EMTEKA: Jurnal Pendidikan Matematika
Volume 6, No. 1, 2025. 419-432
DOI: https://doi.org/10.24127/emteka.v6i1.7486

e-ISSN 2746-5594
p-ISSN 2746-5608

ANALYSIS OF MATHEMATICAL REASONING ABILITY IN TWO-VARIABLE LINEAR EQUATIONS BASED ON STUDENTS' EMOTIONAL INTELLIGENCE

Adya Nazwa Muktiara[1], Redi Hermanto[2], Siska Ryane Muslim[3*]

[1, 2, 3*]Universitas Siliwangi, Kota Tasikmaya, Jawabarat, Indonesia.
*Corresponding author. Jl. Siliwangi No. 24 Kahuripan Kota Tasikmalaya 46115, Jawabarat, Indonesia.

E-mail: adya.nazwa20@gmai.com [1]
redihermanto@unsil.ac.id [2]
siskaryanemuslim@unsil.ac.id [3*]

Received 27 February 2025; Received in revised form 26 March 2025; Accepted 27 March 2025

ABSTRACT
This study aims to analyze mathematical reasoning ability in terms of emotional intelligence in solving SPLDV material problems. The indicators used are proposing conjectures, manipulating mathematics, providing reasons or evidence for the correctness of the answer, and drawing conclusions. The research method used is qualitative, with research subjects consisting of 3 students of class VIII-G SMPN 1 Karangnunggal. The instruments used include interviews, emotional intelligence questionnaires, and one mathematical reasoning ability test question. The data collection stages consist of the results of interviews with teachers regarding emotional intelligence, emotional intelligence questionnaires, reasoning ability test results, and data from interviews with students who have filled out the reasoning ability questions. The data collected is simplified to make accurate conclusions. The results of the study show that students with high emotional intelligence can meet all indicators and can solve problems correctly. Students with moderate emotional intelligence can meet 3 indicators of mathematical reasoning ability, namely being able to propose conjectures, being able to manipulate mathematics, and being able to provide reasons or evidence for the correctness of the answer. Students with low emotional intelligence are only able to meet two of the four indicators of mathematical reasoning studied, namely being able to propose conjectures and being able to manipulate mathematics.
Keywords: emotional intelligence; equations; mathematical reasoning

ABSTRAK
Penelitian ini bertujuan untuk menganalisis kemampuan penalaran matematis ditinjau dari kecerdasan emosional dalam menyelesaikan soal materi SPLDV. Indikator yang digunakan mengajukan dugaan, memanipulasi matematika, memberikan alasan atau bukti dalam kebenaran jawaban, dan menarik kesimpulan. Metode penelitian yang digunakan adalah kualitatif, dengan subjek penelitian terdiri dari 3 siswa kelas VIII-G SMPN 1 Karangnunggal. Instrumen yang digunakan meliputi wawancara, angket kecerdasan emosional, satu soal tes kemampuan penalaran matematis. Tahapan pengumpulan data terdiri dari hasil wawancara dengan guru mengenai kecerdasan emosional, angket kecerdasan emosional, hasil tes kemampuan penalaran, dan data dari wawancara dengan siswa yang telah mengisi soal kemampuan penalaran. Data yang terkumpul disederhanakan untuk membuat kesimpulan yang akurat. Hasil penelitian menunjukkan bahwa siswa dengan kecerdasan emosional tinggi mampu memenuhi semua indikator dan dapat menyelesaikan soal dengan benar. Siswa dengan kecerdasan emosional sedang mampu memenuhi 3 indikator kemampuan penalaran matematis yaitu mampu mengajukan dugaan, mampu memanipulasi matematika, dan mampu memberikan alasan atau bukti dalam kebenaran jawaban. Siswa dengan kecerdasan emosional rendah hanya mampu memenuhi dua indikator dari empat indikator penalaran matematis yang diteliti yaitu mampu mengajukan dugaan dan mampu memanipulasi matematika.
Kata kunci: *kecerdasan emosional; persamaan; penalaran matematis.*

EMTEKA: Jurnal Pendidikan Matematika
Volume 6, No. 1, 2025. 419-432
DOI: https://doi.org/10.24127/emteka.v6i1.7486

e-ISSN 2746-5594
p-ISSN 2746-5608

Introduction

One of the subjects that is not just reasoning or memorizing but requires a high level of focus in the learning process is mathematics (Jayanti et al., 2020). Mathematics is knowledge about logical reasoning and is related to numbers (Farid, 2022). From elementary school to high school, mathematics is one of the main subjects (Kamarullah, 2017). Maoto, Masha, and Mokwana (2018) explained that according to the statement of the National Council of Teachers of Mathematics (NCTM), mathematics learning needs to be combined with reasoning skills. It can be concluded that in learning mathematics, it is important to integrate or combine reasoning skills.

Reasoning is a way of thinking used to conclude (Konita et al., 2019). Mathematical reasoning ability according to Marsitin & Sesanti (2023) is an approach to solving mathematical problems by identifying problems, providing justification or reasons, and drawing conclusions. In addition, according to Asdarina & Ridha, (2020), reasoning is a thinking process that tries to connect known facts to a conclusion. Mathematical reasoning ability is the result of students' interaction with abstract mathematical concepts, then applied to solve problems and provide an understanding of how mathematical concepts are formed (Salam et al., 2023).

In mathematics learning, mathematical reasoning skills play a very important role. This is in line with the opinion of Amin, Prabawanto, and Martadiputra (2023), who explained that mathematical reasoning skills are key to understanding learning materials. Students with good mathematical reasoning skills will find it easier to understand the concepts taught, while students with poor reasoning skills tend to have difficulty understanding the material. However, the reality shows that students' mathematical reasoning skills are generally still relatively low. According to Lestari, Subanji, and Irawati (2022), the mathematical reasoning skills of Indonesian students can be said to be still lacking. This can be seen through the results of mathematics research in TIMS (Trends in International Mathematics and Science Study) in 2015, which showed that the average percentage of students' correct answers in mathematical reasoning ability only reached 20, while international results reached 44. Research results from Endrawati & Ramlah, (2021) explain that students' reasoning abilities are still relatively suboptimal. The results of this study show that of the 4 students they observed, only 2 of them understood at least 2 of the 3 indicators of mathematical reasoning ability.

Emotional intelligence is also important in learning mathematics (Noer et al., 2022). Emotional intelligence is a combination of cognitive and affective processes where emotions can be a factor in the development of mental processes that help in learning, and having emotional intelligence can mean the possibility of achieving goals (Psyche & Baltazar, 2022). Meanwhile, Patton (Sarnoto & Romli, 2019) explains that emotional intelligence is the ability to understand, manage, and use emotions effectively to achieve goals and build productive relationships. Not only that, according to Muhtadi, Pujiriyanto, Kaliky, Hukom, and Samal (2022) said that

e-ISSN 2746-5594
p-ISSN 2746-5608

emotional intelligence is identified as being able to improve students' academic achievement and a person's abilities.

According to Rohmah and Soebagyo (2022) emotional intelligence can be grouped into three categories, namely high, medium, and low emotional intelligence. According to Wuwung, (2020), people with high emotional intelligence can control and identify their emotions, feel their own emotions, understand the reasons behind feelings, avoid impulsive behavior, accept other people's opinions, show empathy or sensitivity to other people's feelings, and listen to others. Measuring emotional intelligence can be done by giving a questionnaire, to measure emotional intelligence according to (Goleman, 1996) there are indicators in the questionnaire, namely 1) Recognizing one's own emotions, 2) Managing emotions, 3) Motivating oneself, 4) Empathy, and 5) Building relationships with the surrounding environment.

Facts in the field based on the results of observations that have been carried out at SMPN 1 Karangnunggal, Tasikmalaya Regency, and carried out in class VIII show that the reasoning abilities possessed by students are not optimal, few students can solve mathematical reasoning problems but if they are often given examples, students can solve reasoning problems. In addition, based on the results of interviews, students' emotional intelligence varies. Mathematical reasoning abilities and emotional intelligence are interrelated because mathematical reasoning abilities are strongly supported by emotional maturity such as self-awareness, self-management, social awareness, relationship skills, and decision-making abilities. Through interviews that have been conducted with mathematics teachers at SMPN 1 Karangnunggal, mathematics learning that is often considered difficult by students is the System of Linear Equations in Two Variables (SLETV) material, from the results of the interview students have difficulty in applying mathematical concepts and number operations. SLETV is one of the topics of mathematics lessons about the relationship between one variable and another (Purnamasari & Riska, 2020). According to Anwar and Asriani (2018), SLETV is useful for everyday life.

Mathematical reasoning ability and emotional intelligence are interrelated in mathematics learning. Hajar, Sofyan, and Amalia, (2021) showed that students with high emotional intelligence can solve mathematical reasoning ability problems well, make logical conclusions, and predict answers and steps for completion. Students who have low emotional intelligence are only able to answer with 2 indicators of reasoning ability, students can make logical conclusions, and provide explanations but students are not able to solve problems with 2 indicators, namely submitting conjectures and solution processes. However, students with low emotional intelligence cannot solve problems but students are only able to 1 indicator, namely concluding.

Based on the description above, this study aims to determine the mathematical reasoning ability of the System of Linear Equations in Two Variables (SLETV) in terms of students' emotional intelligence.

Research Methods

This study uses a qualitative descriptive research method. According to Sugiyono (2013), qualitative research is a research approach based on the

e-ISSN 2746-5594
p-ISSN 2746-5608

philosophy of postpositivism and the descriptive research method is a research approach that aims to provide an independent description of the condition or value of one or more variables. This method is used to investigate the natural situation of the research object.

In this study, data collection was carried out by observation at school, then interviews with teachers to determine the category of students' emotional intelligence into high, medium, and low. After that, the researcher distributed an emotional intelligence questionnaire to validate the results of the interviews with teachers. This study to test the validity of the data was carried out using the method triangulation technique. According to Suparman (2020), method triangulation is an approach that involves additional researchers or observers to verify the level of data trust through a re-examination process.

Based on the results of interviews with teachers and questionnaire results, students who have the same emotional intelligence category are given a mathematical reasoning ability test. Furthermore, interviews with students who have worked on the mathematical reasoning ability test questions, in this study the type of interview used is an unstructured interview. An unstructured interview is a question and topic of discussion developed directly by the interviewer, an unstructured interview is flexible, where researchers do not follow interview guidelines that have been systematically prepared (Sugiyono, 2019). The last step is documentation. The subjects in this study were students of class VIII-G SMPN 1 Karangnunggal in the 2023/2024 academic year.

To test the validity of the data, triangulation techniques are used. To check the mathematical reasoning ability and emotional intelligence, triangulation method techniques are used. Triangulation method is an approach that involves additional researchers or observers to verify the level of data trust through a re-examination process (Saleh, 2017).

In this study, the instruments used were an emotional intelligence questionnaire and mathematical reasoning ability test questions. According to Rohmah and Soebagyo (2022), emotional intelligence is categorized into 3, namely high, medium, and low emotional intelligence. The categories used in this study are as follows in Table 1.

Table 1. Emotional intelligence categories

Categories	Scale
High	$X > 104$
Medium	$74 > X < 104$
Low	$X < 74$

Mathematical reasoning ability test data were analyzed to determine the achievement of the mathematical reasoning ability indicator category. To describe the results of the mathematical reasoning ability test, it can be known through the criteria for the subject's ability to answer questions that meet the mathematical reasoning ability indicators outside of right or wrong answers and can communicate well in conveying information.

EMTEKA: Jurnal Pendidikan Matematika
Volume 6, No. 1, 2025. 419-432
DOI: https://doi.org/10.24127/emteka.v6i1.7486
e-ISSN 2746-5594
p-ISSN 2746-5608

Results and Discussion

In this section, the researcher analyzes, describes, and concludes the students' mathematical reasoning ability on the material of two-variable linear equation systems in terms of students' emotional intelligence. This study began with an interview with a mathematics teacher to categorize students' emotional intelligence, the teacher recommended 6 students to be categorized as emotional intelligence. After the interview, the researcher distributed an emotional intelligence questionnaire to validate the categorization results from the interview results. Based on the results of the interview and questionnaire, there were 2 students with high emotional intelligence, 2 students with moderate emotional intelligence, and 1 student with low emotional intelligence. After emotional intelligence was categorized, students were given mathematical reasoning ability test questions. The following are the results of the mathematical reasoning ability test can be seen in Table 2.

Table 2 Mathematical Reasoning Ability Test Results

Subject Code	**Emotional Intelligence Categories**	**Mathematical Reasoning Ability Indicators**			
		1	2	3	4
S-5	Medium	√	√	×	×
S-11	Low	√	√	×	×
S-16	Medium	√	√	√	×
S-21	High	√	√	√	√
S-23	High	√	√	√	√

Based on Table 2, the subjects taken were S-11, S-16, and S-21. This is because these subjects were able to meet the indicators of mathematical reasoning ability and were able to communicate well to provide information.

Furthermore, the discussion of the research results is to describe mathematical reasoning ability in terms of high, medium, and low emotional intelligence. The discussion of the results of this study is as follows.

1. Mathematical Reasoning Ability Reviewed from High Emotional Intelligence

Subject S-21 with high emotional intelligence, can solve mathematical reasoning ability questions correctly, S-21 can meet all indicators of mathematical reasoning ability. For more details, see the following picture and interview results.

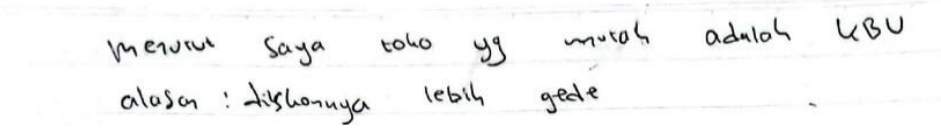


Figure 1. Indicators proposing conjectures S-21

Based on Figure 1, it can be seen that S-21 can make assumptions, S-21 can guess which store is cheaper and provide reasons for his assumptions. For a more in-depth analysis, the following interviews were conducted.

P : "Can you compare the prices of the two stores?"
S-21 : "Yes, but wrong, sis"

EMTEKA: Jurnal Pendidikan Matematika
Volume 6, No. 1, 2025. 419-432
DOI: https://doi.org/10.24127/emteka.v6i1.7486
e-ISSN 2746-5594
p-ISSN 2746-5608

P : "How is the comparison?"
S-21 : "The cheaper one in my opinion is KBU"
Based on the interview results, S-21 can make assumptions.

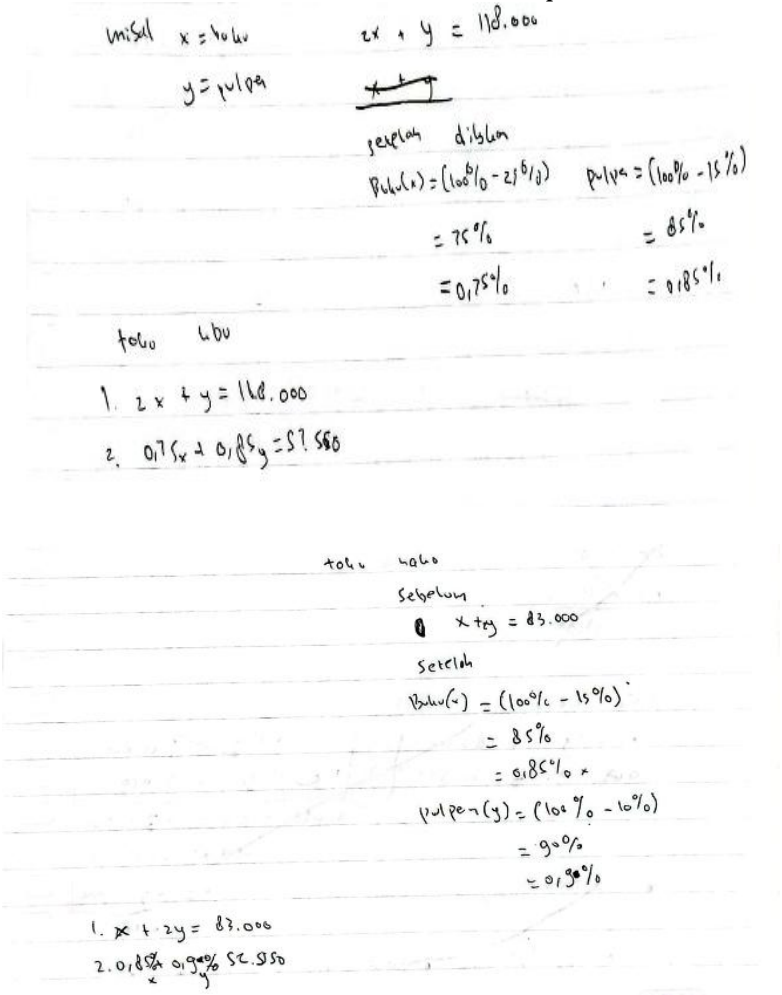
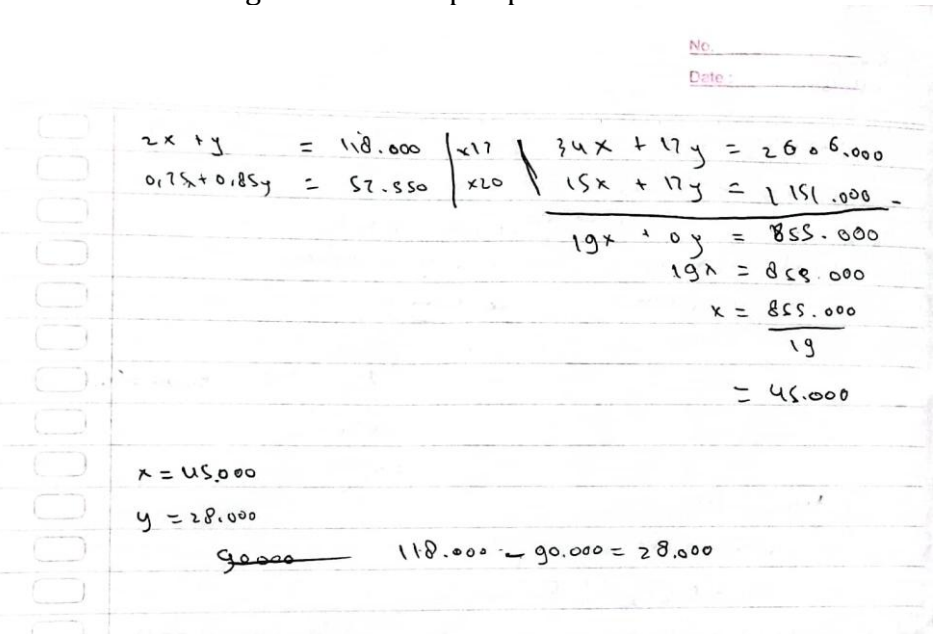


Figure 2 Indicator mathematics manipulation S-21

Based on Figure 2, the results of the answers to the indicator of manipulating mathematics, S-21 can manipulate mathematics, S-21 can make equations by assuming first and then calculating the discount so that it can make equations. For a more in-depth analysis, the following interviews were conducted.
P : "How do you solve the problem?"
S-21 : " First suppose, sis"
P : "How do you assume it?"
S-21 : "Assume x = book, y = pen, then make an equation"
Based on the interview results, S-21 can manipulate mathematics.

EMTEKA: Jurnal Pendidikan Matematika
Volume 6, No. 1, 2025. 419-432
DOI: https://doi.org/10.24127/emteka.v6i1.7486
e-ISSN 2746-5594
p-ISSN 2746-5608

Looking for book and pen prices at Naco store



Looking for book and pen prices at KBU store

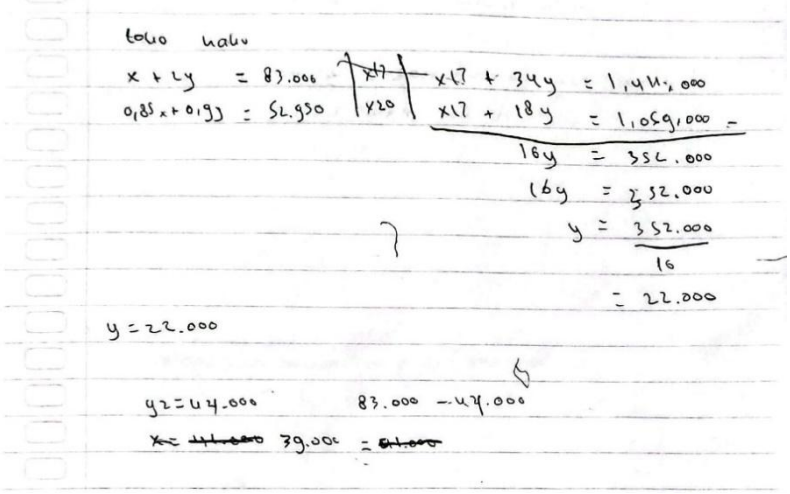


Figure 3 Indicators Providing Reasons or Evidence for the Correctness of the Answer S-21

Based on Figure 3, the results of the answers to the indicator providing reasons or evidence for the correctness of the answer, S-21 can solve the problem in the question of calculating the price of books and pens in a shop, so that it can prove which shop is cheaper.

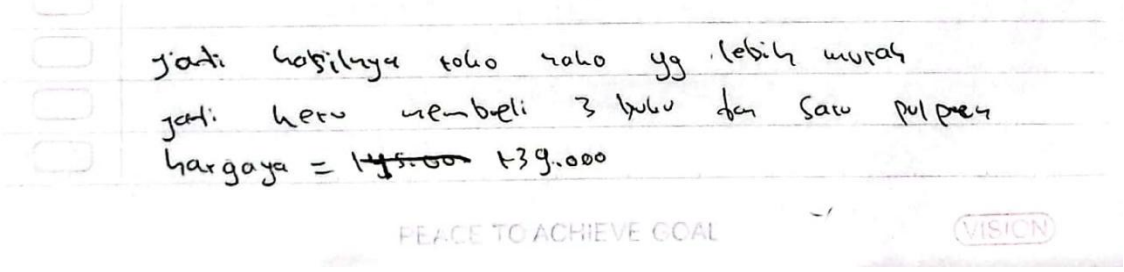


Figure 4. Indicators drawing conclusions S-21

e-ISSN 2746-5594
p-ISSN 2746-5608

Based on Figure 4, the results of the answers to the indicator of concluding S-21 can conclude from the results of his answers which store is cheaper and the total price of the question on sial or 3x + y. For a more in-depth analysis, the following interview was conducted.

P : "What is the conclusion of the results of your work"
S-21 : "So the results are the NACO store which is easier, so Heru bought 3 books and a pack of pens for Rp. 139,000.
P : "Are the results proven by the initial guess which store is cheaper?"
S-21 : "No, sis, initially I KBU which is cheaper because I only saw the bigger discount, I didn't see the price."

Based on the results of the interview on the indicator of concluding, S-21 can conclude well which store is cheaper and the total price to buy 3 books and a pack of pens at the cheaper store and realizes that the results of his guesses and work results are not proven.

Based on the results of S-21's answers and the results of the interview, it can be concluded that S-21 can meet all indicators of mathematical reasoning ability. S-21 can make assumptions, manipulate mathematics, and provide reasons or evidence for the correctness of the answers, and can conclude. S-21 is also able to solve problems correctly. In line with previous researchers, namely F. F. Rohmah & Soebagyo, (2022) explained that students with high emotional intelligence can meet all indicators well and have superior reasoning problem-solving abilities compared to students who have moderate or low emotional intelligence.

2. Mathematical Reasoning Ability Reviewed from Medium Emotional Intelligence

Subject S-16 with moderate emotional intelligence was able to fulfill 3 indicators of mathematical reasoning. For more details, see the following picture and interview results.

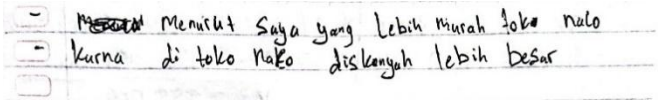


Figure 5 Indicator Proposing Conjectures S-16

Based on Figure 5, the test results on the indicator of making assumptions, subject S-16 was able to make assumptions and provide reasons for his assumptions. For a more in-depth analysis, the interview was conducted as follows.

P : "Can you compare the prices of the two stores?"
S-16 : "Yes, Naco is cheaper"
P : "What is your reason for guessing that NACO is cheaper"
S-16 : "Naco has a bigger discount"

Based on the interview results, subject S-16 was able to make assumptions about which store was cheaper, and was able to provide reasons for his assumptions.

EMTEKA: Jurnal Pendidikan Matematika
Volume 6, No. 1, 2025. 419-432
DOI: https://doi.org/10.24127/emteka.v6i1.7486
e-ISSN 2746-5594
p-ISSN 2746-5608

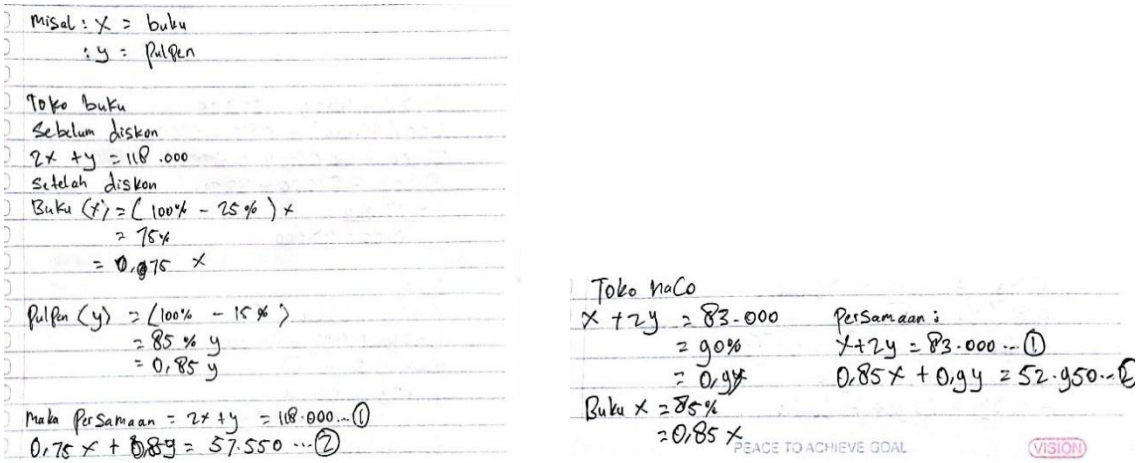
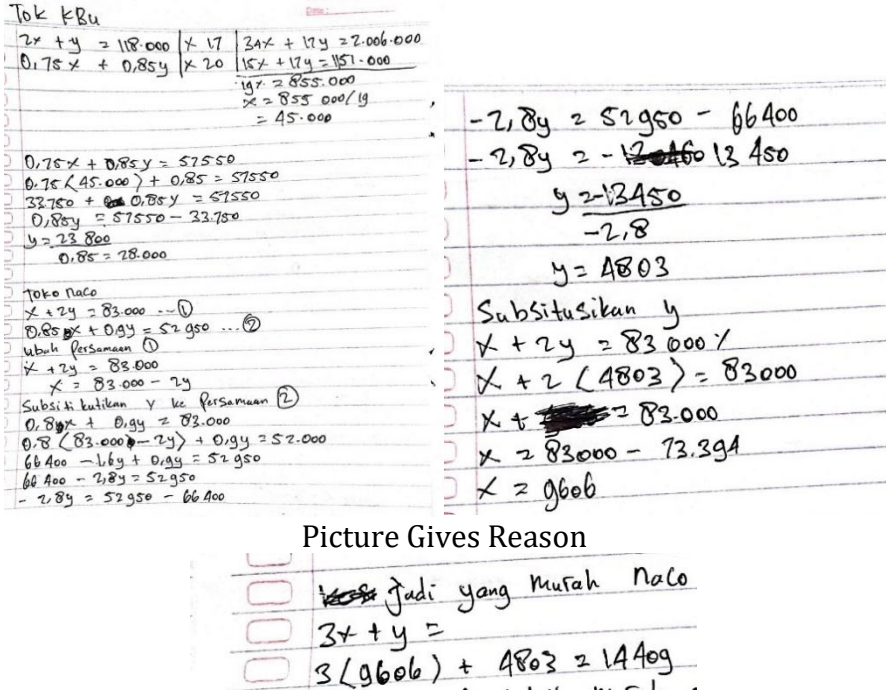


Figure 6 Indicator mathematics manipulation S-16

Based on Figure 6, the mathematical manipulation indicator, subject S-16 can make analogies, write equations, and calculate discounts to create new equations, thus demonstrating the ability to manipulate mathematics from the given questions. To conduct a more in-depth analysis, the following interview was conducted.

P : "How do you solve the problem?"
S-16 : "First, assume the book is x, pen is y, then immediately make an equation"
P : "How do you make the equation"
S-16 : "Just enter it, sis, 2 books and a pen cost 118,000 so 2x + y = 118,000, all the steps are the same, sis"

Based on the results of the interview, students can manipulate mathematics from the problem statement by assuming the price of a book and the price of a pen, then students can make an equation from the analogy.



Picture Gives Reason

Pictures Provide Evidence

Figure 7. Indicators Providing Reasons or Evidence for the Correctness of the Answer S-16

EMTEKA: Jurnal Pendidikan Matematika
Volume 6, No. 1, 2025. 419-432
DOI: https://doi.org/10.24127/emteka.v6i1.7486
e-ISSN 2746-5594
p-ISSN 2746-5608

Based on Figure 7, the test results, subject S-16 was able to provide reasons for his work, namely by finding the value of x (book price) and y (pen price) from each store and was able to provide evidence of the results of his work that he had done by substituting the price of books and pens in cheaper stores into the equation asked. For a more in-depth analysis, the following interview was conducted.

P : "After calculating the value of x and y, which store is cheaper?"
S-16 : "NACO"
P : "How do you know that store is the cheapest?
S-16 : "Because the total price is less than 150,000
P : "How do you calculate the total price?"
S-16 : "The method is 3x + y so 3 times the value of x plus the value of y"

Based on the results of the interview, S-16 was able to provide evidence of the correctness of his answer, namely that the result was less than Rp. 150,000.00.

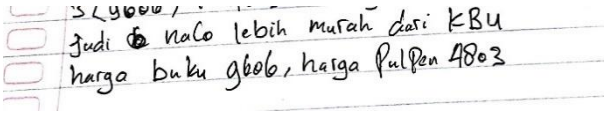


Figure 8. Indicators drawing conclusions S-16

Based on the Figure 8. results of the answers of subject S-16 on the indicator of concluding, S-16 was able to conclude from the results of the work that he had done but not completely. For a more in-depth analysis, the following interview was conducted.

P : "What is the conclusion from the results of your work?"
S-16 : "So NACO is easier than KBU, with a book price of 9,606, and a pen 4,803"
P : "Are the results proven by the initial assumption?"
S-16 : "It is proven, sis, that NACO is cheap."
P : Why is there no total amount if you buy 3 packs of books and one pack of pens?
S-16 : "I don't know, sis"

Based on the results of the interview, the student was unable to conclude from the results of his work because the conclusion was incomplete, so it can be said that S-16 was unable to conclude. Contrary to the results of previous researchers that students with moderate emotional intelligence were able to conclude (Nurfadilah et al., 2024)

Based on the picture of the answer results and interview results, S-16 was able to fulfill 3 indicators of mathematical reasoning, namely being able to submit conjectures, being able to manipulate mathematics, and being able to provide reasons or evidence for the correctness of the answer. However, S-16 showed shortcomings in accuracy and number operations, which sometimes resulted in errors in the final results.

3. Mathematical Reasoning Ability Reviewed from Low Emotional Intelligence

Subject S-11 with low emotional intelligence was unable to solve the problem completely. S-11 was also only able to fulfill 2 indicators of mathematical reasoning ability. For more details, see the following picture and interview results.

EMTEKA: Jurnal Pendidikan Matematika e-ISSN 2746-5594
Volume 6, No. 1, 2025. 419-432 p-ISSN 2746-5608
DOI: https://doi.org/10.24127/emteka.v6i1.7486

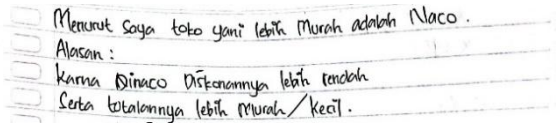


Figure 9. Indicators proposing conjectures S-11.

Based on Figure 9, S-11 can guess by guessing which store is cheaper and can provide reasons for his guess. For a more in-depth analysis, the following interview was conducted.

P : "Can you compare the prices of the two stores?"
S-11 : "KBU is cheaper"
P : "What is your reason that KBU is cheaper"
S-11 : "Because the total price is cheap and the discount is low"

Based on the interview results S-11 can make a guess.

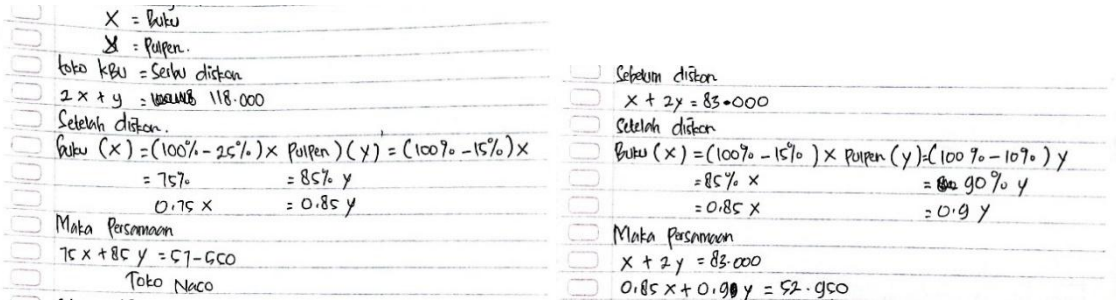


Figure 10. Indicator mathematics manipulation S-11

Based on Figure 10, student's answers to the mathematical manipulation indicator show that students can manipulate mathematics by making an example first so that they can form an equation.

P : "How do you solve the problem?"
S-11 : "First, change the book to be the same as x, and the pen is the same as y"
P : "Oh, let's make an example first, what are the next steps?"
S-11 : "Yes, sis, let's make an example, calculating the discount from books and pens."

Based on the interview results, S-11 can manipulate mathematics.

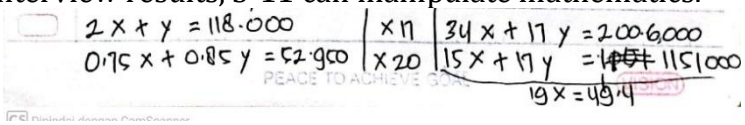


Figure 11. Indicators providing reasons or evidence for the correctness of the answer S-11

Based on Figure 11, the answer of subject S-11 on the indicator of providing reasons or evidence for the truth of the answer shows that S-11 is only able to find the value of x at the KBU store. This indicates that S-11 is unable to provide sufficient reasons or evidence for the truth of his answer. S-11 is unable to solve the problem and is unable to conclude. For a more in-depth analysis, the interview was conducted as follows.

P : "Didn't you look for the value of y and the value of x, y at the Naco store?
S-11 : "No, because I can't."

e-ISSN 2746-5594
p-ISSN 2746-5608

P : "Can you provide a conclusion from the results of your answer?"
S-11 : "I can't, sis"

Based on the results of the interview, S-11 was unable to provide reasons or evidence for the results of his answer, besides that S-11 was unable to conclude.

Based on the results of the test answers and interview results, S-11 was only able to meet 2 indicators of mathematical reasoning ability, namely being able to make conjectures and manipulate mathematics. This is in contrast to previous researchers Hajar, S, Sofyan, & Amalia, R. (2021) students with low emotional intelligence tend to only be able to meet one indicator of mathematical reasoning ability, namely the ability to conclude. This shows that emotional intelligence has a significant relationship with mathematical reasoning ability. When students' emotional intelligence is low, they may have difficulty coping with emotional stress in solving mathematical problems that require deep thinking and systematic problem solving. As a result, their mathematical reasoning ability is limited.

Conclusion and Suggestion

Based on the results of the study, this study concludes that subject 21 (S-21) with high emotional intelligence can fulfill all indicators of mathematical reasoning ability, namely being able to submit conjectures and being able to provide reasons for the results of his conjectures, being able to manipulate mathematics, being able to provide reasons or evidence in the correctness of the answer by proving that the result is less than the known value in the question, and being able to conclude. Subject 21 was also able to answer the question correctly. Subject 16 (S-16) who has low emotional intelligence managed to fulfill 3 indicators of mathematical reasoning ability, namely being able to submit conjectures and provide reasons for the results of his conjectures, being able to manipulate mathematics by making equations, being able to provide reasons or evidence in the correctness of the answer and being unable to conclude because he was unable to conclude completely. Subject 11 (S-11) with low emotional intelligence was only able to fulfill 2 indicators of mathematical reasoning ability, namely the ability to submit conjectures, and being able to manipulate mathematics. S-11 was also unable to solve the problem.

Based on the research findings and analysis that have been done, the researcher provides several suggestions as follows: a) To enrich the understanding of mathematical reasoning, researchers can choose a category of reasoning ability to focus on research such as inductive or deductive reasoning. b) Teachers can carry out activities that encourage emotional management and teamwork in solving math problems. Thus, students can train their emotional intelligence so that students can solve mathematical reasoning ability problems. c) Students need to practice emotional intelligence such as training themselves to manage emotions, training themselves to have self-motivation so that they have a sense of responsibility, and can focus on the tasks being done. Therefore, students can solve mathematical reasoning problems. Suggestions present things related to this research or that will be done related to further ideas from the research.

Reference

Amin, M. M., Prabawanto, S., & Martadiputra, B. A. P. (2023). Peningkatan Kemampuan Penalaran Matematis Siswa dengan Metode Pembelajaran Priject-Based Learning. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, *12*(2),

1873–1882. https://doi.org/https://doi.org/10.24127/ajpm.v12i2.6550.

Anwar, B., & Asriani. (2018). Penerapan Pembelajaran Problem Solving untuk Meningkatkan Aktivitas dan Hasil Belajar Matematika pada Materi SPLDV. *Jurnal Pendidikan Matematika*, *4*(2), 224–239. https://doi.org/10.36709/jpm.v4i2.2035

Asdarina, O., & Ridha, M. (2020). Analisis Kemampuan Penalaran Matematis Siswa Dalam Menyelesaikan Soal Setara Pisa Konten Geometri. *Numeracy*, *7*(2), 192–206. https://doi.org/10.46244/numeracy.v7i2.1167

Endrawati, P., & Ramlah. (2021). Analisis Kemampuan Penalaran Matematis pada Materi Peluang Ditinjau dari Kemampuan Awal Siswa. *Maju*, *8*(2), 148–158. https://ejournal.stkipbbm.ac.id/index.php/mtk/article/view/712

Farid, M. (2022). Sejarah Matematika Yunani. *Jurnal Ilmiah Dan Sosial*, *23*(02), 1–19. http://ojs.iai-darussalam.ac.id/index.php/darussalam%0ASEJARAH

Goleman, D. (1996). *Buku Emotional Intelligence*. Gramedia Pusat Utama.

Hajar, S., Sofyan, & Amalia, R. (2021). Analisis Kemampuan Penalaran Matematis Siswa Dalam Menyelesaikan Soal Open-Ended Ditinjau Dari Kecerdasan Emosional. *Jurnal Ilmiah Matematika Realistik*, *2*(2), 32–36. https://doi.org/10.33365/ji-mr.v2i2.1413

Jayanti, I., Arifin, N., & Nur, D. R. (2020). Analisis faktor internal dan eksternal kesulitan belajar matematika di sekolah dasar. *Sistema: Jurnal Pendidikan*, *1*(1), 2. https://jurnal.fkip-uwgm.ac.id/index.php/sjp

Kamarullah. (2017). Pendidikan Matematika Di Sekolah Kita. *Al Khawarizmi: Jurnal Pendidikan Dan Pembelajaran Matematika*, *1*(1), 21. https://doi.org/10.22373/jppm.v1i1.1729

Konita, M., Asikin, M., & Asih, T. S. N. (2019). Kemampuan Penalaran Matematis dalam Model Pembelajaran Connecting, Organizing, Reflecting, Extending (CORE). *PRISMA,Prosiding Seminar Nasional Matematika*, *2*, 611–615. https://journal.unnes.ac.id/sju/index.php/prisma/

Lestari, M., Subanji, S., & Irawati, S. (2022). Analisis Kemampuan Penalaran Matematis Siswa SMA Pada Materi Matriks. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, *11*(1), 550. https://doi.org/10.24127/ajpm.v11i1.4577

Maoto, S., Masha, K., & Mokwana, L. (2018). Teachers' Learning and Assessing of Mathematical Processes with Emphasis on Representations, Reasoning and Proof. *Pythagoras*, *39*(1), 1–10. https://doi.org/10.4102/pythagoras.v39i1.373

Marsitin, R., & Sesanti, N. R. (2023). Developing an Electronic Module Based on Mathematical Literacy to Enhance Students' Mathematical Reasoning. *Jurnal Elemen*, *9*(1), 197–210. https://doi.org/10.29408/jel.v9i1.6915

Muhtadi, A., Pujiriyanto, Kaliky, S., Hukom, J., & Samal, D. (2022). A Meta-Analysis: Emotional Intelligence and its Effect on Mathematics Achievement. *International Journal of Instruction*, *15*(4), 745–762. https://doi.org/10.29333/iji.2022.15440a

Noer, S. H., Gunowibowo, P., & Triana, M. (2022). Pengaruh Kecerdasan Emosional Dan Kemampuan Awal Terhadap Kemampuan Komunikasi Matematis Siswa Dalam Pembelajaran Online. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, *11*(1), 482. https://doi.org/10.24127/ajpm.v11i1.4464

Nurfadilah, S., Ratnaningsih, N., & Nugraha, D. A. (2024). *Analisis Kemampuan*

e-ISSN 2746-5594
p-ISSN 2746-5608

Penalaran Matematis ditinjau dari Kecerdasan Emosional Pada Materi Dilatasi. *3*(2), 170–174. https://jurnal.unsil.ac.id/index.php/kongruen

Psyche, L., & Baltazar, T. (2022). Emotional Intelligence and Analytical Problem-Solving Skills of Students in General Mathematics. *International Journal of Innovative Science and Research Technology*, *7*(4), 981–996. https://doi.org/https://doi.org/10.5281/zenodo.6555356

Purnamasari, A., & Riska. (2020). Model Pembelajaran Osborn Pada Materi Sistem Persamaan Linear Dua Variabel (SPLDV). *Jurnal Pendidikan Pemuda Nusantara*, *2*(1), 9–17. https://jurnal.stkipm-pagaralam.ac.id/index.php/jppn

Rohmah, F. F., & Soebagyo, J. (2022). Investigasi Kemampuan Penalaran Siswa dalam Menyelesaikan Soal Matematika SMP. *Proximal: Jurnal Penelitian Matematika Dan Pendidikan Matematika*, *5*(2), 149–158. https://doi.org/https://doi.org/10.30605/proximal.v5i2.1854 Halaman

Salam, M., Hasnawati, H., Andini, I. A. P., Suhar, S., & Lambertus, L. (2023). Analisis Kemampuan Penalaran Matematis Siswa Ditinjau dari Kemampuan Awal. *AKSIOMA*, *12*(2), 2351–2362. https://doi.org/https://doi.org/10.24127/ajpm.v12i2.7448

Saleh, S. (2017). *Analisis Data Kualitatif* (H. Upu (ed.)). Pustaka Ramadhan.

Sarnoto, A. Z., & Romli, S. (2019). Pengaruh Kecerdasan Emosional (Eq) Dan Lingkungan Belajar Terhadap Motivasi Belajar Siswa Sma Negeri 3 Tangerang Selatan. *Andragogi: Jurnal Pendidikan Islam Dan Manajemen Pendidikan Islam*, *1*(1), 55–75. https://doi.org/10.36671/andragogi.v1i1.48

Sugiyono. (2013). *Buku Metode Penelitian Kuantitatif, Kualitatif dan R&D*. Alfabeta.

Suparman, U. (2020). *Buku Bagaimana Menganalisis Data Kualitatif*. Pustaka Media.

Wuwung, O. C. (2020). *Buku Strategi Pembelajaran dan Kecerdasan Emosional* (N. Azizah (ed.)). Scopindo Media Pustaka.