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Analysis of Students' Mathematical Problem-Solving Skills in Terms of Math Anxiety Levels

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Abstract:
This study aims to analyze students' mathematical problem-solving skills based on the level of math anxiety they experience. Math anxiety is a psychological factor that can affect students' academic performance in mathematics, especially in that require problem solving. The research method is qualitative with a descriptive approach. Data collection was carried out through tests, questionnaires, and interviews. The results of the math anxiety questionnaire categorized students into high, medium, and low categories. Respondents were collected by purposive sampling from each category of math anxiety. Data analysis consists of reduction, data presentation, and conclusion. The results showed that students with low math anxiety were able to solve problems more systematically and flexibly, while students with high math anxiety tended to have difficulty understanding problems and designing solution strategies. Students in the math anxiety category are having difficulty in implementing a completion plan and providing the right conclusions. These findings confirm that math anxiety has a significant impact on students' mathematical problem-solving skills.

Abstrak:
Penelitian ini bertujuan untuk menganalisis kemampuan pemecahan masalah matematika siswa berdasarkan tingkat kecemasan matematika yang dialaminya. Kecemasan matematika merupakan faktor psikologis yang dapat mempengaruhi prestasi akademik siswa dalam matematika, terutama dalam memecahkan masalah. Metode penelitiannya bersifat kualitatif dengan pendekatan deskriptif. Pengumpulan data dilakukan melalui tes, kuesioner, dan wawancara. Hasil kuesioner kecemasan matematika mengkategorikan siswa ke dalam kategori tinggi, sedang, dan rendah. Responden dikumpulkan dengan purposive sampling dari setiap kategori kecemasan matematika. Analisis data terdiri dari reduksi, penyajian data, dan kesimpulan. Hasil penelitian menunjukkan bahwa siswa dengan kecemasan matematika rendah mampu memecahkan masalah secara lebih sistematis dan fleksibel, sedangkan siswa dengan kecemasan matematika tinggi cenderung mengalami kesulitan memahami masalah dan merancang strategi solusi. Siswa dalam kategori kecemasan matematika mengalami kesulitan dalam menerapkan rencana penyelesaian dan memberikan kesimpulan yang tepat. Temuan ini menegaskan bahwa kecemasan matematika

memiliki dampak yang signifikan pada keterampilan pemecahan masalah matematika siswa.

Keywords:
Math Anxiety, Mathematics, Problem Solving Skills

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INTRODUCTION

The 21st-century skills require students to possess various essential competencies, such as critical thinking, creativity, communication, and collaboration. One crucial aspect of critical thinking is mathematical problem-solving ability, which enables students to analyze situations, identify problems, and find effective solutions. Emphasize that character education with a 21st-century skills-based learning model can enhance students' ability to face complex challenges in the modern era (Kennedy & Sundberg, 2020). Therefore, developing mathematical problem-solving skills is crucial in preparing students to navigate the dynamics of the 21st century (Nilimaa, 2023; Santos-Trigo, 2024).

Mathematics is a science concerning the value of truth and absolute (Nurbaiti & Kusno, 2025). In mathematics learning, students are required to master various important skills, one of which is mathematical problem-solving skills (Nguong, Ling, & Mahmud, 2023; Roorda, Vries, & Smale-Jacobse, 2024). This ability is important because it allows learners to understand problems, design solution strategies, implement plans and re-examine the solutions obtained (Polya, 1973). According to research by Siswanto and Meiliasari (2024), problem-solving skills involve individual skills in conducting analysis, prediction, reasoning, evaluation, and reflection by utilizing prior knowledge to overcome the challenges faced in order to achieve the desired goals (Almulla, 2025; Shanta, 2022). Emphasized that the implementation of the problem-based learning model (PBL) has a minimise errors and understand concepts in contextualised mathematical problem solving. Effect on students' problem-solving skills, with a significant increase in each of these ability indicators (Kardoyo, Nurkhin, Muhsin, & Pramusinto, 2020). Thus, the development of mathematical problem-solving skills is crucial in the learning process to prepare

students to face various complex challenges in the future (Mizyed & Eccles, 2023).

The mathematical problem-solving ability of students in Indonesia is still a major concern in the world of education. The average mathematics score of Indonesian students in PISA 2018 only reached 379, far below the OECD average of 487. Several studies have revealed that many students have difficulty solving math problems that require problem-solving skills. Students in the low category are only able to fulfill one of the four stages of problem-solving, namely making a plan (Sofyan, Sartono, Badaruddin, Fauzi, Syarnubi, Oviyanti, Soraya & Sukirman, 2024). Other research also shows that the mathematical problem-solving ability of Indonesian students is still low. A study found that many students have difficulty solving math problems that require problem-solving skills (Niyomufasha, Ntivuguruzwa, & Mugabo, 2024). The results of this study indicate the need to improve effective learning strategies to improve the mathematical problem-solving skills of students in Indonesia.

Math anxiety is a psychological phenomenon that negatively impacts student performance in mathematics. This anxiety can hinder conceptual understanding, triggered by negative experiences and low self-confidence (Cipora, Santos, Kucian, & Dowker, 2022). Students with high math anxiety tend to have low metacognitive awareness, which has an impact on problem-solving skills (Zhu, Liu, Xiao, & Sindakis, 2024). In addition, math anxiety affects work memory, attention, and self-efficacy in completing math tasks (Cipora, Santos, Kucian, & Dowker, 2022). Furthermore, math anxiety can also cause students to avoid problems that are considered difficult, so they are less trained in solving more complex problems (Ramirez, Chang, Maloney, Levine, & Beilock, 2016). As a result, students with high math anxiety are more likely to experience academic failure than those with low anxiety (Barroso, Ganley, McGraw, Geer, Hart, & Daucourt, 2021). At SMK Kesatrian Purwokerto it self, the level of math anxiety of students was recorded at 78% (questionnaire total). These findings indicate that the higher the level of math anxiety experienced by students, the lower the learning outcomes achieved.

The relationship between mathematical problem-solving ability and math anxiety has a significant influence on the effectiveness of students in solving math problems, especially in materials that require analytical thinking and a significant negative correlation between mathematical anxiety and mathematical problem-solving ability (Supriadi, Jamaluddin Z, & Suherman, 2024). The higher the level of math anxiety that students experience, the lower

their ability to solve mathematical problems systematically. Students with low levels of math anxiety generally demonstrate a stronger ability to accurately identify mathematical problems, formulate effective solution strategies, and critically evaluate the outcomes of their work. This enhanced performance can be attributed to their greater cognitive flexibility and reduced emotional interference, which allows them to focus more effectively on the task at hand. In contrast, students experiencing moderate to high levels of math anxiety often struggle with these processes, as anxiety can impair working memory, reduce concentration, and trigger avoidance behaviors, all of which hinder problem-solving and critical evaluation skills (Gokce & Guner, 2024). This shows that emotional factors, especially math anxiety, can be an obstacle in the development of students' mathematical problem-solving skills.

This research focuses on the problem of students' mathematical problem-solving ability reviewed from the level of math anxiety they experience. This ability is crucial in solving complex math problems, especially for students who face anxiety in understanding and applying math concepts. Math anxiety is often an inhibiting factor in the problem-solving process, as it can affect students' confidence and resolution strategies. However, research that specifically explores the relationship between math anxiety and mathematical problem-solving skills in high school students is still limited, so this study is relevant to be conducted.

This study analyzes students' mathematical problem-solving skills based on several indicators, such as understanding problems, designing solution strategies, implementing solutions, and reviewing the results obtained. To measure the level of math anxiety, this study uses the Mathematics Anxiety Rating Scale (MARS) developed by Suinn and Winston (2003), which provides a comprehensive picture of students' anxiety in solving math problems.

Unlike previous research that only highlighted factors that affect mathematical problem solving or the impact of math anxiety on general learning outcomes (Auliya, 2016), this study connects the two aspects to gain a more comprehensive understanding. This study was conducted at SMK Kesatrian Purwokerto to provide empirical evidence on the extent to which math anxiety can affect students' ability to solve math problems.Through the results of this study, it is hoped that a deeper insight can be obtained for educators regarding the relationship between math anxiety and students' mathematical problem-solving skills. In addition, these findings can also serve as a foothold in designing more effective learning approaches, so that teachers can help students

improve their skills in solving mathematical problems while reducing their anxiety about mathematics, which ultimately contributes to improved learning quality.

METHODS

This study used a qualitative method with a descriptive approach to investigate the relationship between mathematical problem-solving ability and the level of mathematics anxiety of students in Vocational High Schools (SMK). The research subjects consisted of 150 students in class X TJKT SMK Kesatrian Purwokerto, who came from one department but were taken from several classes. Data collection was carried out through using a test to determine problem-solving ability designed to assess students' levels of math anxiety as well as mathematical problem-solving skills. The questionnaire includes a variety of questions regarding students' experiences in learning mathematics as well as the impact of anxiety on their academic performance. To measure the level of math anxiety, the Likert scale is used, while problem-solving skills are tested through mathematical problems related to statistical material. The data obtained were analyzed using descriptive statistics to describe the characteristics of the sample (Habibi, Wahyuni, Rusliah, Ilham, & Fitri, 2021). In addition, correlational analysis was applied to evaluate the relationship between students' mathematical problem-solving skills and their math anxiety levels (Jeffry & Amran, 2025).

To analyze the mathematical problem-solving ability and math anxiety level of class X TJKT SMK Kesatrian Purwokerto, one MA description question was given. The math anxiety questionnaire consisted of 25 statements grouped into three aspects: cognitive anxiety (items 1–12), emotional anxiety (items 13–22), and physiological anxiety (items 23–25). Students responded to each item using a 4-point Likert scale: Always, Often, Rarely, and Never. Examples of the statements include: “I feel nervous when facing difficult math problems” (cognitive), “I feel anxious when listening to new math material explained by the teacher” (emotional), and “My hands sweat during a math exam” (physiological). Students' total scores were used to categorize their math anxiety level into high, medium, or low, which later served as the basis for analyzing differences in mathematical problem-solving performance.

Table 1. Problem-Solving Test

Questions
Observation survey conducted in class X SMK Ksatrian Purwokerto, obtained data on the number of hours students sleep per night in one week (in hours): 4, 5, 5, 6, 6, 6, 7, 7, 7, 7, 8, 8, 9, 10, 12 Based on these data, answer the following questions: a. Draw the data distribution in a tabel. b. Calculate the mean, median, and mode of the data above. c. Based on the result of the calculation of the meansures of the consentration, what is the pattern of sleepig hours of students in class X SMK?

After the data collection process, the analysis was carried out to explore the patterns of students' mathematical problem-solving skills as reviewed by the level of math anxiety they experienced.

RESULTS AND DISCUSSION

In the early stages of this study, students filled out a Math Anxiety questionnaire consisting of 25 questions to measure the level of anxiety about math lessons. Then, students work on written questions to evaluate the extent to which students can apply skills in solving mathematical problems. Based on the results of the written test and questionnaire, the researcher selected three students with ability levels representing the high, medium, and low categories. The following are the results of an analysis related to students' mathematical problem-solving skills.

1. Students With High Math Anxiety Level (S3)

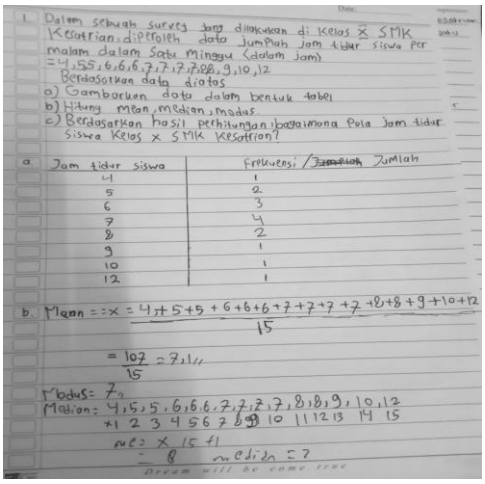

Figure 1. Students with High Math Anxiety Level (S3)

Table 2. Interview with S3

Section A: Problem Understanding and Data Presentation
P : How did you understand the problem? Are there any parts that you found difficult to understand?
S3 : I can understand the problem quite well. I know that the data given must be presented in tabular form as requested?
P : How would you construct a data distribution table from the given list of sleeping hours?
S3 : I compiled the table by grouping the sleeping time data given and then organising it into a table to make it easier to read.
P : Are you sure the table you created is appropriate? Why?
S3 : I believe the table is appropriate because I have organised the data based on the frequency of students' sleeping hours and written it in the table.
Section B: Calculation of Mean, Median, and Mode
P : What are your steps in calculating the mean?
S3 : I add up all the sleeping hours and divide by the number of students.
P : How do you determine the median of the given data?
S3 : I sort all the data from smallest to largest, then find the middle number.
P : How can you determine the mode of the data?
S3 : I look for the number that appears most often in the data, that's the mode.
P : Of the three measures of data concentration (mean, median, mode), which do you think is the easiest and most difficult to calculate? Why?
S3 : The mode is the easiest, just look at the number that appears most often. Median is a bit complicated because you have to sort it first. Mean is quite difficult if you are not careful when calculating.
Section C: Analysis of Students' Sleep Patterns
P : How do you analyse the pattern of students' sleeping hours based on the results of the calculation of data centering measures?
S3 : Honestly, I haven't understood how the sleep pattern is, I just focused on calculating the mean, median, and mode.
Section D: Reflection and Problem Solving Strategies
P : What is your strategy in solving this kind of problem?
S3 : I read the question first and then entered the data into the table for analysis.
P : I read the question first and then entered the data into the table for analysis.
S3 : I wasn't careful enough when calculating the mean, and I'm still confused about the median, and I haven't had time to analyse her sleep pattern.

Based on the answers given by students, the following analysis can be carried out: At the stage of reading and understanding the problem, students show a fairly good understanding of the problem. Students not only understand the content of the question but are also able to identify that the data provided

needs to be presented in the form of a bar chart or table according to the question request.

At the stage of exploring the problem, students have managed to present the data in the form of a bar chart quite well. This shows that students are able to process the information provided and pour it into the form of appropriate visual representations. Furthermore, in the stage of building a problem-solving strategy, students have tried to calculate the mean value but do not write the formula explicitly. In addition, students are able to correctly determine the mode based on the value that has the highest frequency of occurrence. However, students still have difficulty in determining the median appropriately, which shows limitations in understanding the concept of data centralization.

At the problem-solving stage, even though the student has tried to calculate the mean value, there is an inaccuracy in the calculation. This error is likely to occur due to a lack of thoroughness in the calculation process or a lack of understanding of the correct procedure in determining the mean.

In the stage of rechecking the answers, most of the students' answers are correct, but there are still shortcomings in the deeper analysis. The student has not explained the pattern of the student's sleep hours as requested in the question in point C. There is no interpretation as to whether the student's sleep pattern can be categorized as normal or show a deviant distribution. In fact, analysis of distribution patterns is very important to understand the overall trend of students' sleep time.

Overall, students have shown a fairly good understanding of presenting data and determining some measure of data centralization. However, there are some shortcomings in the calculation of means, determination of medians, and analysis of students' sleep patterns. For future improvements, students need to be more careful in calculating numbers, writing formulas clearly, and providing a more in-depth interpretation of the data presented.

2. Students with Moderate Math Anxiety Level (S2)

Math anxiety level 2 (S2) describes a moderate level of anxiety towards mathematics, where students experience tension when facing tasks or exams but not to the point of significantly interfering with their learning. Students with this anxiety often have an adequate basic understanding of mathematical concepts, but may feel less confident in their application. They tend to avoid maths-related situations, although they are still able to participate in class discussions and activities. interactive learning and support from teachers, S2

students can develop strategies to overcome their anxiety and improve maths skills. A supportive and positive environment is essential to help these students feel more comfortable and confident in facing mathematical challenges.

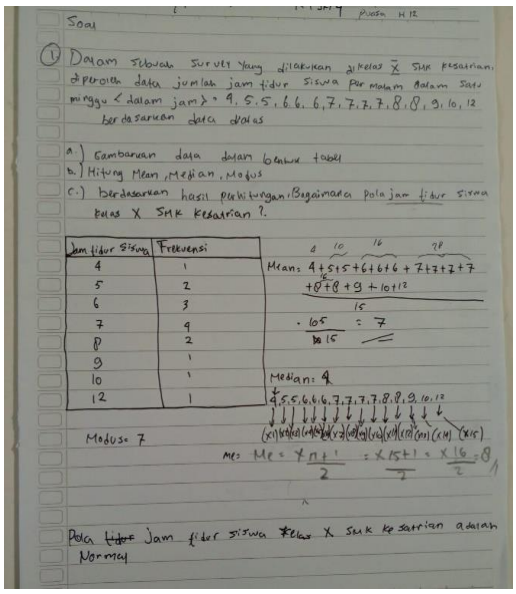

Figure 2. Students with Moderate Math Anxiety Level (S2)

Table 3. Interview with S2

Section A: Problem Understanding and Data Presentation
P : How did you understand the problem given? Are there any parts that you find difficult to understand?
S2 : I understand the question given. The data was asked to be displayed in a table. So, I organised the table first to make it tidier before starting to calculate.
P : How do you construct a data distribution table from the given list of sleeping hours?
S2 : I'm pretty sure the table is correct because I have recorded all the numbers and arranged them in the right order.
P : What difficulties did you face when compiling the table?
S2 : Sometimes I'm confused whether all the data has been entered or if I've missed something.
Section B: Calculation of Mean, Median, and Mode
P : What are your steps in calculating the mean?
S2 : I add up all the numbers in the data, then divide by the total amount of data. I should have also written the formula at the beginning, but I forgot.
P : Were there any difficulties when calculating the mean? If so, which part was the most difficult?

Section A: Problem Understanding and Data Presentation
S2 : Yes, I had summed up the total data incorrectly. It should have been 107, but I counted 105, so the mean result was also wrong..
P : How do you determine the median of the given data?
S2 : I sort the data from smallest to largest, then find the middle value. If the number of data is odd, just take the middle number. If it's even, take the two middle numbers and find the average.
P : Do you have difficulty in determining the median? If so, which part was the most difficult?
S2 : The steps were correct, but when determining the final result I still got it wrong. I need to be more careful in this part.
P : How can you determine the mode of the data?
S2 : I looked for the number that appeared most frequently in the data. This part I believe is correct because it is quite obvious.
P : Of the three measures of data concentration (mean, median, mode), which do you think is the easiest and most difficult to calculate? Why?
S2 : The mode is the easiest because you just have to see which number appears most often. Mean is a bit difficult because you have to add up all the numbers correctly, while median is also tricky because you have to be careful in finding the middle number.
Section C: Analysis of Students' Sleep Patterns
P : How would you analyse the pattern of students' sleeping hours based on the results of the calculation of the measure of data concentration?
S2 : I looked at the mean, median and mode results and compared them to see if the sleep patterns were stable or deviated.
P : In your opinion, is the sleeping pattern of this class X SMK student normal or is there a certain trend? Explain your reasoning.
S2 : I concluded that her sleep pattern was normal, but I couldn't give a good enough reason. I should have used data to explain more clearly.
Section D: Reflection and Problem Solving Strategies
P : What is your strategy in solving this kind of problem?
S2 : I usually start by arranging the data in a table first, then sorting the numbers to make it easier to analyse. After that, I calculate the mean, median and mode one by one.
P : What were the main obstacles you faced when solving this problem?
S2 : I was less careful when totalling the data, and that made the mean result wrong. I was also not used to writing the formula at the beginning, so the steps were not systematic. In addition, I didn't double-check my answer, so I didn't notice the mistake until the end.

Based on the answers given by students, the following analysis can be carried out.

At the stage of reading and understanding the problem, students show a fairly good understanding of the problem. Students also understand that the data provided needs to be presented in the form of a table or bar chart according to the question request.

At the stage of exploring the problem, the student is able to compile a table from the available data well, showing that he or she can organize the information systematically before conducting further analysis.

In the stage of building a problem-solving strategy, students have tried to calculate the mean, but have not written down the formula explicitly. This shows that although the student understands the steps of calculation, he or she pays less attention to the systematic aspect of presenting the solution. In addition, students are already able to correctly determine the mode based on the value that has the highest frequency of occurrence. However, even if the steps taken to determine the median are correct, students still experience errors in determining the final result.

At the troubleshooting stage, some inaccuracies were found in the calculations. The student made a mistake in summing the total data, where the total should have been 107, but he only added 105. This causes the obtained mean value to also be inaccurate. The mean result should be 7.14, but the student writes it as 7. In addition, even though the student was correct in writing the median formula, he was still wrong in determining the final result. Meanwhile, for the mode, the student has correctly determined the answer.

In the stage of rechecking the answers, students do not re-check the results of their calculations, so that errors in the total data and mean calculations are not detected. Moreover, although the student concluded that the student's sleep patterns were normal, he did not provide any further explanation to support the conclusion. In fact, a good conclusion must be supported by clear and in-depth data analysis.

Overall, students have shown a fairly good understanding of presenting data and determining modes. However, there are errors in the calculation of the mean and median, which shows the need for increased precision in the calculation process. In addition, students also need to get used to writing formulas clearly and double-checking the results obtained. Finally, in compiling conclusions, students should include more in-depth reasons so that the results of the analysis are more comprehensive.

3. Students with Low Math Anxiety Levels (S1)

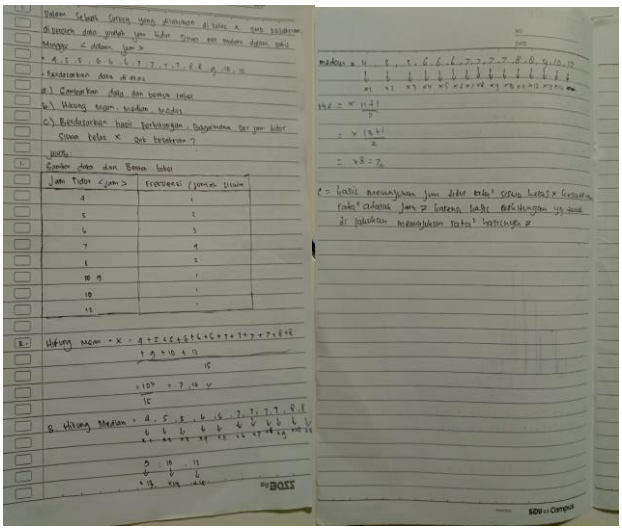

Figure 3. Students with Low Math Anxiety Levels (S1)

Table 4. Interview with S1

Section A: Problem Understanding and Data Presentation
P : How did you understand the problem? Are there any parts that you found difficult to understand?
S1 : I started by reading the problem and recording all the sleeping hours data given. After that, I arranged them in a table to make it neater and easier to analyse.
P : Are you sure the table you created is appropriate? Why?
S1 : Yes, I believe the table I made is appropriate because all the data has been recorded and organised correctly. I also double-checked that all the numbers were entered so that nothing was missed.
Section B: Calculation of Mean, Median, and Mode
P : What are your steps in calculating the mean?
S1 : I summed up all the data given, then divided it by the total amount of data. I also wrote down the steps systematically to make it easier to understand.
P : How do you determine the median of the given data?
S1 : I sort the data from smallest to largest, then find the middle value. If the number of data is odd, I take the number in the middle position. If the number is even, I take the two middle numbers and find the average.
P : How can you determine the mode of the data?
S1 : I looked at which numbers appeared most frequently in the data. Since it is quite obvious, I can determine the mode easily.
P : Of the three measures of data concentration (mean, median, mode), which do you think is the easiest and most difficult to calculate? Why?

Section A: Problem Understanding and Data Presentation
S1 : In my opinion, mode is the easiest because you only need to look at the number that appears most often. Median is also quite easy if the data is not too much. The mean can be a little more difficult if the amount of data is large because you have to do more calculations.
Section C: Analysis of Students' Sleep Patterns
P : How would you analyse the pattern of students' sleeping hours based on the results of the calculation of the measure of data concentration?
S1 : I used the mean value as an overview of the students' sleep patterns. In addition, I also looked at the mode and median to ascertain if there were any particular gaps or patterns in the data.
P : In your opinion, is the sleeping pattern of the students of class XI SMK normal or is there a certain trend? Explain your reasoning.
S1 : In my opinion, the sleep pattern is quite normal as the mean, median and mode values are not too far apart. However, if you want a deeper analysis, you can also look at the range or standard deviation to see the distribution of the data more fully.
Section D: Reflection and Problem Solving Strategies
P : What is your strategy in solving this kind of problem?
S1 : I always read the problem carefully first, then organise the data in a table. After that, I calculate the mean, median and mode with clear steps for easy understanding.
P : What were the main obstacles you faced when solving this problem?
S1 : There were no obstacles that were too difficult. However, I could have improved the quality of the analysis by considering other aspects of the data distribution, such as the range or standard deviation, to make my conclusions more accurate and in-depth.

Based on the students' answers, the following analysis can be carried out:

At the stage of reading and understanding the problem, students show a fairly good understanding of the problem. Students also understand that the data provided needs to be presented in the form of a bar chart or table according to the question request. This shows that students are able to identify the information needed to solve problems.

At the stage of exploring the problem, students have been able to present a table of the available data correctly. This suggests that students can organize the data systematically before conducting further analysis.

In the stage of building a problem-solving strategy, students have written down the steps of calculating the mean well, which shows a fairly strong understanding of the concept of averages. In addition, students are also able to correctly determine the mode based on the value that has the highest frequency

of occurrence. For the median, students are able to determine the results correctly, accompanied by systematic and appropriate steps.

At the problem-solving stage, the student's mean calculation is correct, showing that he is able to do the calculation accurately. In addition, the student has also managed to correctly determine the median, taking into account the appropriate measures. For mode, the answer given is also correct.

In the stage of rechecking the answers, the analysis carried out by students using the mean value is quite appropriate. However, to make the analysis more comprehensive, students should also consider other data distributions, such as ranges or standard deviations, to provide a more complete picture of the data distribution.

Overall, students have shown a good understanding of reading questions, presenting data, and performing basic statistical calculations such as mean, median, and mode. However, in the analysis stage, students can still improve the quality of their answers by considering other aspects of data distribution to make the analysis results more in-depth. In addition, their problem-solving skills are quite good, but it would be better if students got used to reviewing the results of their work more critically in order to come to a more thorough conclusion.

The results of the study showed that there were differences in mathematical problem-solving skills based on students' math anxiety levels. Students with high math anxiety levels (S3) showed a fairly good understanding of presenting data and determining several measures of data concentration.Students with high math anxiety consistently show weaker working memory and short-term memory performance, especially when solving math problems (Harrison, Beal, Armstrong, & Gallagher, 2024). This is due to anxiety occupying cognitive resources, making it harder to focus and process information efficiently during math tasks. Math anxiety experienced by students includes cognitive anxiety such as lack of confidence, mathematical ability, difficulty concentrating during mathematics learning, and fear of mathematics (Zuo, Huang, & Qi, 2024).

Students with moderate math anxiety (S2) have a fairly good understanding of presenting data and determining modes. However, they experienced errors in the calculation of the mean and median due to inaccuracy in the sum of the data. In addition, they also lack in providing analysis that supports the conclusions drawn.

Students with low math anxiety levels (S1) showed a better understanding of reading questions, presenting data, and performing basic statistical calculations such as means, medians, and modes. The calculations made are more accurate, and they are able to determine the median correctly. However, in the analysis stage, they can still improve the quality of their answers by considering other aspects of the data distribution to make the results of the analysis more in-depth.

The cause of math anxiety can come from within the students (internal) or the environment (external) (Wang, Xu, & Fei, 2024). The results of this study show that the causes of math anxiety experienced by students are internal factors, namely low self-confidence and students' mathematical anxiety affects problem-solving skills (Chen, Chen, & Xu, 2025). One of the causes is the number of mathematical formulas that must be remembered, and the concern that when the exam, the questions that appear will require formulas that are different from those that have been remembered. While external factors are high-stakes exams, time constraints, and the fear of getting poor scores, particularly in young children (Jerrim, Rebecca, & and Sims, 2024).

Overall, this study shows that the level of math anxiety affects mathematical problem-solving ability. Students with low math anxiety showed better performance compared to students with moderate and high math anxiety. The main difference lies in the accuracy of calculations, understanding of concepts, and the ability to conduct more in-depth analysis of the data provided.

CONCLUSION

Based on the results of the study, it can be concluded that the level of math anxiety has an influence on students' mathematical problem-solving ability. Students with low math anxiety levels tend to have a better understanding of presenting data, performing statistical calculations, and analyzing results more accurately than students with moderate and high math anxiety levels. Meanwhile, students with math anxiety are experiencing some calculation errors and lack of in-depth analysis of the data, while students with high math anxiety show greater difficulties in solving mathematical problems due to lack of accuracy and difficulty in understanding concepts systematically.

These findings suggest that a more supportive learning approach is needed to reduce math anxiety in students, such as the use of more interactive and experience-based learning methods. In addition, teachers need to encourage

students to be more confident in doing math problems and get them used to rechecking calculations to improve the accuracy and accuracy of results.

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