Jurnal Theorems (*The Original Reasearch Of Mathematics*)
Volume 9, Nomor 2, Januari 2025
URL: http://ejournal.unma.ac.id/index.php/th

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

ANALYSIS OF STUDENTS MATHEMATICAL UNDERSTANDING OF MATHEMATICAL MODELING CONCEPTS

Desniarti[1], Ramawati[2]
[12]Mathematics Education, Al-Washliyah Nusantara Muslim University, Indonesia;
desniarti82@gmail.com, ramaawati28@gmail.com

***Corresponding Author**:**
Ramawati
Al-Washliyah Nusantara Muslim University
Jl. Garu II No.93, Sitirejo III, Medan Amplas,
Kota Medan, Sumatera Utara 20147, Indonesia
E-mail: ramaawati28@gmail.com
Contact Person: 0822-4973-1997

Article Info:
Received 2024-12-11
Revised 2024-12-24
Accepted 2024-12-30

How to Cite:
Desniarti., Ramawati. (2025). Analysis Of Students Mathematical Understanding Of Mathematical Modeling Concepts. *Jurnal Theorems (The Original Research of Mathematics*, *9*(2), 210-221.

ABSTRACT

Mathematical modeling is a process for producing mathematical models. This process requires analysis, creativity and precision to create the right mathematical model for the problem to be solved. In mathematical modeling, mathematical formulas, principles and concepts are also needed to understand patterns and provide solutions to problems. This research is motivated by the importance of mathematical understanding of mathematical modeling concepts. The aim of this research was to analyze the mathematical understanding abilities of students at SMPS HKBP Pulo Brayan class VIII in mathematical modeling material.The research subjects were 20 students in class VIII of a private junior high school in the city of Medan. The research methodology used is a qualitative case study type by analyzing student answers and interview results. The instruments used were mathematical understanding ability tests and interview sheets. Tests are used to provide a more in-depth explanation of students' mathematical understanding abilities, while interviews are used to check answers to questions that students have worked on. The results obtained were that students with high abilities had high mathematical understanding abilities with a percentage of 75%, students with medium abilities had moderate mathematical understanding abilities with a percentage of 20%. And students with moderate abilities have moderate mathematical understanding abilities with a percentage of 5%. In other words, students with high abilities have high mathematical understanding abilities. students with moderate abilities have moderate mathematical understanding abilities, and students with low abilities have low mathematical understanding abilities.

Keywords: Mathematical Understanding, Mathematical Modeling, Ability

INTRODUCTION

Mathematics is the science that underlies technological development and has an important role in developing human thinking power (Sumarno, 2017). According to (Nursyeli, 2021) Mathematics is the science that underlies technological development and has an important role in developing human thinking power. An effort that can be made to produce good, quality and reliable human resources through education is through the learning process, one of which is learning mathematics (Destiniar, 2019). One of the goals of mathematics learning to be achieved is to provide the widest possible opportunities for students to develop communication skills through modeling or demonstrating, speaking or speaking, writing, discussing and drawing as well as presenting what they have learned.

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

(Jusniani, 2021). The abilities that are essential for students to face the challenges of the 21st century include the ability to think critically and creatively, the ability to communicate effectively, the ability to innovate, the ability to solve problems, and the ability to collaborate (Mashudi, 2021). The importance of providing students with problem-solving skills is one of the main competencies in preparing a superior generation that is ready to compete in facing the challenges of the 21st century (Kurniawati, 2019). The learning material applied is expected to be able to apply real situations with the aim of students being able to relate everyday problems to mathematics so that students' understanding abilities can increase (Aminah, 2018). Through the application of daily problems with story questions related to mathematics, students understand more about the material being taught (Agustina, 2019).

One of the abilities that students must learn and master during the mathematics learning process in class is arguing mathematically, in this case including understanding proof, knowing how to prove, following and assessing a series of arguments, having the ability to use strategies, and compiling arguments (Hartatiana, 2011). Competence to build mathematical models is currently an important part of a person's competence (Sekerak, 2010). Mathematics learning learned at school should be packaged practically so that students are able to understand mathematical concepts well considering the importance of mathematics learning for students (Aulia, 2023). Understanding a concept is the result of a person's thinking activity in understanding the concept. Understanding mathematical concepts is a competency that students must have in understanding a mathematical concept so that they can explain the concept in their own words (Sirait, 2017).

The ability to understand mathematical concepts is a very important ability to master so that students can understand a concept from a material flexibly and precisely in understanding the different steps of the material and can use it efficiently (Dini, 2018). through understanding concepts can help students to understand what is meant, be able to find ways to express these concepts, and be able to explore possibilities related to solving problems (Hakim, 2019). According to (Harefa, 2020) students' understanding of learning concepts, namely:

a. Define concepts verbally and in writing
b. Identify and create examples and non-examples
c. Using models, diagrams and symbols to present a concept
d. Changing a place of representation to another form
e. Get to know the various meanings and interpretations of concepts
f. Identifying the properties of a concept and recognizing the conditions that determine a concept
g. Compare and contrast the concepts

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

The low understanding of concepts is because students have difficulty in restating the concepts they have learned and in determining the steps used in solving problems (Setiawan, 2017). Students are involved in cognitive activities and connecting mathematical concepts with each other which requires students' cognitive skills to master the material and use it to solve various kinds of mathematical problems which are called mathematical abilities (Pesona, 2018). In order to achieve mathematics learning with argumentation skills, learning is needed that can improve students' argumentation abilities, namely by learning mathematical modeling. The ability to show mathematical representations always appears in mathematics learning. Therefore, representations must be prioritized and embedded in the mathematics teaching process at school (Goldin, 2020).

Mathematical modeling is the process of changing or representing problems in the real world in mathematical form in an effort to find a solution to a problem (Ang, 2006). Abstract mathematics learning needs to be adapted to students' cognitive abilities. Efforts are needed to concretize abstract mathematical objects so that they are easy to understand (Nurak, 2020). High-level thinking skills are needed in the process of solving mathematical problems, which can encourage students to become high-quality human resources who are able to solve simple and complex problems (Fitria, 2018). A teacher must build a classroom community conducive to creating effective learning so that students are free to express their thoughts such as expressing ideas, creating models, and organizing and connecting their mathematical thinking through communication (Lukitasari, 2021). In mathematics learning, problem solving skills are the basic skills of learning activities and cannot be separated because they contribute to everyday problem solving (Annisa, 2021).

Mathematical models are products or results of mathematical modeling in the form of abstract representations in the form of symbols, equations, graphs, tables, diagrams or other mathematical images that represent problems outside of mathematics (Muzaki, 2019). Students still have difficulty in transforming sentences into mathematical models and there is a lack of assignment of applied concepts, resulting in difficulty in formulating strategies that must be used (Febriliyani, 2018). The use of mathematical problems as a means of helping students to gain the ability to solve challenges, both mathematical and related to everyday life (Nurfatanah, 2018). One way to find out students' mathematical ideas is by giving students writing assignments (Pohan, 2023). The way students understand and absorb information is influenced by differences in student learning styles (Wicaksono, 2021). The thinking process is an activity that takes place in the human brain to understand the thinking process of students when solving a problem and the need for a problem that can stimulate their thinking process (Kusaeri, 2018). (Nu'man, 2019) States that one of the factors that influences the thinking process is self-awareness. In mathematics learning, self-awareness is defined as a condition that questions oneself regarding strategies, systems, logic and rationality in solving mathematical problems

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

(Anggoro, 2021). Through the thinking process, students can help educators determine what treatment needs to be given to students to overcome difficulties in solving problems. (Muliawati, 2018).

METHODS

This research uses a qualitative approach carried out in junior high schools. The aim and objective of this research is to describe students' mathematical understanding abilities reviewed based on their abilities in solving mathematical modeling problems. Data collection in this research used a mathematical understanding ability test and interview guidelines. The sample used in the research was 20 class VIII students at SMPS HKBP Pulo Brayan. The sample consisted of 14 male students and 4 female students. The instruments given to students were 2 questions regarding Mathematical Modeling and each question represented an indicator of mathematical understanding ability.

The sampling technique in this research uses purposive sampling, namely the researcher determines sampling by determining special characteristics that are in accordance with the research objectives so that they can answer the problem. Research subjects were selected according to a test of mathematical understanding ability which was grouped based on student ability, namely high, medium and low ability levels. Therefore, there were 20 subjects in this study consisting of 10 students with high abilities, 7 students with medium abilities, and 3 students with low abilities. The research was carried out using a triangulation method with students' understanding of the test results confirmed through interviews. The process of determining the subject begins by providing a mathematical understanding ability test instrument that has gone through validity and reliability tests. Through this, subjects are obtained with high, medium and low levels of mathematical understanding ability. The mathematical understanding ability test consists of 2 items. If a student gets a score greater than 75%, then the student is considered to have strong mathematical understanding abilities. classified as having a moderate level of mathematical understanding if 55%–75%. Meanwhile if students ≤55 are classified as having low mathematical abilities. This is the main focus in data collection, this is based on research (Mitasari & Murtiyasa, 2023). This is instrument is carried out through a written test. After that, the instrument results were summarized, selected from each category of high, medium and low mathematical understanding ability.

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

FINDINGS

The test of mathematical understanding ability in mathematical modeling material is classified by percentage based on the score obtained by the research subject (Nursaadah, 2018).

Table 1. Categories of Mathematical Understanding Ability

Percentage (%)	Category
>75%	Tall
55% ≥ 75%	Currently
≤ 55%	Low

The interview guide used in this research was prepared based on indicators of mathematical understanding ability. This table provides a classification of students' mathematical understanding abilities into three categories based on the percentage of achievement. Students who obtain a percentage of more than 75% are placed in the High category, indicating that they have excellent mathematical understanding and are able to meet most of the indicators measured. Furthermore, the Medium category includes students with a percentage between 55% to 75%, which means they have sufficient mathematical understanding, although there is still room for improvement in certain aspects. Finally, students with a percentage of 55% or less fall into the Low category, indicating that they require special attention and additional learning strategies to improve their understanding of mathematical concepts. This table makes it easier to group students based on their level of understanding so that it can become the basis for developing more effective and targeted teaching strategies.

Table 2. Indicators of Achievement in Mathematical Modeling

Indicators of Student Achievement in Understanding Mathematical Modeling	Mathematical Understanding Ability Category		
	Tall	Currently	Low
Restating the Concept	Ten people	Seven people	Three people
Provide Examples and Non-Examples of Concepts	Seven people	Four people	Nine people

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

Classify, utilize, objects according to their properties	Six people	Eleven people	Three people
Using, utilizing, and selecting a procedure or operation	Nine people	Five people	Six people
Apply concepts or algorithms in problem solving	Twelve people	Four people	Four people

There are quite striking differences in the achievement of understanding indicators between male and female students. On the Restating Concepts indicator, the majority of students succeeded in doing very well, which is reflected in the high number of students who fell into the high category. This shows that the majority of students have a strong understanding of the mathematical concepts that have been taught. This ability reflects good mastery of the material, especially in understanding and remembering the essence of the concepts being taught. In contrast to the previous indicator, in the indicator Providing Examples and Not Examples of Concepts, there is a significant gap. Most of the students, namely 9 people, were in the low category. This condition indicates that many students have difficulty understanding how to provide examples that are relevant to the concepts being studied, as well as distinguishing them from examples that are not appropriate. This imbalance indicates a need to strengthen students' analytical skills and practical understanding of mathematical concepts.

Meanwhile, in the indicator of Classifying and Utilizing Objects Based on Their Properties, the majority of students (11 people) are in the medium category. This shows that the majority of students are quite capable of identifying and grouping mathematical objects according to their properties or characteristics. Even though they have demonstrated adequate ability, this achievement is still at an intermediate level, indicating there is potential for improvement so that more students can reach the high category. A learning approach that is more focused on the application of concepts can help students optimize their ability to classify and utilize mathematical objects. In the indicators Using, Utilizing, and Selecting Procedures or Operations, the results show variations in student abilities. Students who fall into the high category are able to choose appropriate mathematical procedures or operations quite well. However, there were a number of students (6 people) who were in the low category, which indicated difficulties in understanding or applying these procedures and operations correctly. Meanwhile, in the Applying Concepts or Algorithms in Problem Solving indicator, the results obtained are the most prominent. Most of the students (12 people) were in the high category, which shows their ability to

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

properly apply mathematical concepts and algorithms in solving problems. However, there are still some students who are in the medium and low categories, who need more attention to improve their skills in this aspect.

Table 3. Characteristics of interview subjects

Student (gender)	Mathematical understanding ability category		
	Tall	Currently	Low
Man	M1	R1	S1
Woman	M2	R2	S3

Description: Selected research subjects

Male students with high mathematical understanding abilities (M1) tend to be superior in describing complete mathematical modeling problems compared to female students with similar abilities (M2). Even though both are in the high category, male students show superiority in explaining mathematical modeling problems in more detail and depth. On the other hand, male and female students in the medium (S1, S2) and low (R1, R2) categories have not been able to describe mathematical modeling problems in their entirety. This shows that the ability to describe problems completely is still a characteristic of students in the high category, while students in the medium and low categories require improvement in this aspect.

DISCUSSION

According to research conducted by (Afriweni, Miyarni, & Sarkowi, 2021) the classification of ability to understand mathematics is based on the percentage obtained from student scores. By categorizing students into three levels, High, Medium, and Low, it helps them determine how they understand and use mathematics. This is critical to making educational interventions effective.

1. Category: High Mathematical Understanding Ability Category:

- More than 75%

of students in this category show very good mathematical understanding ability. They can apply these ideas in a variety of situations and meet most of the indicators measured. To improve the capabilities of this group and challenge their potential, they need development activities.

- Category Medium (55%–75%)

Students falling under this range display sufficient understanding but still have difficulty in grasping specific topics. They can close these gaps with the aid of targeted teaching techniques. They gain from practice under supervision and strengthening of their weaker areas.

- Category Low (≤55%)

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

These pupils have a very difficult time grasping mathematical ideas. They need special care, which includes remediation, individualized instruction, and extra assistance. The secret to raising their performance is to pinpoint their unique difficulties.

2. Measures of Mathematical Modeling Success

In the context of mathematical modeling, the study lists a number of measures to gauge students' mathematical comprehension:

- Reiterating the Idea

Ten participants demonstrate that the majority of students in the High category are able to accurately articulate mathematical concepts. In the Medium and Low categories, this skill declines, suggesting that fundamental conceptual understanding has to be reinforced.

- Giving Conceptual Examples and Non-Examples

With nine people having difficulties, students in the Low group have the greatest difficulties with this indication. It emphasizes how important it is to concentrate on their capacity to differentiate between legitimate and illegitimate instances of mathematical ideas.

- Using Properties to Classify and Use Objects

Eleven students in the Medium category participate the most, indicating that while they have a basic comprehension, they can benefit from focused instruction to strengthen their classification and application abilities.

- Employing and Choosing Methods or Activities

Students in the High group perform quite well on this metric, but those in the Low category need a great deal of assistance in order to choose and use the proper techniques.

- Using Ideas or Algorithms to Solve Problems

Given that 12 people exhibit competency, this indicator is a strength for students in the High group. Students in the Medium and Low groups, however, exhibit comparable difficulties, highlighting the significance of focused problem-solving exercises.

3. Qualities of the Interview Subject

Interview subjects were chosen to be representative of all genders and classifications.

- High Category: Consists of a male (M1) and a female (M2) who both possess exceptional mathematics comprehension.
- Medium Category: Consists of one female (R2) and one male (R1) with modest skill levels.
- Low Category: Indicates substantial difficulties with mathematical ideas and consists of one man (S1) and one female (S3).

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

This distribution gives a balanced viewpoint while analyzing the difficulties and assets of pupils in various groups.

Based on the interview results, it can be concluded that there is no significant difference in mathematical understanding abilities between male and female students as a whole. Even though there are differences in ability between categories (high, medium, low), gender is not a determining factor in mathematical understanding ability. Both male and female students have relatively equal potential, although there are variations in how they describe problems, especially in the high ability category.

4. Implications for Methods of Instruction

Designing focused instructional strategies is based on the classification system and indicator analysis:

High Category: Offer enrichment activities to foster sophisticated problem-solving abilities and a deeper comprehension.

Medium Category: To get these kids into the High category, concentrate on their areas of weakness through practice and guided instruction.

Low Category: Use remedial sessions, scaffolding strategies, and individualized learning plans to address particular difficulties and promote a fundamental comprehension of mathematical ideas.

By ensuring that instructional efforts are customized to meet the demands of each category, this methodical approach eventually improves students' overall mathematical ability.

CONCLUSION

From the results of the analysis and interviews, it can be concluded that the majority of students in class VIII SMPS HKBP Pulo Brayan have a good mathematical understanding of several indicators, although there is room for improvement, especially in the lower ability categories. The most visible difficulties are in providing examples of concepts and describing the problem completely. Although there are some differences in the way of describing problems between male and female students, it is not a major factor in determining students' mathematical understanding. This shows that with the right approach, both men and women have equal potential in mastering mathematical concepts.

SUGGESTION

To improve the mathematical understanding of class VIII students at SMPS HKBP Pulo Brayan, especially the ability to provide examples of concepts and describe problems completely, it is recommended to use real problem-based learning methods that involve group discussions and case studies. This approach allows male and female students to work together, utilizing different ways of thinking to complement each other. In addition, the use of visual media and interactive technology can

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

help students understand abstract concepts more concretely. Regular evaluations are also important to identify student progress and provide appropriate intervention according to their needs.

REFERENCE

Afriweni, G., Miyarni, I., & Sarkowi. (2021). Perbedaan Hasil Belajar Sejarah dengan Menggunakan Model Pembelajaran Student Facilitator and Explaining dan Mind Mapping Kelas X Di SMA Plus Bina Satria Rupit. Historial Studies Journal, 5(1), 15-25.

Agustina. (2019). Analisis kemmapuan pemahaman siswa dalam menyelesaikan soal cerita program linear di kelas XI. GAUSS: jurnal pendidikan matematika, 1-12.

Aminah. (2018). Analisis kesulitan siswa dalam menyelesaikan soal cerita matematika topik pecahan ditinjau dari gender. JTAM/ Jurnal teori dan aplikasi matematika, 118.

Ang, K. C. (2006). Mathematical Modelling,Technology and H3 Mathematic (Vol. 9). Palembang: Program PascaSarjana UNSRI.

Anggoro. (2021). Mathematical-Analytical Thinking skills: The Impacts and interactions of open-ended Learning Method & Self-awareness (its application on bilingual test instruments). Al-Jabar: Jurnal pendidikan matematika, 12, 89-107.

Annisa. (2021). Analisis kemampuan pemecahan masalah matematis siswa SMP berdasarkan gender. Jurnal kependidikan: Jurnal hasil penelitian dan kajian kepustakaan di bidang pendidikan,pengajaran dan pembelajaran, 481-490.

Aulia, D. N. (2023). Penerapan Model cooperative learning tipe STAD untuk meningkatkan kemampuan pemahaman konsep matematika siswa sekolah dasar. journal of didactic mathematics, 52-57.

Destiniar. (2019). Kemampuan pemahaman konsep matematis ditinjau dari self efficacy siswa dan model pembelajaran think pair share (TPS) di SMP Negeri 20 Palembang. JPPM, 12.

Dini. (2018). Pengaruh self confidence terhadap kemampuan pewmahaman matematik siswa SMP. JURNAL SILOGISME: Kajian ilmu matemtika dan pembelajarannya, 3, 1-7.

Febriliyani. (2018). Proses berfikir siswa dalam menyelesaikan masalah barisan dan deret aritmatika. Math Didactic: Jurnal pendidikan matematika, 180-189.

Fitria, R. (2018). Analisis Kemampuan Pemecahan Masalah Matematis siswa pada materi aritmatika sosial kelas VII SMP dalam pembelajan matematika. Jurnal Pendidikan Tambusai, 786-792.

Goldin. (2020). mathematical representations. jakarta: springer international publishing.

Hakim. (2019). Analisis kemampuan pemahaman konsep materi segitiga dan segiempat pada siswa SMP. Prosiding seminar nasional matematika dan pendidikan matematika sesiomadika, 1015-1026.

Harefa, D. T. (2020). Belajar berfikir dan bertindak secara praktis dalam dunia pendidikan kajian untuk

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

akdemis. mataram: CV.Insan Cendekia Mandiri.

Hartatiana. (2011). Pengembangan soal pemecahan masalah berbasis argumen untuk siswa kelas v di SD Negeri 79 Palembang. Palembang: Program PascaSarjana UNSRI.

Jusniani. (2021). Penerapan model pembelajaran generatif untuk meningkatkan kemampuan komunikasi matematis siswa. Jurnal ilmiah matematika realistik, 12-19.

Kurniawati. (2019). Peningkatan kemempuan pemecahan masalah untuk mempersiapkan generasi unggul menghadapi tantangan abad 21. seminar nasinal pascasarjana, 21, 702.

Kusaeri. (2018). Proses berfikir siswa dalam menyelesaikan masalah matematika berdasarkan teori pemrosesan informasi. suska journal of mathematics education, 4, 125-141.

Lukitasari. (2021). Model pembelajaran berdasarkan masalah melalui digital argumentation. PBM-DA: CV. AE MEDIA GRAFIKA.

Mashudi. (2021). Pembelajaran modern: membekali peserta didik keterampilan abad ke-21. AL-mudarris (jurnal ilmiah pendidikan islam), 4, 93-114.

Mitasari, D., & Murtiyasa, B. (2023). Analisis kemampuan pemecahan masalah matematis siswa dalam menyelesaikan soal ccerita pada materi aritmatia sosial berdasarkan langkah polya. Jurnal Cendekia: Jurnal pendidikan matematika, 7(2), 1759-1772.

Muliawati. (2018). Proses berfikir mahasiswa dalam memecahkan masalah pembuktian grup berdasarkan langkah polya. JP2M(Jurnal pendidikan dan pembeljaran matematika), 4, 32-42.

Muzaki, A. &. (2019). Analisis Kemampuan Literasi Matematis Siswa. Mosharafa:Jurnal Pendidikan Matematika, 8, 493-502.

Nu'man. (2019). Self-awareness siswa madrasah aliyah dalam pembelajaran matematika. Jurnal pengembangan pembelajaran matematika (JPPM), 1, 51-58.

Nurak, Y. (2020). Penggunaan media visual untuk meningkatkan pemahaman konsep irisan bidang dengan bangun ruang pada siswa kelas X-A SMA Negeri 8 Kupang. MEGA:Jurnal pendidikan matematika, 1, 100;109.

Nurfatanah. (2018). Kemampuan pemecahan masalah matematika siswa sekolah dasar. Jakarta: in prodising seminar dan diskusi pendidikan dasar.

Nursaadah, I. &. (2018). Analisis Kemampuan Pemahaman matematis Peserta didik SMP Pada materi segiempat dan segitiga. Jurnal Numeracy, 5, 1-9.

Nursyeli, F. &. (2021). Studi Etnomatematika pada candi cangkuang leles garut jawa barat. Plusminus: Jurnal Pendidikan matematika, 1, 327-338.

Pesona. (2018). Deskripsi kemampuan matematika siswa dalam pemecahan masalah sistem persamaan linear dua variabel berdasarkan level taksonomi SOLO. Jurnal genta mulia, 99-109.

Pohan. (2023). Penerapan pembelajaran model eliciting activities (MEA) dengan pendekatan saintifik untuk meningkatkan kemampuan representasi matematis dan kemandirian belajar siswa. Jurnal

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

Cendekia:Jurnal pendidikan matematika, 3350-3363.

Sekerak. (2010). Phases of mathematical modelling and competenceof high school students. Theaching of mathematic, 13, 105-112.

Setiawan. (2017). Pengaruh discovery learning terhadap pemahaman konsep matematis siswa. pendidikan matematika, 1027-1039.

Sirait, E. D. (2017). Pengaruh gaya dan kesiapan belajar terhadap pemahaman konsep matematika siswa. Formatif : Jurnal ilmiah pendidikan MIPA, 7, 207-218.

Sumarno, U. (2017). Hard skill dan soft skill matematika siswa. bandung: PT Refika Aditama.

Utami, N. I. (2021). Analisis kemampuan pemahaman konsep matematis siswa pada materi komposisi fungsi. Jurnal Ilmiah pendidikan matematika, 10, 1-13.

Wicaksono, A. .. (2021). Kemampuan pemecahan masalah geometri berbasis budaya ditinjau dari gender dan gaya belajar. AKSIOMA: Jurnal program studi pendidikan matematika, 10, 240-251.