MATHEMATICS CONFIDENCE CAN BE IMPROVED THROUGH NUMERACY REINFORCEMENT

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Abstract

This study aims to find out that strengthening numeracy not only improves mathematical skills, but also contributes to the formation of confidence of SMPN 3 Sungai Kakap students. With a focus on the ability to solve mathematical problems, the method used in this study is a descriptive method, the form of research is Classroom Action Research (CAR) is research conducted in the classroom. The increase in student activities has an impact on student learning outcomes: The results in the first cycle averaged 66.4 and 48% of the number of students achieved completeness, the second cycle averaged 80.8 scores and 84% of the number of students achieved completeness. This shows that the reinforcement of numeracy increases students' self-confidence in solving math problems. The conclusion that efforts to increase mathematical confidence can be seen as an increase in the implementation of learning activities on students' ability to understand numeracy is very good. As well as in solving problems in numeracy, students are good. There is an increase in student results in solving problems of numeracy materials.

Keywords *Mathematics Self-Confidence, Numeracy Strengthening, Numeracy in Mathematics Education*

A. Introduction

Self-confidence is a positive attitude term that describes a person's confidence in their ability to judge themselves. Self-confidence is a measure of a person's ability to successfully carry out certain activities, such as self-efficacy, perceived ability, and perceived competence (ben et al., 2022). Self-efficacy, the beliefs individuals have about their ability to complete tasks, has been linked to individual behavior and choices in a variety of areas (Chen et al., 2023). The current study contributes to the existing body of knowledge by emphasizing that assessment and learning methods are helpful in student satisfaction-related self-efficacy (Mahmud et al., 2024). These findings suggest that gaining self-efficacy momentum in the classroom may be more predictive of academic achievement than having a general trend toward self-confidence in one's abilities relative to peers (Wolff et al., 2024). When students feel successful, they are more confident in their abilities (i.e., higher self-efficacy) (Ford et al., 2023). However, the reality is that students' self-confidence often does not believe in their abilities, so they find it difficult to solve problems with mathematical concepts. That study concludes that these four variables are significantly and positively correlated and that students' self-efficacy can influence problem-solving dispositions through metacognitive dispositions and critical thinking dispositions. Self-efficacy, for example, refers to an individual's assessment of their ability

to succeed in a specific task, such as solving problems or achieving targets (Usher & Pajares, 2019). Someone who has a high level of self-confidence tends to be better able to overcome pressure and obstacles because they believe in their capacity (Richardson & Eccles, 2021).

Self-confidence has also been proven to be closely related to motivation and achievement, especially in educational and work environments (Pintrich & Schunk, 2021). In the field of education, increasing self-confidence can significantly improve academic achievement and positive attitudes toward learning (Zhou et al., 2023). Recent research also shows that individuals with high self-confidence are more likely to demonstrate strong mental resilience and better emotional well-being when facing life challenges (Martins et al., 2022).

Research through strengthening numeracy, especially through a contextual and applied approach, can develop self-confidence in mathematics. Strategies such as project-based approaches and problem-based learning have also been proven to improve students' numeracy skills and self-confidence (Sahin, 2021). These experiences allow students to not only improve conceptual understanding but also problem-solving skills that are critical in mathematics (Kitsantas, 2022). Self-confidence in mathematics is a crucial element that influences students' ability to learn and apply mathematical concepts. Although many studies show that self-confidence is positively related to academic achievement,). In recent years, researchers have begun to explore the link between mathematics self-confidence and numeracy abilities as a basis for strengthening mathematics skills (Ritchie & Bates, 2022). Numeracy, which includes the basic ability to count, understand numbers, and use mathematics in everyday life, has proven to be the foundation for students to have a strong understanding of concepts. Hence, they are able to build better self-confidence in dealing with more complex material (Attard, 2020).

In fact, many students experience anxiety and doubt in their mathematics abilities. In the era of modern education that demands high numeracy competencies, this challenge becomes increasingly relevant. Numeracy, as a basic ability that includes understanding and using numbers, is not only fundamental for solving mathematical problems but is also important in everyday life. A lack of numeracy skills often contributes to students' low self-confidence in mathematics. Research shows that students with strong numeracy skills are more likely to feel confident and able to face complex mathematical challenges. Improving numeracy can be an effective solution for building students' confidence in mathematics. By designing intervention programs that focus on strengthening numeracy skills, we can give students the tools necessary to face mathematical tasks with more confidence. Through an integrated approach, including experiential learning and the use of technology, students can be empowered to overcome anxiety and build sustainable self-confidence.

This research aims to determine how strengthening numeracy not only improves mathematical skills but also contributes to the formation of students' self-confidence at SMPN 3 Sungai Kakap by focusing on the ability to solve mathematical problems.

B. Literature Review and Hypothesis Development

Math confidence

Self-confidence is a positive mental attitude of an individual who positioned or conditioned himself can evaluate about themselves and their environment so that it feels comfortable to perform

activities in an effort to achieve the planned goals (Kunhertanti & Santosa, 2018). Meanwhile, self-confidence is a feeling of confidence in one's abilities which includes good assessment and acceptance of oneself as a whole, acting in accordance with what other people expect so that the individual can be accepted by other people and their environment (Fardani et al., 2021).

Self-confidence in mathematics (mathematics self-efficacy) has become a significant concern in education, especially regarding its impact on academic achievement and student engagement in long-term learning (Pajares, 2020; Usher, 2021)

Numeracy Strengthening

Numeracy is the ability to think to produce concepts, procedures, facts and mathematical tools that can solve everyday problems in various types of relevant contexts and individuals. According to (Mahmud Pratiwi, 2019), numeracy can be defined as the ability to apply number concepts and calculation operation skills in everyday life and the ability to interpret information expressed mathematically, for example, in the form of graphs, charts, and tables.

Hypothesis Development

Hypothesis Development in this research includes an analysis of each aspect observed

$$N = \frac{n}{p}$$

Information :

N = Aktivitas siswa
n = Jumlah perolehan skor masing-masing siswa
p = Jumlah seluruh siswa

KI = × 100 ATAU
KK = × 100%

Keterangan:

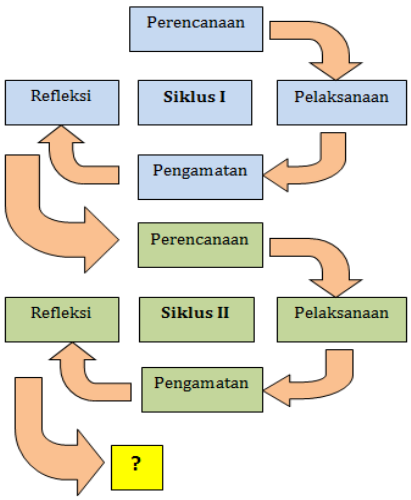
KI = Ketuntasan Individu
P = Perolehan nilai
S = Jumlah soal

Information:

KK = Prosentase Ketuntasan Klasikal
N = Jumlah nilai masing-masing siswa
S = Jumlah Siswa

C. Research Method

The method used in this research is a descriptive method. Research methods are basically a scientific way to obtain data with specific purposes and uses (Sugiyono, 2020). The form of research is Classroom Action Research (CAR), which is research carried out in the classroom with the aim of increasing mathematics self-confidence through strengthening numeracy in the learning of students at SMPN 3 Sungai Kakap. The procedure in classroom action research is illustrated below.



D. Discussion

Data from observations of student activities in learning are shown below;

Table1. student activities in cycles 1 and 2

Tabel 1Recapitulation of Student Activity Observation Results

No	RATED ASPECT	RESULTS ON THE CYCLE	
		I	II
1	Concentration	2,8	3,8
2	ability to understand the concept of numeration	3	3,8
3	Critical and Logical Thinking Skills	3,2	3,8
4	Confidence in Mathematics in Completing assignments	3,3	3,9
5	Active Engagement and Participation	3,3	3,7

Based on data from table 1. Increased student activity has an impact on student learning outcomes, which can be observed in table 1. The results in cycle I averaged 66.4, and 48% of students achieved completion; in cycle II averaged 80.8 and 84. % of students achieving completion. This shows that strengthening numeracy increases students' self-confidence in solving mathematical problems.

Tabel 2 Recapitulation of Student Learning Results

Cycle	Average Value	% Completeness
I	66,4	52
II	80,8	84

Based on the results, the average student learning outcomes always increase in each cycle. In cycle I, the average student score was 66.4, with a completion percentage of 52%. Student learning outcomes had improved compared to the score before improvement, but 48% of students were not serious about doing their assignments, so improvement was needed in cycle II. The results of the action in cycle II with a completion percentage of 84%; in the learning process, students try to correct the mistakes made in cycle I. This is because the correction process is repeated so that students become more skilled and able to understand concepts, so they are confident in solving problems easily, and easy to solve the problems in the questions.

E. Conclusion

The conclusion is that efforts to increase mathematics self-confidence show an increase in the implementation of learning activities and students' ability to understand numeracy is very good. And in solving problems in numeracy, students are good. There is an increase in student learning outcomes in solving numeracy material problems.

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