



THE RELATIONSHIP BETWEEN SELF-CONFIDENCE AND MATHEMATICAL PROBLEM-SOLVING ABILITIES OF FIFTH GRADE STUDENTS AT SD NEGERI 3 BANDA ACEH

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ABSTRACT

This research aims to investigate the relationship between self-confidence and mathematical problem-solving abilities of fifth-grade students at SD Negeri 3 Banda Aceh. The research utilizes a quantitative approach. The research subjects are 30 fifth-grade students. Data collection is conducted using questionnaires and mathematical problem-solving ability tests. Data analysis technique is carried out by calculating using correlation formulas. The correlation analysis used in this research is the Pearson product-moment correlation analysis. The research results indicate that the correlation value obtained is 0.087 with significance of 0.001. It can be said to be significant ($0.001 < \alpha$ (0.05). The t-value (0.461) < the t-table value (1.699). Based on this fact, H_0 is rejected and H_a is accepted. The conclusion from the research results is that there is a relationship between self-confidence and mathematical problem-solving abilities of fifth-grade students at SD Negeri 3 Banda Aceh.

Keywords: self-confidence, mathematical, problem-solving abilities

1. INTRODUCTION

Problem-solving skills not only require students to solve a problem in the way presented by the teacher but rather focus on the process of elaborating their abilities. Students can find combinations of rules they have learned previously to create a new approach and can consider the process in solving mathematical problems. As expressed by Nursaadah (2022), problem-solving embodies the focus of thinking in mathematics learning because problem-solving is a tool for generating new ideas and students' mathematical skills.

However, based on the preliminary study results (Rahayu, 2023), through the results of mathematical problem-solving ability tests, it is stated that mathematical problem-solving abilities in the education sector are still in the low category. The test results show that out of 31 students, only 4 students responded correctly to the questions, even though they used unclear strategies.

Mathematical problems are issues that arise in students' abilities to solve learning, especially in mathematics, which includes problem-solving skills, mathematical reasoning abilities, mathematical communication skills, as well as mathematical question-solving abilities.

According to Maulana (2020), one characteristic of humane mathematics learning is not only presenting mathematical concepts or formulas but also demonstrating their applications and benefits in everyday life, tailored to the students' school level or grade. However, in reality, in mathematics education at schools, students are usually confronted with memorizing formulas and routine problem-solving exercises. This situation leads to students' mathematical abilities being underdeveloped and results in low academic achievement in mathematics.

According to Perdana (2019), self-confidence is one of the important aspects of personality in the learning process. Self-confidence usually arises from someone's attitude who has emotional balance in facing things in their environment. Students need to interact with friends, teachers, and their environment according to their abilities. In the learning process, it is known that achievement is a stage of self-realization recognized by teachers and peers.

Students with high self-confidence must continue to study diligently so that the grades or results they learn do not decrease, and students who have or obtain poor grades or results in mathematical problem-solving abilities will be motivated to succeed in achieving learning goals and can persevere when facing difficulties in completing tasks, especially in mathematical tasks (Ratnasari, 2022).



According to Zega (2018), solving problems is not only a learning objective in mathematics but also the primary tool for learning itself. Therefore, problem-solving abilities become the focus of mathematics education at all levels of education, from elementary school to college. By studying problem-solving in mathematics, students will be trained to think critically, persevere in solving problems, have a high curiosity about issues, and develop their self-confidence in various unfamiliar situations they may encounter, whether in the past, present, or future social life.

Based on the initial observations conducted at SD Negeri 3 Banda Aceh, it was found that mathematics learning activities are well-guided by teachers. Teachers have accustomed students to learn in pairs or groups. Students are also required to be active, creative, and innovative in solving problems they encounter at school. However, students have weaknesses in problem-solving skills. This is evident in the mid-semester exam results, where no more than 40% of students in one class can solve problem-solving questions during the exam.

Another weakness of the students is their lack of self-confidence. Only one or two students in a class are willing to step forward to solve problems on the board without being asked by the teacher, while other students wait to be instructed by the teacher to solve problems on the board. This corresponds to the findings of the research. Additionally, the reason the researcher chose the fifth-grade class at SD Negeri 3 Banda Aceh as the research sample is because fifth-grade students are given more story-related math problems by the teacher. From the observations in the fifth-grade class at SD Negeri 3 Banda Aceh, the researcher also found that students want to ask questions but are unsure about their questions because they are afraid of being wrong and laughed at by their peers, as they do not fully understand the material provided by their teacher. As a result, these students rely on others, especially their parents, who always help them solve problems they consider difficult. Therefore, it can be said that these students lack independence in decision-making.

Based on the issues outlined above, the researcher is interested in conducting a study on the "Relationship Between Self-Confidence and Mathematical Problem-Solving Abilities of Fifth Grade Students at SD Negeri 3 Banda Aceh."

2. METHODS

The research approach used by the researcher in this case is the quantitative research method. According to Sugiyono (2017), quantitative research is a method analyzed using statistical techniques, and its data consist of numerical values. This research method can be used to determine the cause-and-effect relationship between the variables under study and to find out whether there is an influence between these variables because the first variable is assumed to cause the second variable. Meanwhile, the research type is correlational research. Correlational research is a type of non-experimental research method in which a researcher measures two variables, understands, and evaluates the statistical relationship between them without the influence of extraneous variables. In this study, there is one independent variable and one dependent variable. Self-confidence is the independent variable, and students' mathematical problem-solving abilities are the dependent variable. This research was conducted at SD Negeri 3 Banda Aceh located on Tgk Chik Di Tiro Peuniti Street, Banda Aceh. The research was carried out on August 21-22, 2023. This study used a quantitative approach. The research subjects were 30 fifth-grade students. Data collection was done using questionnaires and mathematical problem-solving ability tests. Data analysis technique was carried out by calculating using correlation formula. The correlation analysis used in this research was Pearson product-moment correlation analysis.

3. RESULTS & DISCUSSION

Based on the research conducted at SD Negeri 3 Banda Aceh, it can be observed that the analysis of self-confidence (Self-Confidence) in relation to the mathematical problem-solving abilities of fifth-grade students at SD Negeri 3 Banda Aceh obtained an average score of 71.6 for the self-confidence questionnaire and 55.3 for the mathematical problem-solving test. The correlation test results indicate that self-confidence (Self-Confidence) is correlated with the mathematical problem-solving abilities of fifth-grade students at SD Negeri 3 Banda Aceh. The correlation index between the two variables is 0.087 (very low category). Meanwhile, the hypothesis test



results show that $t\text{-observed} < t\text{-table}$ ($0.461 < 1.699$). Based on this, H_0 is rejected and H_a is accepted, meaning that there is a relationship between self-confidence (Self-Confidence) and the mathematical problem-solving abilities of fifth-grade students at SD Negeri 3 Banda Aceh.

According to Pritama (2015), factors influencing self-confidence originate from within and outside the student's personality. Factors from within the student's personality are influenced by the physical and psychological conditions of the student, while factors from outside the student's personality include parenting styles, family circumstances, family economic conditions, friends, and the living environment. This indicates that students with poor or satisfactory grades can increase their self-confidence through these factors.

With the above factors, students can improve themselves and have a positive self-concept, feeling confident in their abilities. Although, the people around them may not support their abilities. Based on the research conducted, students have good self-confidence, which is in line with research by Fitri (2018) stating that students with self-confidence will be optimistic in all activities, have realistic goals, make achievable life goals, and believe they can achieve their goals.

Like the fifth-grade students at SD Negeri 3 Banda Aceh who want to achieve satisfactory or good grades, they believe in themselves, that they can achieve what they want. For example, they work on assignments by themselves after being explained, without looking at their peers' answers, ask questions if they don't understand, and are willing to step forward when asked to, and so on.

According to Harahap (2017), mathematical problem-solving abilities are skills in overcoming problems encountered, and solving them requires a variety of strategies. Training students with problem-solving in mathematics learning is not just about expecting students to solve problems or questions given but developing a habit of problem-solving processes to enable them to navigate life's complex problems.

According to Dwianjani (2018), factors in improving mathematical problem-solving abilities include analytical ability components, consisting of problem identification and goal determination, and systematic ability components, consisting of determining possible strategies, implementing strategies, and reviewing. This indicates that students with poor or satisfactory grades can improve their problem-solving abilities through these factors.

With the above factors, students can be more confident in their abilities. The goal is to achieve the desired or satisfactory results for themselves and others. Although some students may not enjoy the subject of Mathematics because it involves many formulas or methods to solve problems.

This is in line with research by Kudsiyah (2017) stating that problem-solving is an effort to find a way out of a difficulty to achieve a goal that is not easily achieved. Like the fifth-grade students at SD Negeri 3 Banda Aceh, where students can solve problems in mathematical problem-solving questions using the methods taught, such as identifying, questioning, answering, and concluding in each calculated answer. This is done to find a way out and understand the results of a problem or question, and students better understand how to answer the questions given.

The results of this study also correspond to research conducted by Mulya (2020), which explains that students' self-confidence is related to their academic achievement, obtaining a correlation coefficient ($r\text{-observed}$) of 0.250 indicating a positive correlation of moderate level between self-confidence and academic achievement. This can also occur in students with low self-confidence in achieving academic success, especially in Mathematics.

Therefore, by improving academic results, especially in Mathematics, through habituation or getting students used to solving problems from easy to difficult levels and with story problems, students can easily answer these questions, and students can also feel more confident in their abilities.

4. CONCLUSION

Based on the research results, data analysis, and discussion conducted in the previous chapters, it can be concluded that there is a positive and significant relationship between self-confidence and mathematical problem-solving abilities of fifth-grade students at SD Negeri 3 Banda Aceh. This conclusion is supported by the data analysis, where the correlation test results show that self-confidence has a very low relationship with the mathematical problem-solving abilities of fifth-grade students at SD Negeri 3 Banda Aceh, with a correlation



index of 0.087 (very low category). Furthermore, the hypothesis test results indicate that the $t\text{-value} < t\text{-table}$ ($0.461 < 1.699$). Based on this fact, H_0 is rejected and H_a is accepted, meaning that there is a relationship between self-confidence (Self-Confidence) and the mathematical problem-solving abilities of fifth-grade students at SD Negeri 3 Banda Aceh. As for the solutions offered by the researcher, it can be done by fostering and implementing self-confidence in students to improve their mathematical problem-solving abilities and other subjects as well.

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