

Prof. Dr. Sutama, M. Pd
NIK/NIDN. 0007016002

STATEMENT

I hereby declare that in this scientific publication article there is no work that has ever been submitted to obtain a bachelor's degree at a university and to the best of my knowledge there is also no work or opinion that has been written or published by another person, except in writing referred to in the manuscript and mentioned in the text. bibliography.

If later it is proven that there are untruths in my statement above, then I will be fully responsible.

Surakarta, 2 Desember 2022

Researcher

Fadlilah Salsabila Riyadi

A510190001

THE EFFECTIVENESS OF PMR LEARNING MODEL AS MATERIALS OF SUMMARY OF 1ST GRADER

Abstrak

Agar siswa dapat memecahkan masalah matematika yang paling sederhana sekalipun, pendidikan matematika harus dimulai sejak anak masuk sekolah, yaitu di tingkat Sekolah Dasar. Keberhasilan pendidikan seorang siswa dapat dipengaruhi oleh pendekatan pembelajaran yang digunakan oleh guru. Secara khusus, pelajaran tambahan yang tercakup di kelas satu sekolah dasar sangat cocok untuk model pembelajaran PMR. Belajar berhitung dapat difasilitasi dengan menggunakan media bertema permen dan video edukasi. Tujuan dari pada penelitian ini yaitu untuk mengetahui hasil penerapan model pembelajaran PMR ke dalam proses pendidikan dalam kaitannya dengan pembelajaran siswa. PTK yang meliputi siklus I dan II merupakan metodologi pilihan untuk penelitian ini. Model pembelajaran PMR tidak dilaksanakan pada Siklus I sampai setelah dilakukan prates. Pada Siklus II, kami mempraktekkan paradigma pembelajaran PMR dengan bantuan video pembelajaran dan media permen. Dua puluh siswa dari kelas satu di SD Negeri Mangunrejo 1 berpartisipasi didalam penelitian ini. Teknik pengumpulan data dikumpulkan tes dan dokumentasi. Penelitian ini menjelaskan mengapa rata – rata nilai siswa pada siklus I adalah 45 persen, yang berada di bawah standar KKM. Syarat KKM terpenuhi dengan rata-rata nilai siswa 83,3% pada siklus II setelah model pembelajaran PMR diterapkan. Temuan dari penelitian ini menunjukkan bahwa ketika paradigma pembelajaran PMR digunakan bersamaan dengan video pembelajaran dan media permen, hasil belajar siswa menunjukkan peningkatan yang signifikan.

Kata Kunci: Matematika, PMR, Model Pembelajaran

Abstract

In order for students to be able to solve even the simplest mathematical problems, mathematics education must begin when children enter school, namely at the elementary school level. The success of a student's education can be influenced by the learning approach used by the teacher. In particular, the additional lessons covered in the first grade of elementary school are very suitable for the PMR learning model. Learning to count can be facilitated by using candy-themed media and educational videos. The purpose of this study was to determine the results of applying the PMR learning model to the educational process in relation to student learning. PTK which includes cycles I and II is the methodology of choice for this study. The PMR learning model was not implemented in Cycle I until after the pre-test was carried out. In Cycle II, we practiced the PMR learning paradigm with the help of learning videos and candy media. Twenty students from grade one at SD Negeri Mangunrejo 1 participated in this study. Data collection techniques were collected by tests and documentation. This study explains why the average student score in cycle I was 45 percent, which is below the KKM standard. The KKM requirements were met with an average student score of 83.3% in cycle II after the PMR learning model was applied. The findings from this study indicate that when the PMR learning paradigm is used together with learning videos and candy media, student learning outcomes show a significant increase.

Keywords: Mathematic, PMR, Learning Model

1. INTRODUCTION

The most important factor in students' academic performance is the extent to which they have been taught to use established educational concepts and learning theories (Sagala, 2017). The learning process can be considered as a dialogue between teacher and student. The role of educators is to educate, while the role of students is to learn. Educators' efforts to motivate students to be involved in learning activities can be considered as learning itself ((Sudjana, 2010) (Fabiana Meijon Fadul, 2019)).

Educational standards at the primary level have an impact on all subsequent levels. Teaching quality has a direct impact on student achievement, and student achievement in turn has the potential to affect the quality of schools and ultimately the Indonesian education system. The quality of society can be evaluated in part by educational attainment. The level of student learning outcomes is one indicator of substandard education. Our education system suffers in part from the poor quality of our students' learning. In particular, when it comes to mathematical disciplines.

In most countries, mathematics is a compulsory subject for students. Mathematics is learning in a field of study that is able to optimize the first character in the development of hard skills (Ratnawati et al., 2020). All students, regardless of academic background, must be required to take calculus. Due to its abstract nature, mathematical objects can be a challenge for students to understand. For this reason, many students develop an aversion to mathematics.

The numeracy skills of elementary school students have a very important role for their later success in mathematics ((Marliani, 2015)(Hasil et al., 2022)). In mathematics, it is usually applied for the first time in the lowest grade because the learning material for mathematics is still simple ((Siregar, 2019)(Herdiansyah & Purwanto, 2022). Mathematical arithmetic processes are often used in their daily lives, although not directly. Some students hate math because they believe it is too challenging. Many students are afraid of mathematics in advance, so when students learn and understand mathematics related to formulas, it is something they must understand in learning mathematics (Nabilah et al., 2021). However, there are individuals who find mathematics an easy topic. Since most students begin their educational career at the elementary level, it is important that mathematics is included in the curriculum so that students can move from a basic understanding of the subject to more complex topics ((Sirate, 2012)(Hasil et al., 2022)). Mathematics, as everyone knows, is a very important field of study because of its practical application in all aspects of life. According to Van de Henvel - Panhuizen ((Wijaya, 2012)(Tampubolon, 2016)). Children will quickly forget and be unable to apply mathematics if it is taught separately from everyday experience.

There is a correlation between a teacher's deliberate choice of a learning model for the content presented and the success of his students in acquiring that knowledge. The aim is to increase learning outcomes through increasing student understanding. A large amount of time and energy from educators is required to digest and implement learning models. Nonetheless, most educators continue to rely on instructor-led classroom-based instruction. SD Negeri Mangunrejo 1 also has this problem.

The researcher observed that in grade 1 SD Negeri Mangunrejo 1 learning was still centered on educators or teachers still using interactive learning models, especially in mathematics. As a result, students are often disinterested in learning and struggle to keep up because they have nothing to do but listen, take notes, and complete practice questions. As a result, students become more social and relaxed among their close friends. This is evident when students remain silent and are unable to respond to questions about a given subject. The class teacher at SD Negeri Mangunrejo 1 admitted that many children had not reached the KKM standard for the sum concept until the end of grade I (Minimum Completeness Criteria). The teacher has implemented remedial measures, but many students' test scores remain below the KKM even after corrections have been made. The teacher's interactive learning model tends to cause students to get bored more quickly, become uncreative, indifferent, and make students less developed in their skills, and make student learning outcomes in mathematics decrease (Afsari et al., 2021).

Due to the difficulties faced by grade 1 SD Negeri Mangunrejo 1, the conventional classroom model must be adapted to be more interesting and fun. If students find what they are learning enjoyable, they will be more interested in it, which in turn will increase their ability to retain the information presented in class and ultimately result in greater levels of achievement and higher efficiency in the learning process.

The PMR (Problem-Mathematics-Realistic) learning model paradigm is one model that can be taken to make arithmetic content more fun and interesting for students. As its name suggests, the Realistic Mathematics Education Model (PMR) is derived from RME, an approach to teaching and learning mathematics based on the idea that solving mathematical problems is primarily a human endeavor (Gravemeijer, 1994) (RI, 2019)). If you are using the PMR Model to teach your students, you should encourage them to build and reorganize mathematical concepts so that they understand the material in depth. The goal here is to find as much real-world context and challenges as possible, making the learning process more relevant and interesting. Realistic mathematics learning can be said to be a learning in the field of mathematics which can show the activities and experiences of students until results are found

to be able to understand problems in mathematics (Sadiq and Mustajab, 2017: 7; (in(Muryaningsih, 2020)(Herdiansyah & Purwanto, 2022)). The Realistic Mathematics Learning Model (PMR), which is a teaching and learning theory contained in mathematics education studies. Teachers can apply this PMR learning model to mathematics subjects which serve as a reference in improving the learning process and learning outcomes in class (Ningsih, 2014) in ((Puspitasari & Airlanda, 2021)).

The learning model is more prominent because it has several characteristics. PMR has five characteristics that can operationalize the guiding principles. The characteristic features of the PMR model use contextual problems, contributions to students, interactions, models, and connections with other Gravemeijer topics ((Kaunang, 2018) (Afriansyah, 2021) (Afriansyah, 2022)).

Researchers use the PMR learning model because during the PMR learning process students are given the opportunity to be able to reinvent concepts in mathematics so that they really understand the material being taught by the teacher. Thus, students can search for any and all conditions, situations, and problems that might arise in their daily lives. In order to arouse students' interest and make them invest in their own mathematics education, the learning process must be made relevant to them. The application of the PMR learning model in class is quite useful in reducing misunderstandings about addition material among students ((Bustanika, 2019)(Sholikhah & Rasmita, 2020) (Afriansyah, 2022)). Under these conditions, the PMR learning model has promising results in reducing students' lack of understanding. The model in realistic mathematics learning has advantages including; (1) to provide students with a very clear understanding of their daily lives and the usefulness of the study of mathematics in general for humans; (2) to provide an easy-to-understand understanding to students that the study of mathematics is a field of study that students can construct and develop themselves, not only those who are usually called experts in a particular field; and (3) to provide correct understanding to students regarding how to solve a problem which does not have to be single or does not need to be the same between one student and another (Aris, 68 C.E.).

According to research conducted in this area, students whose mathematics class used a more realistic teaching approach had significantly more perfect learning outcomes (70.333 compared to 59.241 for the comparison group). It can be seen that the realistic mathematics education strategy (PMR) has a considerable impact on the development of students' mathematics studies in elementary schools (Khotimah & Asâ, 2020).

Based on field studies that investigated the impact of the PMR method on student grades, this model in PMR learning was able to increase the average student score by 32.22%, from the lowest 21.33% to the highest 61.09% (Faot & Amin, 2020).

The percentage of material mastered by students rose to 91.17 percent, while previous student learning outcomes had an average of 82.17 percent. It can also be said that the teaching materials produced are successful and practical, because they are based on realistic mathematics education methods (Theresia, 2020).

There are differences between research that has been conducted in the past and research that is currently being carried out by researchers, including differences in the types of learning media used, the types of individuals studied, the types of content studied, and research locations. studies are underway. This study aims to find out whether the candy-themed video-based learning model on basic arithmetic operations is an effective way to help first-grade students conceptualize abstract mathematical concepts through the use of concrete objects as media. Study participants will become first-year students at SD Negeri Mangunrejo 1 to evaluate the impact of the PMR learning model on their success in the task of solving addition subtraction problems.

2. METHOD

In particular, the Classroom Action Research Design was used for this study (CAR). For this study, we adopted the design of classroom action research version of Kemmis and Mc. Taggart ((Hanifah, 2014) (Hasil et al., 2022)).

Specifically, this research was carried out in one class which had two separate learning meetings, namely in the form of cycle I and cycle II, the first was carried out using an interactive learning model, and the second used the PMR learning model.

Twenty students, ten boys and ten girls, from the first grade of SD Negeri Mangunrejo 1 participated in this study. There are actually two research cycles here. Throughout each round of preparation, implementation, evaluation, and response. The researcher uses two types of tests (pre-test and post-test) which are useful for measuring the extent to which students understand the material discussed, with additional documentation as support and providing strong evidence that the research was carried out. Mathematical exercises involving addition operations are observed for the observed values. Grade I students were observed and found to have a variety of problems, including an inability to operationalize addition by most. Finally,

the study authors tried, with the help of candies and videos, to help first graders with their addition difficulties.

To reach at definite research results, scientists use a technique called data analysis, which involves processing data related to a problem statement. The resulting data were analyzed using a quantitative descriptive method.

3. RESULT AND DISCUSSION

3.1 Result

This chapter will explain the findings of the research that has been done. Each cycle consists of four stages, namely the planning stage, the implementation stage, the observation or observation stage, and the reflection stage which will provide an explanation of the research findings.

3.2 Discussion

3.2.1 Cycle 1

At the time of the first iteration, the researcher applied the learning through a four-step process consisting of preparation, action and evaluation. Each of the four steps of cycle 1 is carried out sequentially.

1. Planning Stage

Researchers and educators have developed a strategy for implementing Cycle 1 which takes 2 x 35 minutes ((Gunantara et al., 2014)(Hasil et al., 2022)). Researchers will facilitate learning by submitting 10 addition evaluation questions.

2. Implementation Stage

The second stage is the role of the researcher as a class teacher. To start the day of teaching and learning, everyone prays. The researcher took attendance first and then made an apperception by asking the children if they remembered anything from the previous week's math class. Everything that is done in the classroom must have a reason, and here the researcher reveals the learning objectives. In the core stage, the researcher explains the summation material. In the last phase, the researcher engages in conversation with students about the knowledge they have acquired. Repeat the explanation if some students still seem confused. During the closing prayer, both students and the teacher share their reflections on the learning activities.

3. Observation Stage

Even with an interactive learning model, the researcher found many difficulties in first grade students at SD Negeri Mangunrejo 1. This difficulty was most evident in the field of addition.

Table 1. Distribution of Cycle 1 Frequency

Score	Completeness	Frequency	Percentage
<70	Not completed	11	55%
>70	Completed	9	45%
	Total	20	
	Lowest score	40	
	Highest score	88	
	Average score	68.7	

In Table 1. It was found that the completeness that occurred in cycle one was 45% or only nine students, while for those who had not completed there were eleven students or around 55%. It can be seen that the application of interactive learning models in addition material is still a lot of people who do not understand and operate arithmetic operations. So it still needs to be continued with the second cycle by applying the PMR learning model.

4. Reflection Stage

Students at SD Negeri Mangunrejo 1 experience difficulties in addition operations, which are determined from the pre-test given when using the learning model that is usually used by teachers in class and interactive learning models. This is because during the learning period, students mainly act as passive observers, making no contribution other than listening, taking notes, and answering questions, which gives rise to a common complaint: boredom.

As a result, cycle II must be carried out by the researcher. Researchers will modify the current educational approach and distribute media in the form of candies and learning videos to help students understand the concept of addition better in the next phase.

3.2.2 Cycle II

Because in cycle one the results obtained were not in accordance with the predetermined targets, it was continued by continuing the second cycle with four stages which included; planning stage, implementation stage, observation stage, and reflection stage.

1. Planning Stage

At the planning stage it was carried out with a dedicated 2X35 minutes designed by researchers and teachers, which involved the implementation of Cycle II. . In the previous cycle, many children had not been able to work on the questions given by the researcher. This is because many children still do not understand the explanations that the researchers have provided. In cycle one, the results of the children's work showed that many children could not perform arithmetic operations. Therefore, it is things like this that make the acquisition of children's scores in cycle I not get the desired results. In this second cycle, the researcher will apply the

PMR learning model with the help of candy media and learning videos and the researcher prepares 10 points of addition evaluation questions.

2. Implementation Stage

The duration of each face-to-face class is 2X35 minutes. The researcher acts as a teacher during the implementation stage. Greetings, presence, motivation, and views on learning all set the stage for what's next. Communicating learning objectives and (KKM) that must be achieved to students at the beginning of the learning process is very important. The teacher uses candy media that has been prepared and educational videos to help students learn. Educators in cycle II use the PMR learning model, where students are introduced to new concepts through the use of candy media and video recordings. The teacher then gives an explanation to students about how to do addition arithmetic using candy media and learning videos after students answer ten questions about the topic.

3. Observation Stage

The results of the second round of testing were very good. The students are very interactive and expressive in the class. There are lots of thought provoking questions that expand on the problem presented. The learning outcomes of this cycle increased from the previous cycle.

Table 2. Distribution of Cycle 2 Frequency

Score	Completeness	Frequency	Percentage
>70	Completed	18	90%
<70	Not completed	2	10%
	Total	20	
	Lowest Score	68	
	Highest Score	98	
	Average Score	83,3	

Cycle II mastery level was 90% (18/20), with only 10% (2/20) students who did not complete. From high 98 to low 68, for an average of 83.3. Table 3 provides a brief summary of the differences in the results of cycles I and II.

Table 3. Summary of Cycle

No	Score	Completeness	
		Cycle I Percentage	**Cycle II Percentage**
1	<70	11 55%	18 90%
2	>70	9 45%	2 10%
	Total	20	20
	Highest Score	88	98
	Lowest Score	40	68
	Average	68,7	83.3

Using data from Table 3. The percentage of students who have completed Cycle 1 increased from 45% (9 students) to 90% (18 students). Then the percentage of students who had not graduated dropped from 55 percent to 10 percent, from 11 to 2 students.

4. Reflection Stage

The results of these efforts can be seen in the completion rate of 90 percent for cycle II, much higher than the target of 75 percent. This is a successful outcome. A study is considered successful if the learning outcomes are complete in more than 75% of the participants ((Nopitasari et al., 2021) (Yulianto et al., 2022)).

As a result, action research that has been done in the classroom must be left for the next cycle. This growth is the result of the use of candy media by students as a source in solving arithmetic addition problems. At the beginning of the first cycle meeting, it can be predicted whether a student will have difficulty understanding the concept of addition.

4. CLOSING

The results of using the PMR (Realistic Mathematical Problems) learning approach by students with the help of candy media and learning videos are quite promising. The researcher's instructional strategies included distributing candy-themed media to each student and playing educational videos on the classroom projector to help students understand the course summary material better. The results and discussion of cycles I and II can be concluded that the learning process at SD Negeri Mangunrejo 1 can be improved by utilizing the PMR learning model assisted by candy media and learning videos. This is evidenced by the fact that students show

greater interest in learning when they are actively involved in educational activities, because they find it less boring and more enjoyable. Furthermore, instructors are anticipated to be proficient in the use of media in educational contexts.

REFERENCES

Afriansyah, E. A. (2021). *Realistic Mathematics Education Berbasis Emergent Modeling untuk Meningkatkan Kemampuan Berpikir Kritis dan Kreatif Matematis serta Curiosity Mahasiswa Calon Guru*. Universitas Pendidikan Indonesia.

Afriansyah, E. A. (2022). Peran RME terhadap Miskonsepsi Siswa MTs pada Materi Bangun Datar Segi Empat. *Mosharafa: Jurnal Pendidikan Matematika*, *11*(3), 359–368. https://doi.org/10.31980/mosharafa.v11i3.2102

Afsari, S., Safitri, I., Harahap, S. K., & Munthe, L. S. (2021). Systematic Literature Review: Efektivitas Pendekatan Pendidikan Matematika Realistik Pada Pembelajaran Matematika. *Indonesian Journal of Intellectual Publication*, *1*(3), 189–197.

Aris, S. (68 C.E.). model pembelajaran inovatif dalam kurikulum 2013. *Yogyakarta: Ar-Ruzz Media*.

Bustanika, L. H. (2019). Design of pop up book based on realistic mathematics education to improving spatial ability students of class VIII. *Jurnal Pendidikan Bitara UPSI*, *12*, 1–9.

Fabiana Meijon Fadul. (2019). *济無No Title No Title No Title*. *2011*, 10–29.

Faot, M. M., & Amin, S. M. (2020). Pengaruh Pendekatan Pendidikan Matematika Realistik Indonesia (PMRI) Terhadap Hasil Belajar Siswa. *MATHEdunesa*, *9*(1), 55–60. https://doi.org/10.26740/mathedunesa.v9n1.p55-60

Gravemeijer, K. P. E. (1994). *Developing realistic mathematics education*.

Gunantara, G., Suarjana, I. M., & Riastini, P. N. (2014). Penerapan model pembelajaran problem based learning untuk meningkatkan kemampuan pemecahan masalah matematika siswa kelas V. *Mimbar PGSD Undiksha*, *2*(1).

Hanifah, N. (2014). *Memahami penelitian tindakan kelas: teori dan aplikasinya*. Upi Press.

Hasil, M., Siswa, B., Tema, K., & Madura, U. T. (2022). *Jurnal Pendidikan Indonesia Vol . 3 No . 7 Juli 2022 PENJUMLAHAN DAN PENGURANGAN MENGGUNAKAN PENDEKATAN PEMBELAJARAN MATEMATIK REALISTIK DI SDN KAMAL 3 Pendahuluan Kemampuan berhitung di kelas awal atau rendah memiliki peranan penting sebagai dasar tercap*. *3*(7), 592–605.

Herdiansyah, F., & Purwanto, S. E. (2022). Pengaruh Pembelajaran Matematika Realistik (PMR) Terhadap Kemampuan Pemecahan Masalah Matematis Siswa Kelas II pada Materi Operasi Hitung Penjumlahan dan Pengurangan. *Jurnal Basicedu*, *6*(4), 7496–7502. https://doi.org/10.31004/basicedu.v6i4.3525

Kaunang, D. F. (2018). Penerapan Pendekatan Realistic Mathematics Education dalam Pembelajaran Matematika Materi Persamaan Garis Lurus di SMP Kristen Tomohon. *Mosharafa: Jurnal Pendidikan Matematika*, *7*(2), 307–314.

Khotimah, S. H., & Asâ, M. (2020). Pendekatan pendidikan matematika realistik terhadap hasil belajar matematika siswa sekolah dasar. *Jurnal Imiah Pendidikan Dan Pembelajaran*, *4*(3), 491–498.

Marliani, N. (2015). Peningkatan Kemampuan Berpikir Kreatif Matematis Siswa Melalui Model Pembelajaran Missouri Mathematics Project (MMP). *Formatif: Jurnal Ilmiah Pendidikan MIPA*, *5*(1).

Muryaningsih, S. (2020). *A Increased Curiosity Attitudes and Mathematics Learning Achievement Through the Realistic Mathematics Learning Model (PMR) in Elementary*

Schools. Cendekiawan, 2 (1), 1–12.
Nabilah, E., Umam, K., Azhar, E., & Purwanto, S. E. (2021). Kecemasan siswa dalam menyelesaikan masalah modelling matematika pada praktek kelas virtual. *International Journal of Progressive Mathematics Education*, *1*(1), 41–60.
Nopitasari, E., Rahmawati, F. P., & Ratnawati, W. (2021). Peningkatan Hasil Belajar Matematika Melalui Model Pembelajaran Blended Learning Berbasis Blog Pada Peserta Didik Di Sekolah Dasar. *Edukatif: Jurnal Ilmu Pendidikan*, *3*(5), 1935–1941.
Puspitasari, R. Y., & Airlanda, G. S. (2021). Meta-Analisis Pengaruh Pendekatan Pendidikan Matematika Realistik (PMR) Terhadap Hasil Belajar Siswa Sekolah Dasar. *Jurnal Basicedu*, *5*(2), 1094–1103.
Ratnawati, D., Handayani, I., & Hadi, W. (2020). Pengaruh model pembelajaran PBL berbantu question card terhadap kemampuan berpikir kritis matematis siswa SMP. *Edumatica: Jurnal Pendidikan Matematika*, *10*(01), 44–51.
RI, M. K. (2019). No TitleΕΛΕΝΗ. *Αγαη*, *8*(5), 55.
Sagala, S. (2017). *Konsep dan makna pembelajaran: Untuk membantu memecahkan problematika belajar dan mengajar*.
Sholikhah, O. H., & Rasmita, R. (2020). Realistic Mathematics Education Based on Virtual Network in Increasing the Understanding of Geometry Concept. *Jurnal Iqra': Kajian Ilmu Pendidikan*, *5*(1), 85–93.
Sirate, F. S. (2012). Implementasi etnomatematika dalam pembelajaran matematika pada jenjang pendidikan sekolah dasar. *Lentera Pendidikan: Jurnal Ilmu Tarbiyah Dan Keguruan*, *15*(1), 41–54.
Siregar, N. (2019). HUBUNGAN SELF-EFFICACY DENGAN HASIL BELAJAR MATEMATIKA SISWA KELAS RENDAH. *JOURNAL of MATHEMATICS SCIENCE and EDUCATION*, *1*(2), 64–72.
Sudjana, N. (2010). *Penilaian hasil proses belajar mengajar*.