**The Effects of Metacognitive Strategies on Students' Mathematical Reasoning and Problem-Solving Abilities**

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***Abstract***

Metacognitive strategies, which involve thinking about one's own thinking processes, have been found to enhance mathematical reasoning and problem-solving abilities in students. These strategies include planning, monitoring, and evaluating one's thinking processes, as well as using self-reflection and self-regulation techniques. Students who apply metacognitive strategies show improved mathematical reasoning and problem-solving abilities. These strategies promote awareness of one's thinking processes, enabling more effective problem-solving and self-regulation. They also promote collaborative learning, encouraging discussions and critical analysis of each other's reasoning. Further research is needed to understand optimal instructional practices and the long-term effects of metacognitive strategies on students' performance.

***Keywords:*** *Metacognitive, problem-solving abilities, reasoning*