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Concept Understanding Students on the Material of Two-Variables Linear Equation System in Terms of Mathematics Ability

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Abstract

The purpose of this study was to describe the concept understanding ability of students in solving the problem of two-variable linear equation system. The method used is descriptive qualitative research. The subject of this research was 3 students taken from 26 students of class VIII SMPN 1 Balaesang. The results showed that the concept understanding of high mathematics ability students in restating concepts can restate concepts well using their own language, identify examples and non-examples and classify objects according to certain properties in accordance with the concept that can make mathematical modelling and determine equations and use the right solution steps according to the concept algorithmically. The concept understanding of medium ability students in restating concepts has been able to state concepts using their own sentences, identify examples and non-examples and are still lacking in classifying objects according to certain properties in accordance with the concept. The concept understanding of low ability students has not been able to achieve all indicators of concept understanding. Therefore, concept understanding is very important to be mastered by every student and the role of the teacher in facilitating the ability of each student.

Keywords: Concept Understanding, Two-Variable Linear Equation System, Maths Ability

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INTRODUCTION

Education is a process of learning and learning that aims to improve students' knowledge, skills and attitudes. According to Wahyuningsih sriwati (2019) learning is an active process in gaining new experience or knowledge. Mathematics is one of the compulsory subjects studied at the education level.

The objectives of learning mathematics stated in Permendikbud No.22 of 2016 are that students are able to understand mathematical concepts, describe how the relationship between mathematical concepts and apply concepts or logarithms efficiently, flexibly, accurately, and precisely in solving problems (Permendikbud, 2016). This shows that understanding mathematical concepts is one of the most important things that every student must master. Learning mathematics requires an understanding of the concepts taught, thus requiring students to be able to master one basic ability, namely the ability to understand concepts (Cahani & Effendi, 2019).

One of the mathematics materials that students learn is the system of linear equations of two variables based on the 2013 curriculum. In solving the problem of the system of linear equations of two variables, a good understanding of the concept is needed to be able to apply the procedure easily. Therefore, it is important for students to understand mathematical

concepts so that in learning students will find it easier to solve a problem from the material taught. In fact, students' concept understanding in the material of the system of linear equations of two variables is still low. In line with research conducted by Siki, dkk. (2021) that students' concept understanding is still relatively low.

Based on the results of interviews with one of the mathematics teachers at SMPN 1 Balaesang, information was obtained that students' understanding of concepts in the material of the system of linear equations of two variables was still low. This is indicated by students having difficulty in solving mathematical problems whose solutions involve various concepts and students also make mistakes in working on various problems and have not been able to solve problems properly. However, the teacher does not know for sure the characteristics of students in understanding the concept of the system of linear equations of two variables when solving problems. Therefore, the teacher has not been able to provide appropriate and appropriate learning strategies that can improve students' concept understanding abilities. According to research conducted by Azzahra (2019) the causes of student errors in solving mathematics problems are students' difficulty in changing the right form of mathematical sentences, haste, lack of accuracy, forgetting, and not understanding the problem.

Students' concept understanding needs to be profiled so that teachers can know the picture of students' understanding of mathematics concepts. This is important because, a description of concept understanding can help teachers know students' understanding of concepts, as well as how students solve mathematics problems, especially the material of the system of linear equations of two variables. So that this knowledge can be used as a reference for teachers in designing strategies, approaches, learning models that are in accordance with the problems faced by students when learning takes place and determining effective methods in helping and improving understanding of mathematical concepts in students.

The concept understanding picture is also influenced by one's ability level. If students do not have this ability, then students will have difficulty absorbing mathematics material during learning (Pujakusuma & Pramuditya, 2023). According to Jarmita in Murtianto, et al. (2019) that the level of students' ability to understand the meaning or concept based on the situation and facts they know. In line with Malikha & Amir (2018) stated that everyone has different abilities in learning mathematics. This means that the description of the understanding of students with high mathematical ability is likely to be different from students with moderate ability and students with low ability. Therefore, in designing mathematics learning, teachers must pay attention to the abilities of each student. By knowing the description of students' concept understanding based on their ability level, teachers can find out where students' difficulties in understanding concepts lie.

This study aims to obtain a description or description of students' concept understanding of two-variable linear equation system material based on mathematical ability expressed through words or writing. Concept understanding profile in terms of mathematical ability (Gani, et al. 2020) entitled the profile of students' concept understanding in terms of mathematical ability level. This is in line with research conducted by Sari, et al. (2022) who analysed the ability to understand mathematical concepts of the material of the system of linear equations of two variables in terms of learning independence. Research conducted by (Khairunnisa & Aini 2019) analysed the ability to understand mathematical concepts in solving the problem of the system of linear equations of two variables with the results of the subject solving the problem of the system of linear equations of two variables is still categorised as lacking.

Based on the results of previous studies, researchers conducted research on students' concept understanding to find out the description of students' understanding of mathematics concepts on the material of the system of linear equations of two variables with research subjects of students with high, medium and low mathematics abilities using indicators of concept understanding by Kilpatrick in (Rahayu and Pujiastuti, 2018) namely restating concepts that have been learned, identifying examples and not examples, classifying objects

according to certain properties in accordance with the concept, namely, (1) presenting concepts; (2) applying or applying concepts algorithmically. This research is considered important because the research results are more focused on the material of the system of linear equations of two variables with three different levels of mathematical ability.

METHOD

The form of research used is descriptive qualitative. Descriptive qualitative is a research procedure that produces descriptive data in the form of written or spoken words from people and observed behaviour. The research subjects were selected based on the daily test scores analysed from 26 students of class VIII D and 3 students were selected to be interviewed. Data were taken from written tests and interviews. This research used the time triangulation method to test the credibility of the data. Time triangulation is one of the data credibility testing techniques by obtaining data from the same source at different times.

The research subjects selected based on the concept understanding indicators were then categorised into three levels: high, medium and low. The basic criteria for categorising the research subjects and the selected subjects are presented in Tables 1 and 2.

Table 1. Research Subject Categorization Criteria

Interval	Maths ability criteria
KM ≥ 86,07	High
65,9 ≤ KM < 86,07	Medium
KM < 65,9	Low

Table 2. Research Subjects

No.	Subject Code	Score	Ability Level
1	KT	95	High
2	KS	80	Medium
3	KR	60	Low

The research instrument used 3 questions that were prepared based on indicators of concept understanding according to Kilpatrick in (Rahayu and Pujiastuti, 2018) namely, 1) Restate concepts that have been learnt, 2) Identifying examples and not examples, 3) Classifying objects according to certain properties in accordance with the concept, namely, (1) Presenting concepts; (2) Applying or applying concepts algorithmically. The test instrument is presented below.

1. Explain the meaning of a system of linear equations of two variables
2. Which of the following are and are not examples of a system of linear equations of two variables? Give the reason!

a. $\begin{cases} 2^2 + 5y = 12 \\ 6x + 12y = 24 \end{cases}$

b. $\begin{cases} 3x + y = -5 \\ 5^2 + 3y = 4 \end{cases}$

c. $\begin{cases} 3x + 5y = 12 \\ 9x + 15y = 24 \end{cases}$

d. $\begin{cases} 3^2 + 2 = 5 \\ 4x + 10y = 6 \end{cases}$

3. There is an empty tube weighing 50 grams. material X with the amount of metal A and metal B proportional to 1: 2 is put into the tube so that it weighs 70 grams. If material Y which contains a mixture of metal A and metal B in the ratio 2 : 1 is put into the tube, the weight becomes 75 grams. What is the total weight of the tube if material X, which contains metal A and metal B in a ratio of 1 : 1, is added?

Figure 1. Test questions for concept understanding ability

The data analysis techniques used in this study according to Miles, dkk. (2014) include:

Data Condencation

Data condensation refers to the process of selecting, focusing, simplifying, abstracting or transforming data that appears in all parts of written field notes, interview transcripts, documents and other empirical material. In this study, the condensed data is summarising the data obtained from the results of interviews and the results of work on student answer sheets which then the data is summarised with the aim of providing a clear picture and making it easier for researchers in further data collection.

Data Display

In this study, the presentation of data that has been condensed is presented in the form of narratives or descriptions of groups of high mathematics ability, medium mathematics ability, and low mathematics ability so that it is more organised, arranged which will provide the possibility of drawing conclusions and making decisions.

Conclucation Drawing/Verification

Conclusions are drawn after data condensation and data presentation. At this stage the researcher will draw conclusions when condensing the data obtained so that conclusions can be drawn and then verified.

RESULTS AND DISCUSSION

The results of the analysis of students' concept understanding ability in solving problems on the system of linear equations of two variables are as follows.

High Mathematical Ability Subject (KT)

The following are the results of the KT subject's answers

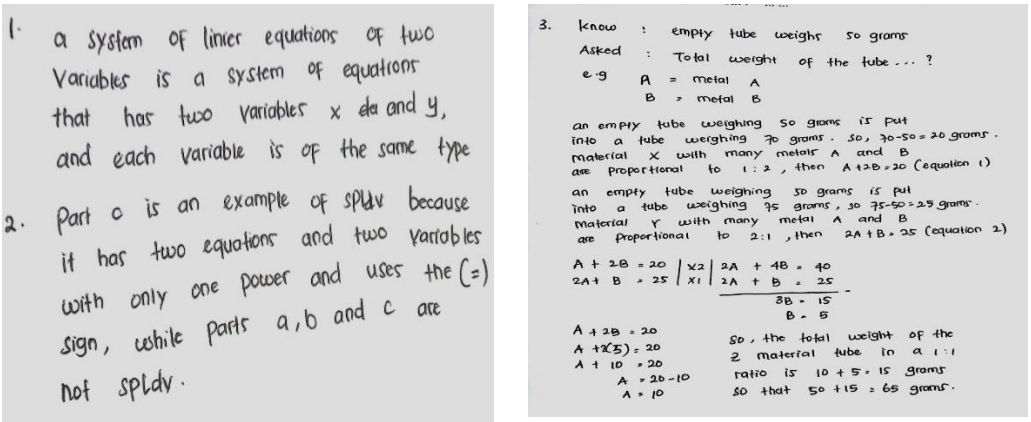

Figure 2. Written Task Answers of Subject KT

Restate Concepts That Have Been Learned

The results of KT's answers to question number 1 show that KT can write the concept of a system of linear equations of two variables in accordance with the meaning of the system of linear equations of two variables taught correctly. The following are the results of the KT subject interview number 1:

PN : What do you know about the system of linear equations of two variables?
KT : Yes, what I know about the system of linear equations of two variables is that it is a system of equations consisting of two equations and has two variables, namely x and y variables.
PN : Does it have to contain x and y variables?
KT : Yes, because x and y are the variables, but not necessarily x and y.
PN : What is a variable
KT : A variable is a memorization or value that can change like x and y.

The results of the interview showed that the KT subject could explain a two-variable linear equation system correctly, namely a system of equations consisting of two equations containing the variables x and y.

Identify examples and non-examples

The results of KT's answer to question number 2 show that KT can distinguish between examples and non-examples of a system of linear equations in two variables, namely writing that part c is a system of linear equations in two variables, while the other part is not a system of linear equations in two variables because the system of linear equations in two variables only has a rank. One. The following are the results of the KT subject interview for question number 2

PN : Try to explain which are examples and which are not examples of systems of linear equations in two variables?
KT : Which is an example of part c, which is not an example of a system of linear equations in two variables parts a, b and d
PN : Why do you answer part c, an example of a system of linear equations in two variables?
KT : Because it has two equations and two variables to the power of one
PN : That's the only reason?
KT : Oh yes, if he uses the sign (=)
PN : Why only use the sign (=)?
KT : Because this is an equation, I use (=)
PN : So what's the reason why it's not an example of a system of linear equations in two variables?
KT : The reason for parts a, b and d, is because they have more than one rank

The interview results showed that the KT subject explained examples and non-examples of a two-variable linear equation system, namely part c is an example of a two-variable linear equation system because it has two equations and two variables that have a power of one and uses the sign (=). KT also explains the reason the other part is not an example of a system of linear equations in two variables because it has a power of more than one.

Classifying Objects According to Certain Properties According to Their Concepts, namely, (1) Presenting Concepts; (2) Applying or Applying Concepts Algorithmically

The results of KT's answer to question number 3 show that KT solved the question by presenting the initial method, namely writing down what was known and asking. After that, KT wrote the equation A=metal A and B=metal B. Then KT wrote it into a mathematical model and produced equation 1, namely A+2B= 20 and equation 2, namely 2A+B= 25. The next step, KT applied the concept algorithmically, namely by writing down the steps in solving the problem using the elimination method and substitution method. After KT got the weight of tubes A=10 and B=5 with a ratio of 1:1, it was 10+5= 15 grams, so the weight of the tube that KT got was 50+15= 65. The following are the results of KT's subject interview on question number 3.

PN : Explain what you are asked to determine?
KT : Total tube weight
PN Can you present this problem in a mathematical model?
KT : Yes, I can
PN : How do you present questions in mathematical form?
KT : First, let me first understand the problem, what is known and what is being asked.

PN : So what are the next steps?
KT : After that I made an example, so I took the weight of metal A as A and the weight of metal B as B
PN : Why should it be an example?
KT : So I know which the variables
PN : Next, can you explain where equation 1 and equation 2 come from?
KT : From the question, for equation 1, it is known that the weight of the empty tube is 50 grams and material . Likewise, equation 2
PN : So what are the next steps?
KT : After I determined equation 1 and equation 2, first I used the elimination method, next I used the substitution method
PN : How do you eliminate?
KT : I removed one of the variables, so I got variable B, which is 5
PN : What about substitution?
KT : : If you substitute, I enter the variable B into one of the equations to get the value of variable A.
PN : Next?
KT : Next, because the total ratio of the tube is 1:1, so I add up the values of variables A and B to get 15 grams, then I add the total, so the total weight of the tube is 65 grams.

The interview results showed that the KT subject explained what he knew and was asked. Next, KT explained the mathematical model so that he got equations 1 and 2. Next, KT explained the steps for solving the problem based on the procedures that had been taught, namely the elimination and substitution method. After that, KT adds up the total tubes so that the answer obtained is correct.

Subjects with Medium Mathematical Ability (KS)
The following is the result of the KS subject's answer

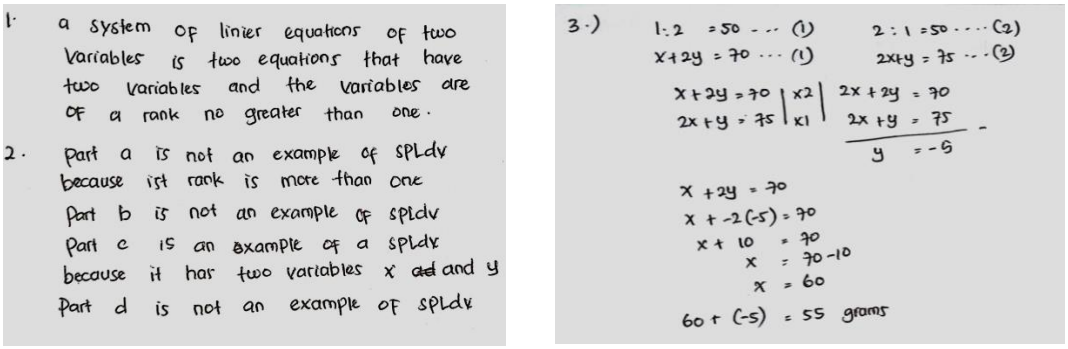

Figure 3. Written Task Answers of Subject KS

Restate the concepts that have been studied

The results of subject KS's answer to question number 1 show that KS is able to write down the meaning of a system of linear equations in two variables, namely a system of linear equations in two variables is two equations that have two variables whose rank is not more than one. The following are the results of the KS subject interview for question number 1.

PN : Explain again the definition of a system of linear equations in two variables?
KS : Two variable system of equations, that is, it has two equations and two variables
PN : Is that all?
KS : No, the variable has a rank of no more than one

PN : Apart from that, there is no other explanation?

KS : That's all I know, two equations and two variables whose powers are not more than one.

The results of the KS interview show that the KS subject can explain the meaning of a two-variable linear equation system, namely having two equations and two variables and the variable has a rank of no more than one.

Identifying examples and non-examples

The results of KS's answer to M1 question number show that KS identified an example of a two-variable linear equation system in part c because it has two variables x and y, while the other parts are not examples of a two-variable linear equation system. The following are the results of the KS subject interview on question number 2

PN : Explain which are examples and which are not examples of a system of linear equations in two variables?
KS : Example part c
PN : Only section c?
KS : Yes because it has two variables x and y
PN : The other parts also have x and y variabl
KS : The others are not because there are others that don't have variables and the rank is more than one

The results of KS's interview show that KS revealed examples and not examples of a system of linear equations in two variables, namely part c is an example of a system of linear equations in two variables because it has two variables x and y. KS explains that the other part is not an example of a system of linear equations in two variables because it does not have variables with powers greater than one.

Classifying Objects According to Certain Properties According to Their Concepts, namely, (1) Presenting the Concept; (2) Applying or Applying Concepts Algorithmically

The results of KS's answer to question number 3 show that KS was unable to write down the information from the question. First, KS wrote down an incorrect mathematical model of the system of linear equations in two variables given. KS applies the concept algorithmically, namely working using elimination and substitution methods but writing down the final result is wrong. The following are the results of the KS subject interview on question number 3

PN : Can you explain again how to present this question?
KS : I'm still confused about these comparisons
PN : So how do you get this equation?
KS : I'll just say x+2y=70 and 2x+y=75
PN : After that, what steps did you use?
KS : After I got the equation I used the elimination and substitution method
PN : Please explain how?
KS : First, equation 1 is multiplied by two and equation 2 is multiplied by one to eliminate one of the variables. After getting it, then I substituted it into equation one and got one of the variables again.
PN : Where did you get the final 55 grams?
KS : I add up the variable values 60+ (-5)= 55 grams

The results of the interview show that KS can explain when presenting the questions but is still confused about the steps to get the equation. KS explained the steps for solving

questions using the elimination and substitution method. The subject made a mistake in making the equation so that the final result for the KS subject was wrong.

Subjects with Low Mathematics Ability (KR)

The following is the result of the KR subject's answer

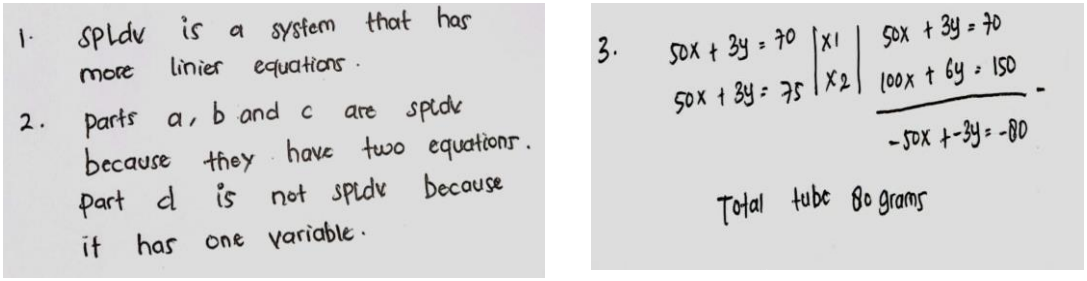

Figure 4. Written Task Answers of Subject KR

Restate the concepts that have been studied

The results of KR's answer to question number 1 show that KR wrote that a two-variable linear equation system is a system that has one or more linear equations and two variables. The following are the results of the interview with subject KR on question number 1

PN : What do you know about systems of linear equations in two variables?
KR : So a system of linear equations in two variables is a system that has one or more linear equations and two variables
PN : What if one equation is also a system of linear equations in two variables?
KR : No
PN : You answered one or more equations, so if it's two equations or three equations. Can it be said to be a system of linear equations in two variables too?
KR : Yes, maybe
PN : What do you understand?
KR : What I understand is an equation that has two variables

The results of the interview show that KR explained that a two-variable linear equation system is a system that has one or more equations and two variables. KR explained that he understood that a system of linear equations in two variables was an equation that had two variables and there could be more than two equations, so he did not properly understand the concept of a system of linear equations in two variables.

Identify examples and non-examples

The results of KR's answer to question number 2 show that KR wrote the wrong answer and was unable to provide a correct reason. The following are the results of the interview with subject KR on question number 1

PN : Please explain which are examples and which are not examples of systems of linear equations in two variables?
KR : Don't know
PN : Why did you answer a, b and c, a system of linear equations in two variables?
KR : I don't know, I'm just answering casually
PN : Part d is not an example of this spldv either?
KR : : I'm confused, I don't know

The results of the interview showed that KR could not explain what was and was not an example of a system of linear equations in two variables. Subject KR was also still confused when he was asked which was an example and which was not an example.

Classifying Objects According to Certain Properties According to Their Concepts, namely, (1) Presenting Concepts; (2) Applying or Applying Concepts Algorithmically

The results of KR's answer to question number 3 show that KR cannot present the concept algorithmically, namely in solving the question KR immediately answered without writing down what was known and asked first and without creating a mathematical model of a system of linear equations in two variables. KR also did not write down equation 1 and equation 2. Then KR also did not apply the concept algorithmically, KR immediately worked on it using the elimination method. Next, KR wrote down the wrong final result. The following are the results of subject KR's interview on M1 question number 3

PN : Next, for question number 3, can you present the question in a mathematical model?
KR : Don't know
PN : Can you explain why you can get 50x+3y=70 like this?
KR : I don't know, I just looked at the problem, initially it was 50 material X versus 1:2 so I increased it to 3y. then it went to 70 so I got it. Equation 1 becomes 50x+3y=70.
PN : If 50x+3y=75 is the same, is that how you do it?
KR : Yes, same as equation 1.
PN : So what are the next steps?
KR : I have got equation 1 and I have eliminated equation 2
PN : Where did the 80 grams come from?
KR : I don't know, I'm just making a mistake about my deduction results, because I don't understand

The results of the interview showed that KR admitted that he did not understand how to make mathematical models. KR also did not understand how to get equation 1 and equation 2. KR explained the steps for solving the problem using the elimination method and concluded that the final result was wrong

The results of written assignments and interviews show that understanding of subject concepts varies according to mathematical abilities. Students with high mathematical abilities can achieve all indicators, namely restating concepts, identifying examples and non-examples, and classifying objects according to certain properties according to the concept. This is in line with Khairani, dkk. (2021) which states that students with high abilities are able to restate concepts they have learned very well. So that subjects with high mathematical abilities are able to restate the concept of a system of linear equations in two variables. Students with moderate mathematical abilities can achieve indicators of restating concepts, and identifying examples and non-examples. This is in line with research conducted by Yani, dkk. (2019) which states that subjects with moderate mathematical abilities are able to restate concepts well. So that subjects with moderate mathematical ability are able to restate the concept of a system of linear equations in two variables. Meanwhile, students with low mathematical abilities cannot meet any of the indicators. In line with Sukma (2019) which says that students with low mathematics ability have difficulty in using which method to use.

The low understanding of the concept from students occurs due to the lack of ability of students to understand the concept and the lack of practice questions regarding systems of linear equations in two variables. In line with research conducted by Hanipa dkk., (2019) which states that students still make mistakes in understanding concepts, the factors that cause students' errors in working on two-variable linear equation systems are a lack of understanding in mastering the concept and a lack of practice in solving various questions. . Meanwhile,

according to Umam dan Zulkarnaen, (2022) who stated that the factors causing students' lack of understanding of concepts are lack of concentration in learning, irregular study habits, and less interesting learning methods.

In research conducted by (Khairunnisa & Aini 2019). the results obtained that students' score of understanding mathematical concepts of students on the material of the system of linear equations of two variables reached 39.71% which means it is in the category of less. Whereas in this study the results obtained were only low mathematics ability which was still lacking in understanding concepts. Understanding concepts means that learning mathematics does not only require students to know and remember mathematical concepts, but also requires students to understand and apply and connect the interrelationships of concepts. Concept understanding is the ability of students who are characterised by their mastery of the material so that they can understand concepts, re-express them in other representations and apply concepts in solving problems (Ananda, dkk. 2020). Safira Datu, dkk. (2021) state that concept understanding is the ability possessed by students so that concepts can be applied to solve mathematical problems. Therefore, the role of the teacher is very important in facilitating students to have the ability to understand mathematical concepts. Concept understanding is the most important part of learning mathematics. Understanding the concept is very important for students to master the prerequisite material so that it is easy to understand the next concept (Sari, dkk. 2022). Concept understanding is the most important part of learning mathematics. In line with that, Wikasari, dkk. (2020) argued that concept understanding is very important for students to understand what they are learning and more easily follow learning activities at a higher level to develop more complex mathematical skills.

The weakness in this study is that there are still indicators that are not used in this study. Therefore, for other researchers who want to conduct research related to students' concept understanding, they should expand the results of this study including using indicators that were not revealed in the study. It is also recommended to search for more literature to strengthen the theory.

CONCLUSION

Based on the research results, it was concluded that students with high mathematics ability were able to master all indicators, while students with medium and low mathematics ability were not able to master all indicators of conceptual understanding. Students with high mathematical abilities can achieve indicators of restating concepts, identifying examples and non-examples, classifying objects according to their properties according to the concept. Students with moderate mathematical abilities can achieve the indicators of restating concepts, identifying examples and non-examples, while the indicators of classifying objects according to their properties according to concepts are still not good. Students with low mathematical abilities cannot achieve all indicators of conceptual understanding.

RECOMMENDATION

Teachers should pay attention to students' concept understanding, because good concept understanding is needed so that students do not experience difficulties when learning the next material and To other researchers who want to conduct research related to students' understanding of mathematics concepts, they should expand the results of this study including using indicators that are not revealed in the study.

REFERENCES

Alzanatul Umam, M., and Zulkarnaen, R. (2022): Analisis Kemampuan Pemahaman Konsep Matematis Siswa Dalam Materi Sistem Persamaan Linear Dua Variabel, *Jurnal Educatio FKIP UNMA*, 8(1), 303–312. https://doi.org/10.31949/educatio.v8i1.1993

Ananda, M. I., Makmuri, and Lukman El Hakim (2020): Upaya Meningkatkan Kemampuan Pemahaman Konsep Matematika Siswa dengan Model Pembelajaran Jigsaw Berbantuan

Geogebra di Kelas XI IPS 1 SMA Diponegoro 1 Jakarta, *Jurnal Riset PembelajaranMatematika Sekolah*, 4(1), 20–29. https://doi.org/10.21009/jrpms.041.04

Azzahra, S. J. (2019): Analisis Kesalahan Siswa dalam Pemahaman Konsep Menyelesaikan Soal Cerita SPLDV dengan Tahapan Newman, *JPMI: Jurnal Pembelajaran Matematika Inovatif*, 2(2), 87–94.

Bella Putri Khairani, Maimunah, and Roza, Y. (2021): "Analisis Kemampuan Pemahaman Konsep Matematis Siswa Kelas XI SMA/MA pada Materi Barisan dan Deret", *Jurnal Cendekia : Jurnal Pendidikan Matematika*, 05(02), 1578–1587.

Cahani, K., and Effendi, K. N. S. (2019): Kemampuan Pemahaman Konsep Matematika Siswa SMP Kelas IX pada Materi Bangun Datar Segiempat, *Seminar Nasional Matematika Dan Pendidikan Matematika Sesiomadika 2019*, retrieved from internet: http://journal.unsika.ac.id/index.php/sesiomadika, (2008), 120–128.

Gani, F. A., Ismaimuza, D., and Sudarman, S. (2020): Profil Pemahaman Konsep Siswa Ditinjau Dari Tingkat Kemampuan Matematika Pada Materi Fungsi Komposisi, *Aksioma*, **9**(2), 98−111. https://doi.org/10.22487/aksioma.v9i2.520

Hanipa, A., Triyana, V., Sari, A., Siliwangi, I., Jenderal, J. T., and Cimahi, S. (2019): Analisis Kesalahan Siswa Dalam Menyelesaikan Soal Sistem Persamaan Linier Dua Variabel Pada Siswa Kelas VIII MTs di Kabupaten Bandung Barat, *Journal On Education*, 01(02), 15–22.

Khairunnisa, N. C., and Aini, I. N. (2019): Analisis Kemampuan Pemahaman Konsep Matematis dalam Menyelesaikan Soal Materi SPLDV pada Siswa SMP, *Prosiding Seminar Nasional Matematika Dan Pendidikan Matematika Sesiomadika 2019*, 1(1), 546–554.

Malikha, Z., and Amir, M. F. (2018): Analisis Miskonsepsi Siswa Kelas V-B Min Buduran Sidoarjo Pada Materi Pecahan Ditinjau Dari Kemampuan Matematika, *Pi: Mathematics Education Journal*, 1(2), 75–81. https://doi.org/10.21067/pmej.v1i2.2329

Miles, M. B., Huberman, A. M., & Saldana, J. (2014). *Qualitative Data Analysis A Methods Sourcebook*. USA:SAGE Publications.

Murtianto, Y. H., Muhtarom, M., and Setiyaningrum, E. D. (2019): Pemahaman Konsep Logaritma Siswa SMA Ditinjau dari Kemampuan Matematika, *Media Penelitian Pendidikan : Jurnal Penelitian Dalam Bidang Pendidikan Dan Pengajaran*, 13(1), 36. https://doi.org/10.26877/mpp.v13i1.5087

Kemendikbud. (2016): *Permendikbud No. 22 Tahun 2016 Tentang Tujuan Pembelajaran*. Jakarta: Kemendikbud

Pujakusuma, G. K., and Pramuditya, S. A. (2023): Students' Mathematical Understanding Ability On The Material Of The Linear Absolute Value Of One Variable Assisted By A Digital Module, *Mathline : Jurnal Matematika Dan Pendidikan Matematika*, 8(1), 48–67. https://doi.org/10.31943/mathline.v8i1.273

Rahayu, Y., and Pujiastuti, H. (2018): Analisis Kemampuan Penalaran Matematis Siswa SMP Pada Materi Himpunan, *Journal of Research in Mathematics Learning and Education*, 3(2), 93–102. https://doi.org/10.31949/dm.v4i1.2040

Safira Datu, Ellis Salsabila, and Vera Maya Santi (2021): Pengaruh Model Pembelajaran Kontekstual dengan Strategi Joyful Learning pada Pembelajaran Jarak Jauh terhadap Kemampuan Pemahaman Konsep Matematis Peserta Didik SMP Negeri 97 Jakarta, *Jurnal Riset Pembelajaran Matematika Sekolah*, 5(2), 53–60. https://doi.org/10.21009/jrpms.052.06

Sari, E. W., Sridana, N., Hayati, L., and Hikmah, N. (2022): Analisis Kemampuan Pemahaman Konsep Matematis Materi Sistem Persamaan Linear Dua Variabel Ditinjau Dari Kemandirian Belajar Siswa Kelas VIII SMP Negeri 21 Mataram Tahun Ajaran 2021/2022, *Griya Journal of Mathematics Education and Application*, 2(2), 537–546. https://doi.org/10.29303/griya.v2i2.173

Siki, D., Djong, K. D., and Jagom, Y. O. (2021): Profil Pemahaman Konsep Matematika Siswa

Smp Dalam Menyelesaikan Masalah Matematika, *Leibniz : Jurnal Matematika*, retrieved from internet: http://conference.upgris.ac.id/index.php/senatik/article/view/1914, 1(1), 36–43.

Sukma, R. L. (2019): Profil Pemahmaan Aljabar Ditinjau dari Kemampuan Matematika Siswa Kelas VII Di MTsN 6 Tulungagung, *Skripsi Fakultas Tarbiyah Dan Ilmu Keguruan UIN Satu Tulungagung*, 68–84.

Wahyuningsih sriwati, W. (2019): Penerapan Metode Latihan Mandiri Untuk Meningkatkan Hasil Belajar Matematika pada Siswa SMP Negeri 1 Kayangan, 5(2), 149–155.

Wikasari, A., Suarsana, I. M., and Hartawan, I. G. N. Y. (2020): Penerapan Model Pembelajaran Experience, Language, Picture, Symbol, Application (ELPSA) Terhadap Pemahaman Konsep Matematika Siswa, *JNPM (Jurnal Nasional Pendidikan Matematika)*, 4(2), 308. https://doi.org/10.33603/jnpm.v4i2.3517

Yani, C. F., Roza, Y., Murni, A., and Zuhri Daim (2019): Analisis Kemampuan Pemahaman Matematis Siswa pada Materi Bangun Ruang Sisi Lengkung, *Mosharafa: Jurnal Pendidikan Matematika*, retrieved from internet: http://journal.institutpendidikan.ac.id/index.php/mosharafa, 8(2), 2086–4280.