JURNAL ABSIS
Jurnal Pendidikan Matematika dan Matematika
Vol. 7 No. 2, December 2024

MATHEMATICAL CONNECTION : AS A STUDY OF ANALYSIS OF HIGH SCHOOL STUDENTS' ABILITY IN SOLVING MATHEMATICAL PROBLEMS BASED ON LEARNING STYLES

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ABSTRACT The purpose of this study was to analyze students' mathematical connection abilities in solving mathematical problems based on learning styles using descriptive qualitative research. The subjects of the study were students of SMAN Binino by taking 3 students, namely 1 dominant visual student, 1 dominant auditory student and 1 dominant kinesthetic student. Data were obtained from questionnaires, written tests and interviews. The analysis was carried out by collecting data, reducing data, and drawing conclusions. The results of the study showed that the mathematical connection abilities of students with a visual learning style were that students were able to make connections between topics, mathematical connections with other fields of science and mathematical connections of students with everyday life . The mathematical connection abilities of students with an auditory learning style were that students were able to make connections between topics, mathematical connections of students with everyday life but were unable to make mathematical connections with other fields of science. The mathematical connection abilities of students with a kinesthetic learning style were that students had difficulty in understanding concepts and doing calculations so that students were unable to make mathematical connections in solving problems.

Keywords: mathematical connection, learning styles, problem-solving, high school students

ABSTRAK Tujuan dari penelitian ini adalah untuk menganalisis kemampuan koneksi matematis siswa dalam menyelesaikan masalah matematika berdasarkan gaya belajar dengan menggunakan penelitian deskriptif kualitatif. Subjek penelitian adalah siswa SMAN Binino dengan mengambil 3 siswa, yaitu 1 siswa dengan gaya belajar dominan visual, 1 siswa dengan gaya belajar dominan auditori, dan 1 siswa dengan gaya belajar dominan kinestetik. Data diperoleh melalui kuesioner, tes tertulis, dan wawancara. Analisis dilakukan dengan mengumpulkan data, mereduksi data, dan menarik kesimpulan. Hasil penelitian menunjukkan bahwa kemampuan koneksi matematis siswa dengan gaya belajar visual adalah siswa mampu membuat koneksi antar topik, koneksi matematis dengan bidang ilmu lain, dan koneksi matematis siswa dengan kehidupan sehari-hari. Kemampuan koneksi matematis siswa dengan gaya belajar auditori adalah siswa mampu membuat koneksi antar topik, koneksi matematis dengan kehidupan sehari-hari, tetapi tidak mampu membuat

https://doi.org/10.30606/absis.v7i2.2798

koneksi matematis dengan bidang ilmu lain. Kemampuan koneksi matematis siswa dengan gaya belajar kinestetik menunjukkan bahwa siswa mengalami kesulitan dalam memahami konsep dan melakukan perhitungan, sehingga siswa tidak mampu membuat koneksi matematis dalam menyelesaikan masalah.

Keywords: koneksi matematis, gaya belajar, pemecahan masalah, siswa sekolah menengah

INTRODUCTION

Mathematics is a structured and interrelated science between one topic and another, meaning that one material may be a prerequisite for another material, or a certain concept is needed to explain another concept (Romli, 2016). In addition, mathematics is also very closely related to everyday life. For example, mathematical problems in the form of story problems that are related to everyday life. These mathematical problems require students to think about solutions and to solve them a student needs to understand the concept, conceptual structure and find relationships between concepts. However, in reality, there are various shortcomings in the process of learning mathematics. The lack of ability to understand concepts to the ability of students to relate concepts is also the reason why students are constrained in the process of solving mathematical problems and problems in everyday life (Wulan et al., 2021) .

Based on the results of the researcher's interview with subject teachers at SMAN Binino, it was obtained information that students had difficulty in solving problems that linked one material with other mathematical materials, one mathematical concept with another mathematical concept and students were only used to solving problems that had been given by the teacher before, but when the teacher gave different problems, students found it difficult to solve the problems. This means that students' mathematical connection skills are still limited. This is in line with (Siagian, 2016) that in general students' mathematical connections are still low. Students are only used to being able to solve the same problems as the example problems given by the teacher. Therefore, mathematical connection skills need to be taught to organize a mathematics learning process that describes the relationship between concepts and data of a given problem or situation.

Mathematical connections are very important because they support students to understand a concept substantially and help them to improve their conceptual understanding of other disciplines through the reciprocal relationship between mathematical concepts and concepts of other disciplines (Widiyawati et al., 2020) . The importance of this study is that mathematical connection skills must be understood by high school students because at the high school level students are required to be able to understand, analyze and apply them in the field. This is what makes mathematical connection skills very important for students to have. In addition, in relation to the objectives of high school mathematics learning, namely that students can explain the relationship between concepts appropriately in problem solving, it is very important if mathematical connection skills are applied at the high school level with the hope that these goals can be achieved (Romiyansah et al., 2020) .

Mathematical connection skills must be understood by students in mathematics learning so that what students learn does not always have to be memorized but students can relate one mathematical topic to another, mathematical topics with contexts outside mathematics and mathematics with everyday life (Manalu et al., 2020) . To find out students' mathematical connection skills, it can be seen from their problem-solving abilities, students can develop and build ideas and practice integrating the concepts, theorems and skills they have learned (Apriyono, 2018) . Of course, in solving problems, a student has a different way, especially in learning style (Gholami & Bagheri, 2013) . Problem solving is a manifestation of a mental activity consisting of various skills. Thus, to solve a problem, a person must understand the characteristics of the problem given, one of which is learning style. The differences in students' learning styles are very important to know, so that they become a benchmark for students to be able to learn meaningfully. The diversity of learning styles is divided into three parts, namely according to (Lucy, 2017) divided into 3 types of styles, namely visual, auditory, and kinesthetic learning styles. Students who have a visual learning style tend to learn by emphasizing visual acuity, students who have an auditory learning style tend to learn by relying on hearing, while students who have a kinesthetic learning style tend to learn by practicing directly (Prinansa, 2017) .

There are several previous studies related to connection skills in problem solving. Research with the title of mathematical connection profile of female high school students in solving problems. This study shows that female high school students with high abilities can solve mathematical problems by understanding the problem, making a solution plan, implementing the solution plan and checking the answers correctly (Romli, 2016) . Research related to students' mathematical connection skills in solving mathematical problems based on gender . The results of the study showed that there were differences in solving problems of male and female students based on problem solving indicators (Apriyono, 2018) .

In relation to the above explanation, the novelty in this study is to analyze the ability of high school students in solving mathematical problems based on learning styles through three indicators in mathematical connections that have been described, whether students with visual, auditory and kinesthetic learning styles have met all indicators or not. The purpose of this study is to specifically analyze mathematical connections as a study of the analysis of high school students' abilities in solving mathematical problems based on learning styles.

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METHODS

The method in this study is a qualitative method with a descriptive approach. This study describes mathematical connections as a study of the analysis of high school students' abilities in solving mathematical problems based on learning styles. The subjects of the study at SMAN Binino were 40 students consisting of 17 students of class XII IPA and 23 students of class XII IPS 1. Of the 40 students, 3 students were selected to represent each learning style, namely 1 student with a dominant visual learning style, 1 student with a dominant auditory learning style and 1 student with a dominant kinesthetic learning style.

The instrument used by researchers in determining students with visual, auditory and kinesthetic learning styles is that researchers provide learning style questionnaires that have previously been validated by validators and the presence of researchers as the main instrument. The selected research subjects are based on the results of the analysis of student learning style questionnaires that are predominantly visual, auditory and kinesthetic learning styles.

In addition, the determination of the subject is based on the results of the researcher's discussion with the subject teacher for several reasons, namely the more dominant visual, auditory and kinesthetic learning styles are considered to have good mathematical abilities and have good communication skills, making it easier for researchers during interviews. The procedures carried out in this study include three stages including the preparation stage, the implementation stage and the final stage. The preparation stage is preparing research instruments in the form of a learning style questionnaire, 2 mathematical connection test questions and interview guidelines. The implementation is data collection starting with giving a learning style questionnaire to the research subjects, then the researcher analyzes the learning style questionnaire to obtain students with visual, auditory and kinesthetic learning styles. Students with visual, auditory and kinesthetic learning styles are given 2 mathematical connection ability test questions that are in accordance with the research indicators.

The indicators of mathematical connection ability above based on (NCTM, 2000) used by researchers in this study are; 1) The relationship between mathematical topics. 2) The relationship between mathematics and other fields of science. 3) The relationship between mathematics and the real world or in everyday life. Then interviews were conducted on the six research subjects. While in the final stage, namely data analysis by reducing data, presenting data and making conclusions.

FINDING AND DISCUSSION

Understanding mathematical connection abilities is crucial for solving problems effectively, as it reflects how well students can link mathematical concepts with real-world applications and other fields of knowledge. This section presents the results and discussion of a study analyzing the mathematical connection abilities of high school students based on their dominant learning styles. The selection of research subjects was based on a detailed process, starting with administering a learning style questionnaire to 40 students at SMAN Binino, followed by an analysis to categorize students into visual, auditory, and kinesthetic learners. These findings provide insights into how learning styles influence students' problem-solving approaches and their ability to establish mathematical connections.

Table 1. Analysis of Learning Style Categories in SMAN Binino Students

No	Learning Style Categories	Number of Students
1	Visual learning style	7
2	Auditory learning style	16
3	Kinesthetic learning style	14
4	Not one learning style is dominant	3

Based on the analysis results in table 1. the researcher together with the subject teachers discussed to determine which students were selected from each learning style group. In addition to the dominant learning style, the students selected must also have good mathematical and communication skills, so that the researcher can clearly see the research results obtained. Finally, it was decided that "S1" as subject 1 represented the dominant visual learning style group. "S2" as subject 2 represented the dominant auditory learning style group, and "S3" as subject 3 represented the dominant kinesthetic learning style group.

Based on the three subjects above, the following section will describe students' mathematical connection abilities based on student learning styles including S1, S2 and S2. This is based on the opinion of Porter and Hernacki in (Putri et al., 2019) that basically everyone has a different learning style to get the best results in achieving learning targets. A person can learn easily if they find a learning style that suits them. This means that each individual selected as a research subject has differences from one another. These differences include differences in receiving and processing a message or information, differences in responding to information and learning new things that are obtained.

Likewise in mathematical connections or Mathematical connections, each individual who has a learning style in solving problems has different connection abilities. It is important to know mathematical connections in the learning process so that students develop and have reasoning abilities based on their thinking abilities. In essence, mathematics as a structured and systematic science means that concepts and principles in mathematics are interrelated with each other (Siagian, 2016).

Analysis of S1 mathematical connection abilities in solving mathematical problems based on visual learning styles.

The mathematical connection ability of S1 in solving problems based on visual learning styles can be obtained information based on the results of tests and interviews between researchers and students. S1 completed 2 mathematical

 https://doi.org/10.30606/absis.v7i2.2798

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connection questions given by researchers to research subjects. Based on Figure 1 in question number 1, S1 initially made an analogy based on the information that S1 obtained from the picture in the question. S1 stated it in the form of a mathematical model in the form of an equation based on the information in the question. The information in the question is that Ani bought 2 notebooks, 3 pens and 1 pencil. S1 changed the form of the information into a mathematical model, namely x is a notebook, y is a pen and z is a pencil. However, S1 was not right in making a mathematical modeling which should be assumed to be x is the price of a book, y is the price of a pen and z is the price of a pencil. After being confirmed by the researcher during the interview, S1 said that " Mom, the correct one should be x is assumed to be the price of a book, y is assumed to be the price of a pen and z is the price of a pencil, but at that time I immediately wrote it like in the answer I wrote, Mom".

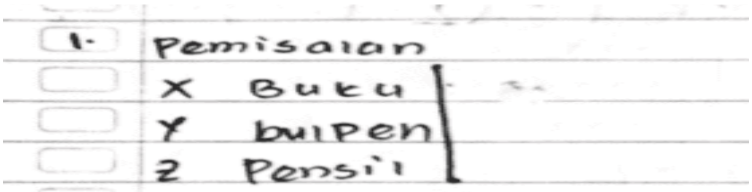

Figure 1. S1 makes a comparison

Furthermore, based on this information, S1 then changes the information in the story problem related to everyday life in the form of a three-variable linear equation system and then forms three equations. In this step, S1 understands the story problem given and is able to make mathematical connections between students in everyday life. to be changed into a mathematical model in either SPLTV or matrix form. This was shown by S1 during the interview, the researcher asked S1 whether a problem like this had ever been found, S1's answer was "The problem I solved is the same as when I want to shop at a supermarket, so I think this problem is very related to my daily life" .

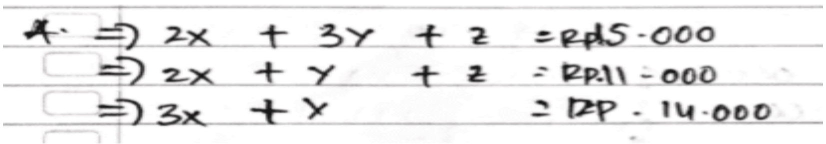

Figure 2. SPLTV modeling

Based on the information on the form of three-variable linear equations, S1 is able to link mathematical ideas and then make connections between topics . This can be seen from S1 previously making three forms of equations from a three-variable linear equation system. Then S1 changed the form of the SPLTV into an ordered matrix, 3×3 meaning that S1 was able to link ideas from one material to another, namely matrix material. S1 used this method because according to the interview results, S1 said that by using the matrix method, S1 was easier to solve the problem, but if it was solved using the solution method on SPLTV, it required long steps and could result in errors in calculation. An excerpt from S1's interview was "I can solve SPLTV problems by trying to use 3x3 order matrix material because it is easier to understand and easy to get the results, while using the SPLTV method requires long steps and sometimes I make mistakes in the calculation, ma'am". The results of the S1 test and interview showed that S1 was able to make connections between topics.

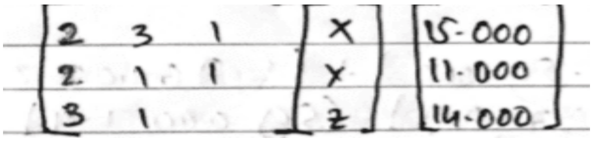

Figure 3. SPLTV form into matrix form

In this section, it can be seen that S1 is able to make connections between topics, namely the three-variable linear equation system in matrix form.

Next, on question number 2, S1 digs for information by reading the illustration in the question and then relates it to everyday life. Based on the results of the researcher's interview excerpt with S1, S1 said that "I usually find problems like this too, ma'am, usually there are many examples that can be applied and the solutions are also related to other subjects, ma'am, namely marketing, economics such as buying and selling transactions or also in accounting, everything is usually recorded in a table, namely in making shopping notes" . Based on the results of the test and interview, it can be seen that S1 relates mathematics to economics, mathematics to accounting, that the application of mathematics is also used in other fields of science, so it can be concluded that S1 is able to make connections between mathematics and other sciences . Furthermore, S1 solves question number 2, S1 begins by making an analogy, namely the price of rice is assumed to be x, the price of flour is assumed to be y, and the price of sugar is assumed to be z.

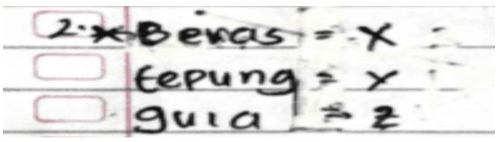

Figure 4. S1 makes a comparison

From the example, S1 changed the statement in the question by forming it in a mathematical model so that three (3) forms of three-variable linear equations were obtained. However, S1 was not right in making the mathematical modeling which should be x is the price of rice, y is the price of flour and z is the price of sugar. Based on the results of the interview related to the mathematical modeling made by S1, S1 said that " ma'am, the correct one should be x is assumed to be the price of rice, y is assumed to be the price of flour and z is assumed to be the price of sugar, but at that time I immediately wrote it like in the answer I wrote, ma'am".

From the form of these equations, S1 forms a relationship between concepts, namely S1 solves in a different way where S1 enters the elements in the three-variable linear equation system into matrix form.

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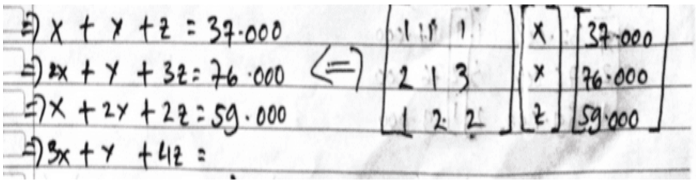

Figure 5. SPLTV form into matrix form

This shows that S1 can make connections between topics in the material of three-variable linear equation systems and matrix material. S1 uses solutions by linking SPLTV and Matrix materials because S1 understands the steps of solving by linking SPLTV and matrix materials and getting the right answer. This can be seen from S1 solving according to the matrix formula correctly.

Based on the interview excerpt, S1 stated that "I solve SPLTV problems using the matrix concept because the steps to solve it are easier and do not require long steps, the most important thing is to pay attention to the rules of the concept of solving in matrices" . In the process of solving problems and solving problems, S1 determines the value of x by first determining the sarrus method in the order 3×3. S1 can solve it correctly, meaning that S1 is able to understand the concepts by not only memorizing the formula, the strategy used also produces the correct answer.

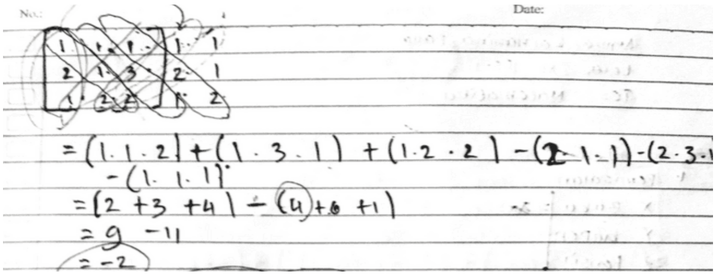

Figure 6. SPLTV form into matrix form

After obtaining the determinant result, S1 determines the value of x. S1 can solve the problem carefully and in detail so that the results obtained show the correct results. This shows that S1 understands the concept of determinants in the order matrix 3×3.

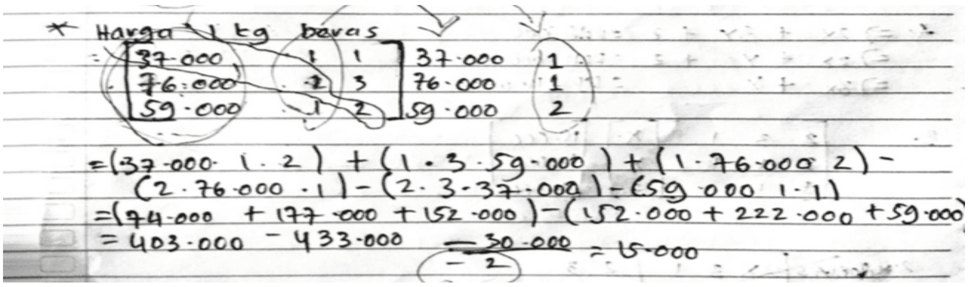

Figure 7. Solving S1 for x values

S1 determines the value of x, then each column of the x- axis is replaced with the price in each equation. After determining the value of x, S1 determines the value of

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y using the concept of the order matrix 3×3 as well as x, replacing y with the price in each equation.

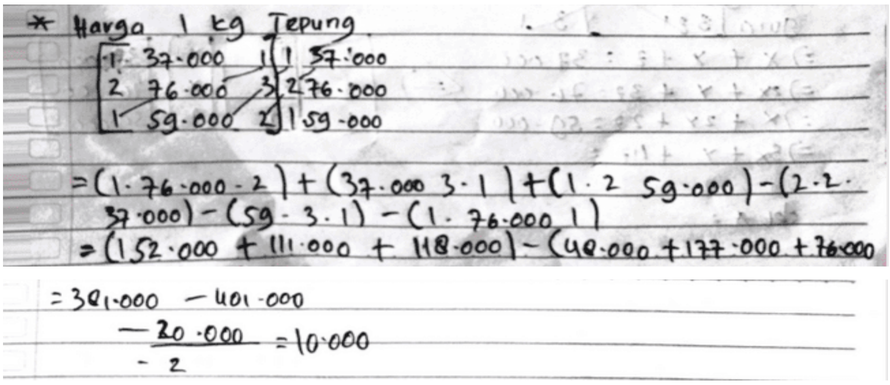

Figure 8. Solving S1 for y values

And determine the z value, with strategies and concepts in the matrix material.

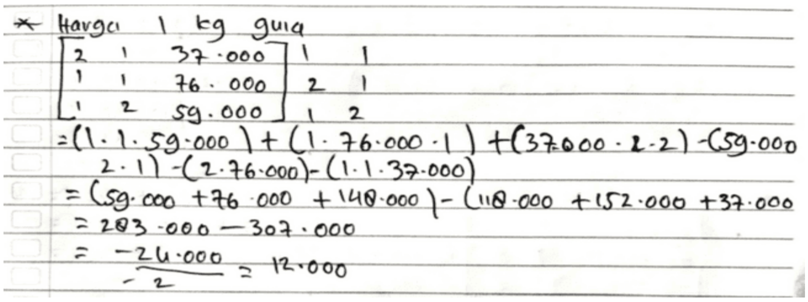

Figure 9. Solving S1 for z values

In addition, S1 makes a connection between processes in the concept of mathematics , namely in determining the price to buy each basic food item, S1 uses the substitution method in solving the resulting matrix. S1 uses the substitution method to find out how much the buyer must pay. S1 applies the steps to solve the matrix material, and the results obtained are the right answers. Based on the interview results, S1 said that " my mother applies the steps to the matrix material, but to get the results of each variable I use the substitution method ".

Based on the test results and interview excerpts on S1's answers as a student with a visual learning style in solving questions 1 and 2, S1 was able to find the relationship between one mathematical topic and another mathematical topic, namely S1 made a connection from SPLTV material to matrix material. S1 was able to make mathematical connections between mathematics and other sciences, namely the connection of mathematics with other fields of science, for example economics and accounting, meaning that mathematics is also very important for other fields of science . S1 was able to find the relationship between mathematics and students' daily lives. These results are supported by previous research that mathematical connection ability is the ability to connect conceptual and procedural knowledge, use mathematics in other topics, use mathematics in life activities, and know the connection between topics in mathematics (Kanisius Mandur et al., 2016) .

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Connection The difficulty faced by S1 in solving questions is the need to see in detail so that there are no mistakes in making calculations, especially in matrix material that requires careful calculation.

Analysis of S2's mathematical connection ability in solving mathematical problems based on auditory learning style.

The mathematical connection ability of S2 in solving mathematical problems based on auditory learning styles was obtained from the results of tests and interviews with research subjects. S2 at the beginning of solving question number 1 made an analogy, then based on the information in the image listed in the question S2 made an equation. The form of the equation consists of variables x for the example of a notebook, the variable y for the example of a ballpoint pen and a variable z for the example of a pencil. S2 made three equations based on the information in the question but was not yet correct in making the correct example.

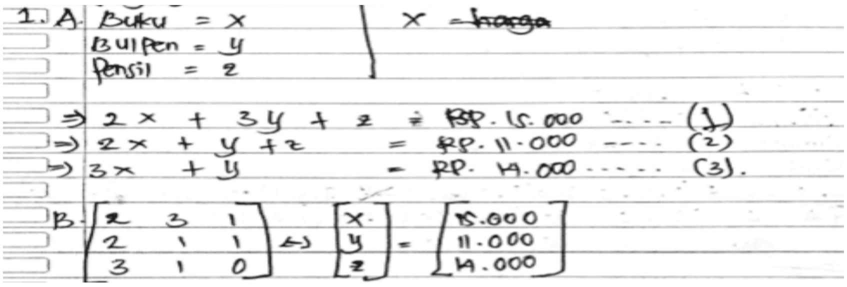

Figure 10. S2 makes an analogy and changes the SPLTV form into a matrix form.

In this section, S2 can make mathematical connections with everyday life, namely S2 is able to describe what is known and asked from the story problems given. This can be proven from the interview excerpts of the researcher with S2. The researcher asked S2 how it can be understood that the story problems are related to everyday life, S2 said that "I found in the form of questions such as how buying and selling transactions in supermarkets, namely buying books, pens and pencils that I often buy for school needs with the amount of money that must be paid according to the picture in the question" . Mathematical connections that have relationships between topics, for example in the SPLTV material, S2 makes three equations from the given problem involving three variables and then changes them to a matrix form with an order of 3×3. This was done by S2 because according to S2, solving SPLTV problems using matrix material is easier to understand and the solution procedure is not too long.

Meanwhile, in question number 2, when completing question S2, first make an analogy with the price of rice as the variable x, the price of flour as the variable y and the price of sugar is assumed to be z. However, the example made by S2 is not right. From this example, S2 continues to solve the problem by making a mathematical model of the story problem so that there are three equations produced, namely in the three-variable linear equation system S2 changes the

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equation in SPLTV with the order matrix 3×3. From the equation obtained, it can be seen in Figure 17. S2 is inconsistent and still wrong in determining the equation in SPLTV. For example, in the first and second equations, the total value of the equation is (-37,000) and (-76,000), while in the matrix section S2 rewrites it with (37,000) and (76,000).

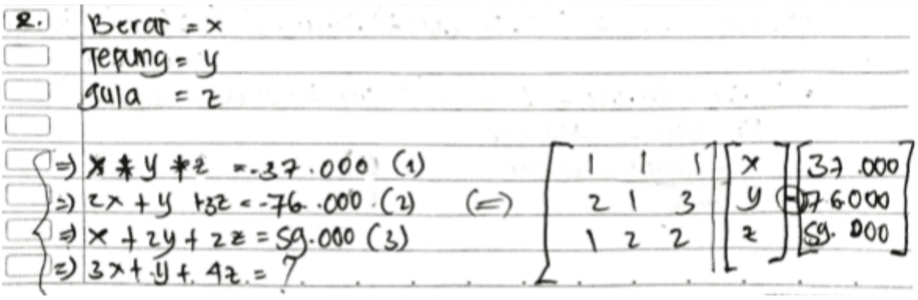

Figure 11. S2 makes an analogy and changes the SPLTV form into a matrix form.

To determine the value of each variable, the next step used by S2 is the determinant of the order matrix 3×3 with the sarrus method. Related to the determinant S2 found the correct answer so that it is seen that S2 understands the concepts in the matrix, one of which is the determinant of the order matrix 3×3.

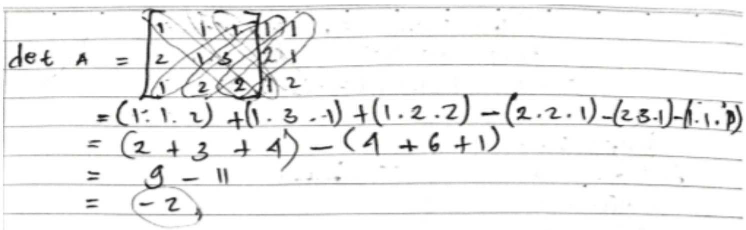

Figure 12. S2 determines the determinant of a 3x3 order matrix.

S2 completed the work only up to determining the determinant of the matrix. S2 did not continue until getting the results of each variable. This was proven during the interview, the researcher asked why it was not continued until getting the value of each variable, S2 stated that "I can only complete it up to the determinant value, ma'am, I forgot how to solve the next step, ma'am" .

Based on the results of the test and interview, S2 in solving the problem, S2 only completed the step of determining the determinant while the value of each variable was not completed. This shows that S2 can understand the relationship between one topic and another mathematical topic, as seen from S2 making connections from story problems, namely S2 making mathematical models then making them in the form of SPLTV and connecting them with matrix material. In addition, S2 can make mathematical connections with real life students emphasized during the interview, but S2 has not been able to make mathematical connections with other fields of science. The difficulty of S2 when solving the problem is that S2 does not understand the correct mathematical modeling and S2 does not understand the concept of matrices to be able to obtain unit values from each variable.

https://doi.org/10.30606/absis.v7i2.2798

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Analysis of S3's mathematical connection ability in solving mathematical problems based on kinesthetic learning style.

The mathematical connection ability of S3 in solving mathematical problems based on kinesthetic learning style was obtained from the results of the researcher's test and interviews with the research subjects. S3 when reading information always pointed to the text being read, this is one of the characteristics of students with kinesthetic learning styles. S3 completed 2 questions given by the researcher. Question number 1, S3 read the information in the question then S3 made a mathematical model in the form of a three-variate linear equation from the information in the story problem. In the solution procedure, S3 after determining the modeling in the SPLTV form, S3 changed the SPLTV form into a matrix form. The solution procedure is correct, indicating that S3 is able to make SPLTV connections to matrix form, or from one topic has a connection with another topic.

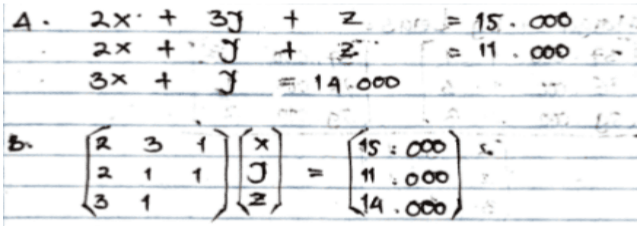

Figure 13. S3 determines the mathematical model of SPLTV which is then converted into a matrix form.

Meanwhile, in question number 2, before making the mathematical model, S3 first made an analogy using the information contained in the question. The form of the analogy is S3 assuming the price of rice with the variable x, the price of flour with the variable y , and the price of sugar with the variable z . The analogy is used to make a mathematical model. S3 made three forms of equations, namely with a three-variable linear equation system. Of the three equations, the first equation contains an error, namely the equation does not match the information in the question, namely x + y + 2 = 37.000 (figure 13) the correct equation should be x + y + z = 37.000, besides the first equation, S3 also made an error in the third equation. The matrix form obtained from SPLTV does not match as seen in figure 13. Based on the interview when asked by the researcher why in SPLTV, especially in the first and third equations, it is different from the matrix. S3 answered "I just put the numbers in the matrix" . In this section, it can be seen that S3 was unable to master the concept with SPLTV or the matrix correctly and S3 was not focused when solving the problem so that he was not careful in showing the correct answer.

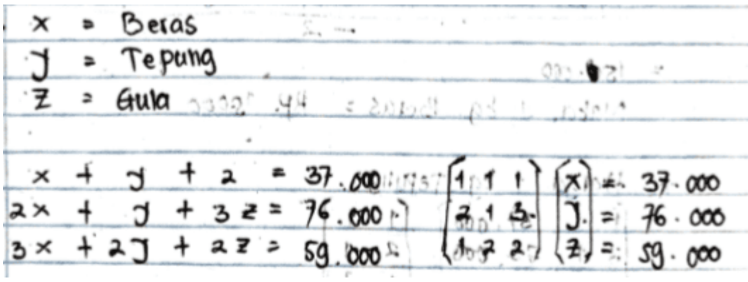

Figure 14. S3 determines the mathematical model of SPLTV which is then converted into a matrix form.

After that S3 determines the determinant of the 3x3 order matrix, in this section S3 enters the elements in the matrix but the matrix shape is not like the previous one. This proves that S3 does not understand the material on the matrix. Although the determinant value is correct, the shape of the determinant matrix of the 3x3 order is not right, S4 makes mistakes in placing elements in both columns and rows. From these results it can be seen that S3 does not understand the concept or procedure in the SPTV and matrix material.

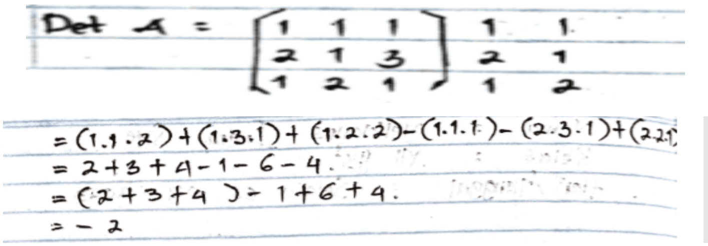

Figure 15. Determinant of a 3x3 matrix

S3 makes an example in the form of SPLTV then changes it to a matrix form until it reaches the determinant of the matrix. To determine the price of each variable, S3 only gets the results from the variable x, while the variables y and z are not solved by S3.

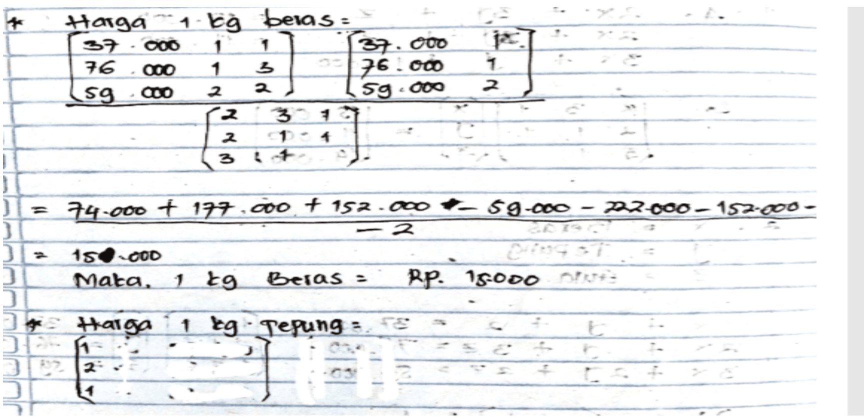

Figure 16. Determinant of a 3x3 matrix

Based on the test and interview results above, S3 is a student with a kinesthetic learning style when solving questions. S3 has not understood the material well as a whole, for example, S3 can make equations on SPLTV, but when solving there are

https://doi.org/10.30606/absis.v7i2.2798

still errors in the steps to solve it. As a result, S3 has not been able to master the material well, the mathematical connection in students with a kinesthetic learning style is also only at the stage of making connections between topics, namely making connections between SPLTV material and matrices. Connections between processes in a concept and connections in everyday life are not apparent in students with a kinesthetic learning style, and they have not been able to make mathematical connections with other fields of science. The difficulties faced by students when solving are a lack of understanding of the concept that affects the solution of the problem and also difficulty in making calculations. These findings are in line with the statement of Patra & Pujiastuti (2020) that the mistakes experienced by students in working on questions include lack of knowledge of the concept, inconsistency in working on questions and lack of ability to generalize questions. Therefore, if students do not understand the concept of SPLTV itself, their mathematical connection skills are also not good. These results indicate that students with kinesthetic learning styles in mathematical connections are lower than students with visual and auditory learning styles. This is in line with research (Apipah and Kartono, 2017) that the mathematical connection abilities of students with kinesthetic learning styles are still below students with visual and auditory learning styles because kinesthetic students are less careful in solving problems.

CONCLUSIONS AND RECOMMENDATIONS

Based on the research results obtained in the study, it can be concluded that the mathematical connection ability of students with visual learning styles is that students can make connections from processes in a mathematical concept, connections between topics and mathematical connections with other fields of science. This shows that students with visual learning styles meet all indicators in mathematical connection ability. The mathematical connection ability of students with auditory learning styles is that students can make connections from processes in a mathematical concept, connections between topics in mathematics but students with auditory learning styles cannot connect mathematical concepts with other fields of science. The mathematical connection ability of students with kinesthetic learning styles is that the connection between processes in a concept and connections in everyday life are not visible, students still have difficulty understanding concepts, difficulty doing calculations so that mathematical connections for students with kinesthetic learning styles are not visible. The mathematical connection ability of students with kinesthetic learning styles is lower than those with visual and auditory learning styles.

The suggestion from this study is that each student has a different learning style and the way they receive and understand the material is also different, so teachers need to know in advance the learning style of the students so that teachers can provide the right learning method for students with their respective learning styles. This helps classroom learning to be more enjoyable and students find it easier to understand the material. The recommendation from this study for other researchers is that this study has described how mathematical connection skills are based on learning styles, for other researchers to continue to the stage of how to design learning designs for students with different learning styles.

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