



**THE MEDIATING ROLE OF MATHEMATICAL PERSEVERANCE AND
SELF-EFFICACY IN THE RELATIONSHIP BETWEEN DOMAIN –
SPECIFIC ACADEMIC HOPE AND STUDENT MATHEMATICS**

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ABSTRACT

This action research study explored how Mathematical Perseverance and Self – Efficacy mediate the connection between Domain – Specific Academic Hope and Mathematics Achievement. High school students frequently encounter psychological barriers that hinder their academic success, highlighting the need for interventions that address non-cognitive factors. The research utilized a 12-week intervention designed with a convergent parallel mixed methods approach, involving 84 eleventh – grade STEM students from Talisay Senior High School.

The strategies employed included teaching students how to construct strategic pathways for cultivating Academic Hope and promoting productive struggle to enhance Mathematical Perseverance, along with providing personalized feedback to strengthen Self-Efficacy. For the quantitative analysis, paired t-test and mediation modeling were used, while the qualitative component involved a thematic analysis of interviews. A key limitation noted was the short duration and high – stakes nature of the intervention.

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The findings indicated significant gains in Academic Hope, Mathematical Perseverance, Self – Efficacy, and Mathematics Achievement following the intervention. The mediation analysis revealed that Self-Efficacy and Mathematical Perseverance fully mediated the relationship between Academic Hope and Mathematics Achievement, with Self – Efficacy identified as the most significant mediator. The qualitative insights aligned with the quantitative results, suggesting that positive, targeted feedback from teachers bolstered students’ self-belief, reinforcing the statistically significant link of the Self – Efficacy pathway. The study concluded that interventions that effectively translate motivational hope into behavioral perseverance, and that subsequently enhance self-efficacy, are crucial for achieving meaningful academic improvements.

Keywords: *academic hope, mathematical perseverance, mathematics achievement, self-efficacy*

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