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Vedic Algorithms as a Relevant Standpoint in Augmenting Self-Efficacy and Procedural Fluency of Grade 10 Students

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Abstract

Improving numerical skills of students requires knowledge of procedures and efficacy in solving. But still, the main concerns nowadays that involve students' learning experiences have been difficulties and failures in mathematics. Thus, this study aimed to describe how Vedic Algorithms contribute to augmenting self-efficacy in terms of mastery experiences, vicarious experiences, social persuasion and physiological states and procedural fluency in terms of written procedures and mental methods. Experimental research design was used to achieve the purpose of the study achieved through a purposive sampling of selected Grade 10 students of Del Remedio National High School in San Pablo City, Laguna. The quantitative data revealed that there is a significant difference between the level of students' procedural fluency before and after exposure to Vedic Algorithms. In terms of self-efficacy, specifically mastery experiences and physiological states, considerable relationship was observed with their written procedures. However, no significant relationship exists between procedural fluency in terms of mental methods and respondents' mathematical self-efficacy. Considerably, students who perceived a high mathematics self-efficacy showed fluency on writing solutions. Implications suggest that constant practice into using Vedic Algorithms should not solely focus on following correct procedures but also on modifying it based on the concept of a technique. Moreover, teachers may accept unique solutions achieved through varied methods with proper justifications employed by students.

Keywords: Vedic algorithms, self-efficacy, procedural fluency, written procedures, mental methods