ISSN 2614-5103 (Print)
2614-5111 (online)
IndoMath Indonesia Mathematics Education
https://indomath.org/index.php/indomath
Vol 6, No. 1, February 2023, pp. 25-34

# Analysis of Error in Solving Story Problems on Mixed Counting Operations for Class Iv Elementary School

**Wonadesma Dwi Khotimah**
Universitas PGRI Semarang, wonadesma97@gmail.com

**Ryky Mandar Sary***
Universitas PGRI Semarang, rykymandarsary@upgris.ac.id

**Tatang Herman**
Universitas Pendidikan Indonesia, tatangherman@upi.edu

**Sufyani Prabawanto**
Universitas Pendidikan Indonesia, sufyani@upi.edu

**ABSTRACT**

This research focus is on the ability to solve word problems on mixed arithmetic operations. The research objective is to analyze errors in solving word problems in mixed arithmetic operations material. Furthermore, this research approach was qualitative research. The data sources were 10 fourth-grade students and a fourth-grade teacher at State Elementary School 1 Sulursari; teachers were chosen because of their role in learning. Data collection procedures consisted of tests and interviews. The research showed that fourth-grade students experienced errors in solving word problems on mixed arithmetic operations, including reading, transformation, process skills, and final answer writing errors. The suggestions conveyed to students when learning should pay attention to the teacher when explaining the material well so that they can ask the teacher when they don't understand the material. Multiply practice questions so that you know better when working on questions; you should carefully not need to rush.

Keywords: Mathematical Errors, Mixed Arithmetic Operations, Elementary School

**ABSTRAK**

Fokus penelitian ini adalah kemampuan menyelesaikan soal cerita materi operasi hitung campuran. Tujuan penelitian ini adalah untuk menganalisis kesalahan dalam menyelesaikan soal cerita pada materi operasi hitung campuran. Pendekatan penelitian ini menggunakan penelitian kualitatif. Sumber data yaitu siswa kelas IV sebanyak 10 orang dan guru kelas IV SD Negeri 1 Sulursari, guru dipilih karena berperan dalam pembelajaran. Prosedur pengumpulan data yang digunakan adalah tes dan wawancara. Berdasarkan penelitian ini menunjukkan bahwa siswa kelas IV mengalami; kesalahan membaca, kesalahan transformasi, kesalahan keterampilan proses dan kesalahan penulisan jawaban akhir. Saran yang disampaikan kepada siswa ketika dalam pembelajaran sebaiknya memperhatikan guru ketika menjelaskkan materi dengan baik, sehingga ketika belum paham materi bisa bertanya kepada guru. Perbanyak latihan soal agar semakin paham, ketika mengerjakan soal sebaiknya dengan teliti tidak perlu terburu-buru.

Kata kunci : Kesalahan Matematika, Operasi Hitung Campuran, Sekolah Dasar

## INTRODUCTION

Law No. 20 of 2003 concerning the Education System Article 1 states that education is a conscious and planned effort to create a learning atmosphere and learning process so that students develop their potential to have religious, spiritual strength, self-control, personality, intelligence, noble character, as well as skills needed by himself, society, nation, and state (Rusmaini, 2014). Education

is an effort to humanize humans. Education is a human business. Only humans have an education. The subjects and objects of education are humans (Soegeng, 2016). The educational process is also an activity that is carried out consciously and planned to create a learning atmosphere and learning process (Maratush, 2018).

According to Rusman (2017), learning is an attempt to make students learn or an activity to teach students. In other words, learning is an attempt to create conditions for learning activities to occur. Learning mathematics is providing learning experiences to students through a series of activities that are achieved so that students gain knowledge of the mathematics being studied and are intelligent, skilled, and able to understand the material being taught (Amir, 2014). Wati & Sary (2019) explains that in learning mathematics, students must be active and willing to try and ask questions when they experience errors in learning math problems. Many students do not understand the material in mathematics and experience errors.

According to Ariyanto (2011), mathematics is an exact and systematically organized branch of science, knowledge of numbers and calculations, basic knowledge of quantitative facts, and problems of space and shape. Pane & Darwis (2017) mentions that learning mathematics is not just a transfer of knowledge from teacher to students who become students as learning objects, and students should become subjects in learning. Mathematics is the science of logic regarding shape, composition, quantity, and related concepts (Indrayati & Jailani, 2015; Juniarti et al., 2020; Setyadi & Qohar, 2017; Zairisma et al., 2022). Meanwhile, Faisal et al. (2016) define learning mathematics as a teaching and learning process built by teachers to develop creative thinking to improve students' thinking skills and construct new knowledge. Furthermore, according to Suherman (2003), learning mathematics is a learning process that involves students actively completing mathematical knowledge. Many elements can affect the success of learning mathematics simultaneously. These elements include; students, educators/ teachers, learning methods, and environment. In terms of the students themselves, the factors that affect learning achievement can be grouped into two groups: external and internal. Low ability in the internal factors above causes low achievement in learning mathematics, such as the inability of students to solve math problems, and can be seen from the existence of problem-solving errors. This error is known to the teacher in the teaching and learning process in class and from the results of student work in tests. In learning, a teacher should analyze the mistakes made by students. The analysis is carried out by determining the types and causes of student errors.

Runtukahu & Tombokkan (2014) mention children's mistakes in learning mathematics, namely mistakes in learning to count, learning geometry, and general errors in solving word problems. Rahardjo & Waluyati (2011) states that the errors experienced by students in working on story-form questions mechanically include errors in understanding the questions, errors in making mathematical models (sentences), errors in computing (calculations), and mistakes in interpreting answers to mathematical sentences. According to Singh et al. (2010) and Jha (2012), there are six types of errors made by students in solving math problems, namely reading errors, comprehension errors, transformation errors, process skill errors, encoding errors, and carelessness. Furthermore, Santosa

et al. (2020) state that the mistakes made by students in working on math problems can be identified in several aspects, such as language, imagination, prerequisites, responses, and application.

Mathematical problem-solving is a process in which a person is confronted with mathematical concepts, skills, and techniques to solve mathematical problems (Roebyanto, 2017; Widodo et al., 2017). Research related to the analysis of mathematical problem-solving abilities has been carried out a lot. Kamalia et al. (2022) state that weak problem-solving skills mean that students cannot complete mathematics and do not know what steps to work on first. Solving math problems at school is commonly manifested as word problems. Students' skills in solving word problems, especially those related to problem-solving aspects, are helpful in daily life. However, not all students can efficiently work on word problems. Word problems tend to be more challenging than problems that only contain numbers. Completion of word problems not only obtains the results of calculations from the matter asked, but there are stages of completion or thought processes that must be understood by students (Dewi et al., 2014; Novferma, 2016; Utari et al., 2019). Raharjo et al. (2009), questions that can be employed to determine students' abilities in mathematics can be in the form of stories/ words and non-story/count questions. Usually, the problems in word problems are presented in meaningful and easily understood sentences by students. Raharjo et al. (2009) argue that word problems are questions that are shown in the form of short stories. In solving word problems, especially in the form of description questions.

Students are expected to be able to write down and explain coherently the problem-solving process given by selecting and identifying relevant conditions and concepts, looking for generalizations, formulating settlement plans, and organizing skills previously possessed (Hartini, 2008). Children need the ability to solve word problems in learning mathematics at school because this is important for children to master. Problem-solving represents an essential part of mathematics in solving this problem, often using words or story problems that students must complete (Yu et al., 2022). In solving word problems, some steps must be carried out to achieve the desired answer. There are several stages in solving word problems, namely: (1) understand the problem, (2) divide a plan, (3) carry out the plan, and (4) look back (Polya, 2004; Widodo et al., 2019). Children are asked first to understand what is meant by the problem. Like what is known? What are you asking? And so forth. Then the child plans to work on the problem, for example, by finding the right formula or arithmetic operation to work on the problem, especially in word problems on mixed arithmetic operations.

Basic arithmetic operations in mathematics can be divided into four basic operations, namely (1) Addition: arithmetic operations to obtain two or more integers, (2) Subtraction: arithmetic operations to obtain the difference between two or more numbers, (3) Multiplication: A repeated addition with fixed addition, and (4) Division: A repeated subtraction with fixed subtraction, then the form of repeated operations is exponential operation. Meanwhile, mixed arithmetic operations are completing calculations consisting of multiplication, division, addition, and subtraction (Ngatiyo & Aunurrahman, 2013). The rules for working on mixed arithmetic operations are: first, operations within parentheses come. Second, addition and subtraction are equally strong, so it should prioritize the one on the left by grouping it. The urgency of researching mixed arithmetic operations is due to

arithmetic operations being frequently employed in daily life. Addition, subtraction, multiplication, and division are required when shopping. Addition can be utilized to calculate the amount of these items. Subtraction can be used to calculate change.

As with the fourth-grade students at State Elementary School 1 Sulursari, some students experienced errors in solving word problems in mathematics. Some students got low scores on mixed arithmetic operations material. Referring to the expected student learning outcomes during midterm tests, only 40% of students have not achieved the Minimum Completeness Criteria (KKM), and 60% of students have not reached the Minimum Completeness Criteria (KKM). This is caused by some of the difficulties often experienced by students, namely tests when working on word problems because they cannot understand the meaning of the questions and confusion when determining the arithmetic operations to be used. Usually, students need a very long time to solve problems in the form of word problems. Students often make mistakes when calculating and are not careful in working on math word problems.

If left unchecked, these problems will impact the learning process. So we need a theory that is used as an alternative to analyzing student mistakes in solving word problems. One theory that can be used is Newman's theory. Newman's theory is designed as a simple diagnostic procedure to analyze student errors in solving math story problems in which there are five indications of types of errors, namely, error reading questions, error understanding questions, transformation errors, processing errors, and errors in writing the final answer (Hadi, 2021; Maulana & Pujiastuti, 2020; Oktaviana, 2018). So from the problems above, the researcher conducted an Error Analysis in Solving Word Problems in the Material of Mixed Counting Operations for class IV Elementary School.

## METHOD

This research was conducted at State Elementary School 1 Sulursari, Gabus Sub-district, Grobogan Regency. The approach was qualitative research, while the data collection techniques consisted of tests and interviews.

The data source was selected based on a purposive sampling technique. The data sources were 10 fourth-grade students and a fourth-grade teacher at State Elementary School 1 Sulursari. The teacher was chosen because of her role in learning. The research instrument was the first in the form of a story question test on mixed arithmetic operations material, which consisted of five essay questions. Here is the question : (1) Adhi has 20 marbles. Because Adhi was diligent in helping, his father gave him another 30 marbles. The next day Adhi gave ten marbles to his friend. How many marbles are left by Adhi, (2) in Pak Maruli's building shop, there are 24 bags of cement to be sold.

Of the existing cement, nine sacks of cement were sold. Suppose the cement supply has been sold; then 13 packs of glue will be brought in again. How many sacks of cement are there in Mr. Maruli's building shop, (3) a group of farmers in one village received nine paks of urea fertilizer. Each sack is 72kg. The fertilizer will be distributed to 18 farmers. How many kilograms of urea fertilizer will each farmer get, (4) Deni has a basket of apples containing 60 apples, then his father gives Deni 12 apples. The next day Deni divided all the apples among his nine friends. How many apples does each child get, (5) eight trucks transport rice which will be deposited at the rice warehouse, and each

truck transports 7,500 kg of rice? If the warehouse still has 1,525 kilograms of rice in stock, how many kilograms are there?

Meanwhile, the interview sheets were used to collect data from student learning regarding student error factors in solving word problems on mixed arithmetic operations material. The test was designed to diagnose errors made by students in solving math word problems in terms of students' concepts, principles, and skills. The test was in the form of word problems on mixed arithmetic operations. Basic Competency (KD) 3.3 states explaining and making estimates of the amount, difference, product, and quotient of two whole numbers and fractions and decimals. Interviews were designed to assist researchers in digging up information on the outcomes of student work on the tests given and to simplify the identification of the causes of student errors in solving word problems. Data analysis techniques include data reduction, presentation, and withdrawal. The data validity was in the form of triangulation. This research technique was carried out by comparing test outcomes with student interview outcomes; hence, the causes of student errors were obtained.

## RESULT AND DISCUSSION

Based on the analysis of test outcomes and student interviews, errors in solving math word problems on mixed arithmetic operations for fourth grade at State Elementary School 1 Sulursari can be obtained.

The test outcomes demonstrated that the highest score was 100, and the lowest was 18. The mean score obtained was 75.2. A total of three students were declared ‘not passed’ (had not fulfilled KKM 75), and seven students were declared passed (met KKM 75).

The SW 1's work outcomes can be seen in questions 1, 3, 4, and 5. The students worked on random answers. They could not understand what was known and asked. In question number 2, they could not make a mathematical model from the information presented, or the questions given. It can be seen from the students’ answers that they only wrote down the final result of 28 sacks of cement without using the steps to solve it. It was supported by the interview outcomes with the student that SW 1 could not understand how to accomplish it and did not understand the sequence of how to do it. SW 1 was still confused about making mathematical sentences. They could not translate questions into mathematical sentences and were not used to working on questions in word problems because they required a good understanding of the work. In addition, the students’ questionnaire results indicated difficulty in determining the numbers to be stored in the addition operation.

The SW 2's work outcome is on question number 5. The students were unable to read or recognize the symbols in the questions. They could not interpret the meaning of each word, term, or symbol in the problem. In written questions, they used the sentence eight trucks. It can be seen in the answer of student number 5, which was 7,500 + 1,525 = 9,025 kg. It should have been 8 x 7,500 + 1,525 = 60,000 – 1,525 = 61,525 kg. However, the students answered 7,500 + 1,525 = 9,025 kg. It was supported by the students’ interview outcomes, which revealed that they only focused on the number of questions. Based on the students’ work outcomes, there were reading errors. This aligns with research from Rismawati & Margareta, where reading errors were caused because students misinterpreted the problem in illustrating the expected mathematical sentence.

Furthermore, SW 3's work outcome is on question number 5. These students could not interpret the meaning of each word, term, or symbol in the problem. In the written problem, eight trucks transporting rice will be deposited into the warehouse, each carrying 7,500 kg of rice. They only focused on numbers. The correct answer should have been 8 x 7,500 + 1,525 = 60,000 + 1,525 = 61,525 kg.

Meanwhile, the students answered 7,500 + 1,525 = 9,025 kg. Therefore, the students experienced reading errors. It was supported by the students' interview outcomes which revealed that they did not know if eight trucks were included in the math problem because the student thought numbers were only included in the issue.

Then, the SW 4's work outcome can be seen in question number 3. The students could not find the final result according to the procedure or steps. They have written answers with the steps asked; in contrast, they were not careful. They answered 9 x 7 = 63: 18 = 3.5 kg/person. The correct answer should be 9 x 72 : 18 = 648 : 18 = 36 kg/person. The students' interview outcomes supported it; they were not careful in reading the questions because they were in a hurry to see the theme and had finished working on the questions the researcher gave. They experienced calculation errors and wrote down the ending according to what was asked. The students' questionnaire outcomes revealed that the students were not careful in working on word problems. The same error was also found in question number 5; they could work according to the procedure or steps used; however, they were not careful in writing the final results. Based on the students' work outcomes, the students experienced errors in processing skills and writing final answers. Process skill errors are mistakes made because students make mistakes in the previous stage, namely the problem transformation stage. The next mistake is that students cannot use mathematical rules. Errors in using mathematical rules are caused by students forgetting and not being able to operate numbers, and errors not continuing the calculation process because students are in a hurry when working on problems and when students face solving steps that are considered difficult (Agnesti & Amelia, 2020; Magfirah et al., 2019).

In addition, the SW 5's work outcomes can be seen in question number 5. The students could not understand the questions in the form of word problems. They could not interpret the meaning of each word, term, or symbol in the problem. They only focused on numbers in written questions using the sentence eight trucks. It can be seen in student answers 7,500 + 1,525 = 9,025 kg. The correct answer was 8 x 7,500 + 1,525 = 60,000 + 1,252 = 61,525 kg. The students' interview outcomes supported it: students only focused on questions with numbers written on them. Students did not know if it was included in the question. Hence, it can be said that students experienced errors in reading.

The SW 10's work outcomes are on questions number 1 to 5. The students could not read or recognize the symbols in the questions. Then, they could not understand what was known or asked. They did not know what formulas were employed to solve word problems. They did not know the procedure or steps to be used. It can be seen that the students did not work on the questions carefully and thoughtfully. Answers number 1 to 5 had no correct answer. These answers were not following the questions given. The students' interview outcomes supported it. They did not know how to

accomplish word problems. Therefore, the students experienced reading errors, understanding errors, processing skills errors, and final answer writing errors. Previous mistakes caused the types of errors in writing the final answers made by students. Errors in writing the definitive answer were caused by students making mistakes in the calculation process.

These findings are supported by research conducted by Sari et al. (2018) which found that students made mistakes in solving social arithmetic word problems because students had a wrong understanding. Then researchers (Fatahillah et al., 2017) found that the types of errors based on Newman's error analysis were reading errors which consisted of mistakes in reading words, units of area, currency symbols, and denominations of money.

## CONCLUSION

This research showed that fourth-grade students experienced errors in solving word problems on mixed arithmetic operations, including reading, comprehension, transformation, process skills, and final answer writing errors. Some of the suggestions the researchers convey include (1) to students, namely that students should prepare themselves before going to school in advance by getting enough sleep. Hence, they are not sleepy during learning. Besides, students are expected to have breakfast first because it can interfere with student learning concentration. Furthermore, suggestion (2) to the teacher is that it would be nice for the teacher to create a conducive and as comfortable as possible learning atmosphere with appropriate learning methods and arrange classrooms to make a suitable and proper learning environment and communicate with students; by enquiring the material presented to create active learning, being a fun teacher letting students be creative and agreeing on shared rules between teacher and students.

## ACKNOWLEDGEMENT

The researcher would like to thank all parties willing to be research subjects/informants in the study, especially the fourth-grade students and fourth-grade teachers at SD Negeri 1 Sulursari, so that this research can be completed correctly and smoothly.

## REFERENCES

Agnesti, Y., & Amelia, R. (2020). Analisis Kesalahan Siswa VIII SMP Di Kabupaten Bandung Barat Dalam Menyelesaikan Soal Cerita pada Materi Perbandingan Ditinjau Dari Gender, Jurnal Cendika: *Jurnal Pendidikan Matematik*a, 4 (1), 151-162. https://doi.org/10.31004/cendikia.v4i1.186

Amir, A. (2014). Pembelajaran matematika SD dengan menggunakan media manipulatif. In *Forum Paedagogik*, 6 (01). Retrieved from http://jurnal.iain-padangsidimpuan.ac.id/index.php/JP/article/view/166

Ariyanto. (2011). *Pembelajaran Aritmatika Sekolah Dasar*. Surakarta: Qinant

Dewi, S. K., Suarjana, M., & Sumantri, M. (2014). Penerapan Model Polya Untuk Meningkatkan Hasil Belajar Dalam Menyelesaikan Soal Cerita Matematika Siswa Kelas V. *Jurnal Mimbar PGSD Universitas Pendidikan Ganesha*, 2(1) 1-10. https://dx.doi.org/10.23887/jjpgsd.v2i1.2057

Fatahillah , A., Wati, Y. F., & Susanto. (2017). Analisis Kesalahan Siswa dalam Menyelesaikan Soal Cerita Matematika Berdasarkan Tahapan Newman Beserta Bentuk Scaffolding yang Diberikan. *Jurnal Kadikma*, 8(1), 40-51. http://doi.org/10.33369/pgsd.10.1.1-10

Faisal, B., Lestari, L. & Atmojo, I. R. W. (2016). Peningkatan Pemahaman Konsep Sifat-sifat Bangun Datar melalui Penerapan Model Pembelajaran Student Team Achievement Division (STAD)

Menggunakan Media Realita pada Peserta didik Sekolah Dasar. *Didaktika Dwija Indria*, 4(4), 137-144.
Hadi, F. R. (2021). Kesulitan Belajar Siswa Sekolah DasarDalam Menyelesaikan Soal Hots Matematika berdasarkan Teori Newman. *Muallimuna: Jurnal Madrasah Ibtidaiyah*, 6(2), 43-56. http://dx.doi.org/10.31602/muallimuna.v6i2.4358
Hartini, 2008. Analisis Kesalahan Siswa menyelesaikan Soal Cerita Pada Kompetensi Dasar Matematika Sifat dan Menghitung besaran-besaran segiempat siswa kelas VIII Semester II SMP IT Nur Hidayah Surakarta tahun pelajaran 2006/2007. Tesis, Surakarta: Program Pasca Sarjana Universitas Sebelas Maret.
Indrayati, I.,& Jailani, J. (2015). Pengembangan Media Komik Pembelajaran Matematika Meningkatkan Motivasi Dan Prestasi Belajar Siswa Kelas V. Jurnal Prima Edukasia, 3(1), 84-96. https://doi.org/10.21831/jpe.ve3i1.4067
Jha, S. K. (2012). Mathematics Performance of PrimarySchoolStudents in Assam (India): An Analysis Using Nrewman Procedure *International Journal of Computer Applications in Engineering Sciences*, 2(1): 17-21. Tersedia di http://http://connectionebschohost.com
Kamalia, R., Rani, D., & Rahmad, S. (2022).Analysis of Mathematics Problem Solving Ability of Junior High School Students Based on APOS Theory Viewed from the Type of Kolb Learning Style.*Jurnal Indonesia Mathematics Education*, Vol.5 No.2
Magfirah, M., Maidiyah, E., & Suryawati, S. (2019). Analisis Kesalahan Siswa Dalam Mnyelesaikan Soal Cerita Matematika Berdasarkan Prosedur Newman. *Lentera Sriwijaya: Jurnal Ilmiah Pendidikan Matematika*. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika,* 1(2), 1-12. https://doi.org/10.36706/jls.v1i2.9707
Maratus, S. (2018). *Analisis Kesalahan Siswa Dalam Menyelesaikan Soal Cerita Matematika Kelas VII MTS Laboratorium UIN-S*. Skripsi. Sumatera Utara Medan: Pendidikan Matematika, Fakultas Ilmu Tarbiyah dan Keguruan, Universitas Islam Negeri. http://respository.unisu.ac.id/4041/
Maulana, F.,& Pujiastuti, H.(2022).Analisis Kesalahan Siswa SMA Dalam Menjawab Soal Dimensi Tiga Berdasarkan Teori Newman. *MAJU: Jurnal Ilmiah Pendidikan Matematika*, 7(2), 182-190. https://www.ejuornal.stkipbbm.ac.id/index.php/mtk/article/view/514
Ngatiyo, N., & Aunurrahman, A. (2013). *Penggunaan Metode Drill Terhadap Hasil Belajar Matematika Hitung Campuran Kelas III SDN 24 Pontianak* (Doctoral dissertation, Tanjungpura University).
Novferma, N, (2016). Analisis Kesulitan Dan Self-Efficacy Siswa SMP Dalam Pemecahan Masalah Matematika Berbentuk Soal Cerita. *Jurnal Riset Pendidikan Matematika*, 3(1), 76. https://doi.org/10.21831/jrpm.v3i1.10403
Oktaviana , D. (2018). Analisis Tipe Kesalahan Berdasarkan Teori Newman Dalam Menyelesaikan Soal Cerita Pada Mata Kuliah Matematika Diskrit. *Edu Sains: Jurnal Pendidikan Sains & Matematika*, 5(2) , 22. https://doi.org/10.23971/eds.v5i2.719
Pane, A., & Dawis Dasopang, M. (2017). Belajar dan Pembelajaran . FITRAH: Jurnal Kajian Ilmu-Ilmu Keislaman, 3(2),333. https://org.doi/10.24952/fitrah.v3i2.945
Polya, G. (2004). *How to solve it: A new aspect of mathematical method*. Princeton university press.
Rahardjo & Waluyati, A. (2011). Pembelajaran Soal Cerita Operasi Hitung Campuran di SD. Yogjakarta: PPPPTK Matematika.
Raharjo, M.,Ekawati, & Rudianto.(2009). *Modul Matematika SD Program Bermutu: Pembelajaran Soal Cerita di SD*. Jakarta: Depdiknas.
Roebyanto, G. (2015). *Matematika dasar untuk PGSD*. Penerbit Gunung Samudera [Grup PT Book Mart Indonesia].
Rusman, (2017). *Belajar Dan Pembelajaran Berorientasi Standar Proses Pendidikan*. Jakarta: Kencana.
Runtukkahu, J. T. (2014). Pembelajaran Matematika Dasar bagi Anak Berkesulitan Belajar. Yogyakarta: Pustaka Pelajar.
Santosa, S., Subhananto, A., & Junita, S. (2020). Analisis Kesalahan Siswa Dalam Menyelesaikan Soal Cerita Pembelajaran Matematika Pada Materi Pecahan Senilai Siswa Kelas IV SD Negeri 69 Banda Aceh. *Jurnal Ilmiah Mahasiswa Pendidikan*, *1*(1).
Sari, A.M., Susanti, N., & Rahayu, C. (2018). Analisis Kesalahan Siswa dalam Menyelesaikan Soal Cerita Materi Aritmatika Sosial Kelas VII. *Jurnal Penelitian Pendidikan Dan Pengajaran Matematika*, 4(2), 61-68. https://doi.org/10.37058/jp3m.v4i2.542
Setyadi, D., & Qohar, A (2017). Pengembangan Media Pembelajaran Matematika Berbasis Web Pada Materi Barisan Dan Deret. *Kreano, Jurnal Matematika Kreatif-Inovatif*, 8(1), 1-7. https://doi.org/10.15294/kreano.v8i1.5964
Singh, P., Rahman, A.A., Sian Hoon, T. 2010. The Newman Procedure for Analyzing Primary

FourPupils Erorrs on Written Mathematical Task:A Malaysian Perspective. *Procedia on International Conference on Mathematics Education Research* 2010 (ICMER 2010), 8(2010): 264-271.
Soegeng. (2016). *Filsafat Pendidikan*. Yogyakarta: Magnum Pustaka Utama.
Suherman, (2003). Strategi Pembelajaran Matematika Kontemporer, Yogjakarta:Pustaka.
Utari, D.R., Wardana, M.Y.S., & Damayani, A.T. (2019). Analisis Kesulitan Belajar Belajar Matematika dalam Menyelesaikan Soal Cerita. *Jurnal Ilmiah Sekolah Dasar*, 3(4), 545. https://doi.org/10.23887/jisd.v3i4.22311
Wati, R. S. & Sary, R. M. (2019). Analisis Kemampuan Menyelesaikan Masalah Soal Cerita Pada Materi Pecahan Di Sekolah Dasar. In *Seminar Pendidikan Nasional (SENDIKA)*, 1 (1), 378-386.
Widodo, S. A., Purnami, A. S., & Prahmana, R. C. I. (2017). Team accelerated instruction, initials, and problem-solves ability in junior high school. *International Journal on Emerging Mathematics Education*, *1*(2), 193-204. http://dx.doi.org/10.12928/ijeme.v1i2.6683
Widodo, S. A., Nayazik, A., & Prahmana, R. C. I. (2019, March). Formal student thinking in mathematical problem-solving. In *Journal of Physics: Conference Series* (Vol. 1188, No. 1, p. 012087). IOP Publishing. https://doi.org/10.1088/1742-6596/1188/1/012087
Yu, M., Cui, J., Wang, L., Gao, X., Cui, Z., & Zhou, X. (2022). Spatial processing rather than logical reasoning was found to be critical for mathematical problem-solving. *Learning and Individual Differences*, *100*, 102230. https://doi.org/10.1016/j.lindif.2022.102230
Zairisma, Z., Apriliani, V., & Yunus, J. (2020). Mathematical Representation Ability of Middle School Students through Model Eliciting Activities with STAD Type. Desimal: Jurnal Matematika , 3(2), 109-116. https://doi.org/10.24042/djm.v3i2.5751