

IMPACT OF VEDIC MATHEMATICS TECHNIQUES INSTRUCTION ON THE ATTITUDE TOWARDS MATHEMATICS LEARNING

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Abstract.

Education is the cornerstone of any nation, shaping the future of generations and laying the groundwork for a thriving society. In this context, the shift from rote memorization to skill-based education is critical for fostering critical thinking, problem-solving abilities, and lifelong learning. Among the core subjects, mathematics often stands out as one of the most challenging areas for students, requiring a fundamental change in teaching approaches to make it more accessible and engaging. This study aims to examine the impact of Vedic Mathematics instruction on the attitude of teacher trainees Mathematics Learning. A workshop on 'Techniques of Vedic Mathematics' was conducted by the researcher for the S.Y. B.Ed. students of St. Teresa's Institute of Education, Santacruz (West). Use of various Vedic Mathematics techniques were demonstrated and practice sums were given to the students. After the workshop, the data on the impact of the workshop was collected from 43 students. 93 % of the students felt that Vedic Mathematics Techniques valuable tool for learning Mathematics effectively and it saves time while solving the problems. sparks interest in Mathematics learning. Most of the teacher trainees felt that the Vedic Mathematics Techniques facilitate efficient learning of Mathematics.

Key words: *Vedic Mathematics, Mathematics Learning*

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Introduction:

Mathematics can indeed be a joyful subject! It's all about perspective and approach. Mathematics is like a fascinating puzzle that challenges our minds and encourages us to think logically and creatively. The New Education Policy (NEP) 2020 in India aims to transform the education system to meet the needs of the 21st century. While Vedic Mathematics isn't explicitly mentioned in the NEP document, the policy emphasizes the promotion of holistic and multidisciplinary education, integrating Indian knowledge systems with modern education.

In the context of the NEP 2020, the emphasis on integrating Indian knowledge systems could provide an opportunity for the inclusion of Vedic Mathematics in the curriculum, although its adoption would likely depend on individual state policies and the discretion of educational institutions. Overall, the NEP encourages a more

inclusive and flexible approach to education, which could potentially accommodate the incorporation of Vedic Mathematics if there is sufficient demand and evidence of its efficacy (NEP, 2020).

Mathematics, despite its significance, is frequently perceived as a daunting subject within the school curriculum. Many students struggle with it due to its abstract concepts, logical reasoning, and cumulative nature, which builds upon prior knowledge. These challenges often result in a negative attitude toward mathematics, leading to avoidance and poor performance. As a result, there is a pressing need to adopt innovative teaching methods that transform mathematics learning into a more enjoyable and interactive experience.

One such approach is Vedic Mathematics, an ancient system of mathematical principles rooted in the Vedas. This system offers a rich collection of techniques designed to simplify complex calculations and enhance students' mathematical understanding. The sutras, or aphorisms, within Vedic Mathematics, provide intuitive and efficient strategies that empower students to solve intricate problems with ease and confidence. By leveraging the simplicity and elegance of these methods, Vedic Mathematics not only deepens comprehension but also makes learning mathematics a joyful and rewarding experience.

Vedic Mathematics is rooted in the ancient Indian scriptures known as the Vedas, with the system being rediscovered by Swami Bharati Krishna Tirtha in the early 20th century.

It consists of 16 sutras (formulas) that simplify complex calculations, allowing for faster and more intuitive problem-solving.

Key Features:

- **Mental Calculation:** Vedic Maths encourages mental calculations and reduces reliance on pen and paper.
- **Speed and Efficiency:** The techniques are designed to solve problems quickly and efficiently.
- **Versatility:** It can be applied to various areas of mathematics, including arithmetic, algebra, geometry, and calculus.

Benefits:

- **Enhanced Mental Skills:** Learning Vedic Maths can improve mental agility and problem-solving abilities.
- **Increased Confidence:** Mastering these techniques can boost confidence in mathematics.
- **Time Management:** The speed and efficiency of Vedic Maths can be particularly useful in competitive exams and other situations where time is a factor.

Aim of the Study:

To study the impact of Vedic Mathematics Techniques Instruction on the Attitude towards Mathematics Learning

Objectives of the Study:

To assess the impact of Vedic Mathematics Techniques Instruction on the Attitude towards Mathematics Learning

Operational Definition of the Terms:

Impact: The term generally refers to the effect or influence that something has on a person, thing, situation, or event. It can be positive, negative, or neutral, and it can manifest in various ways depending on the context.

Vedic Mathematics: Vedic Mathematics is an ancient Indian system of mathematics, rediscovered from the Vedas, that offers techniques and formulas, or "sutras," to solve mathematical problems quickly and efficiently, emphasizing mental calculations.

Learning: It is a process of acquiring new knowledge, skills, or behaviors through experience, study, or instruction.

Methodology of the Study:

The researcher in this study has used the Descriptive and Survey method to carry out the study.

Sampling Technique:

Convenience sampling technique was used for the present study.

Tools of the Study:

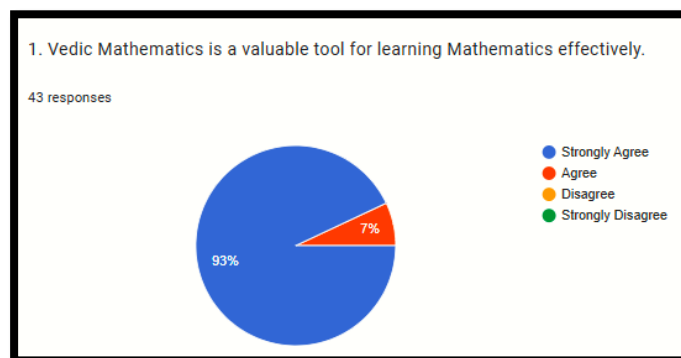
A 4-point rating scale was prepared by the researcher consisting 13 items. It was administered on 43 teacher-trainees of St. Teresa's Institute of Education studying in S.Y.B.Ed.

Data Analysis:

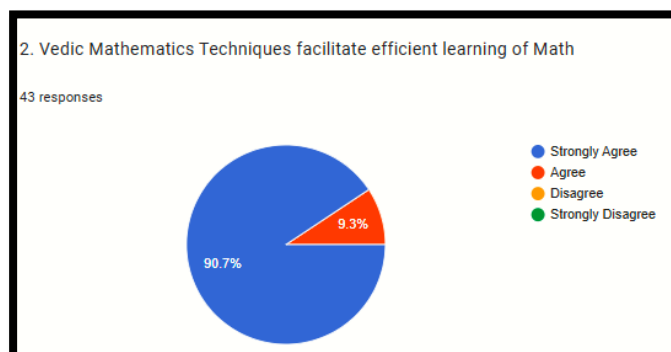
The researcher has used the Descriptive Analysis. Percentage was used to represent the data.

Findings and Conclusion:

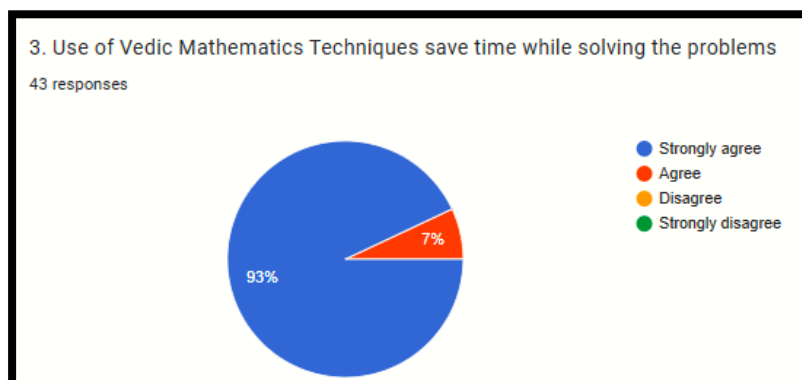
- 93 % teacher trainees strongly agreed that Vedic Mathematics is a valuable tool for learning Mathematics effectively whereas 7% teacher trainees agreed to the same.



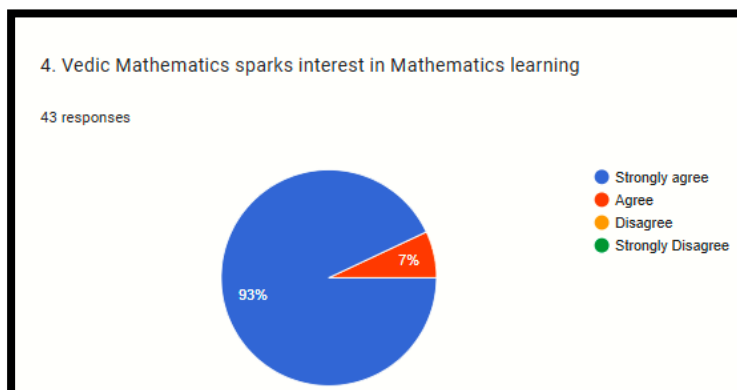
- 90.7 % teacher trainees strongly agreed that Vedic Mathematics Techniques facilitate efficient learning of Mathematics whereas 9.3 % teacher trainees agreed to the same.



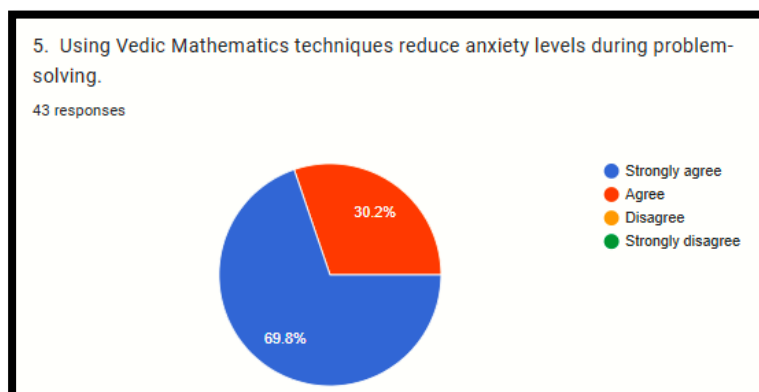
- 93 % teacher trainees strongly agreed that use of Vedic Mathematics Techniques save time while solving the problems whereas 7% teacher trainees agreed to the same.



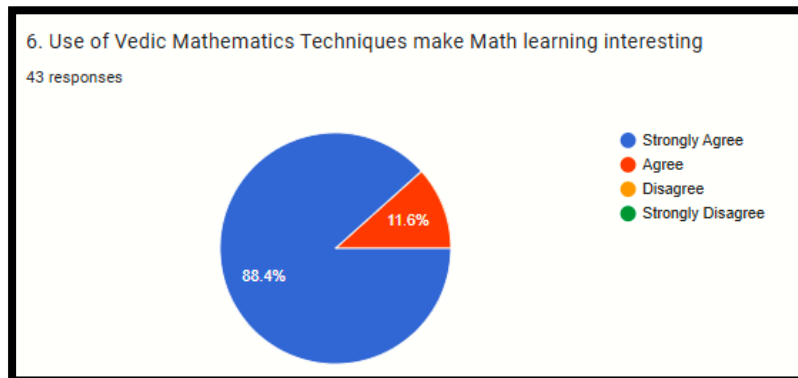
- 93 % teacher trainees strongly agreed that Vedic Mathematics sparks interest in Mathematics learning whereas 7% teacher trainees agreed to the same.



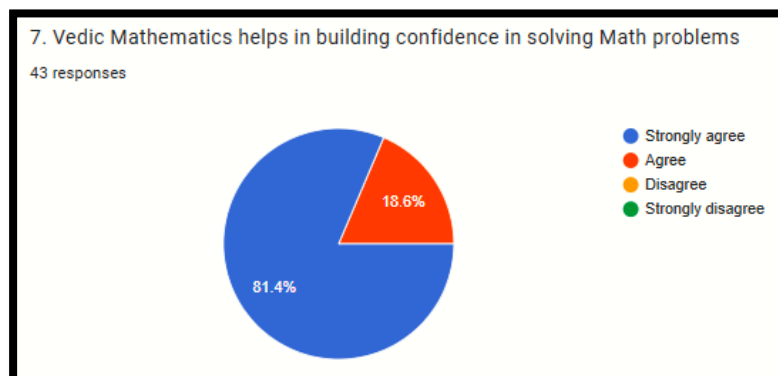
- 69.8 % teacher trainees strongly agreed that using Vedic Mathematics techniques reduce anxiety levels during problem-solving whereas 30.2 % teacher trainees agreed to the same.



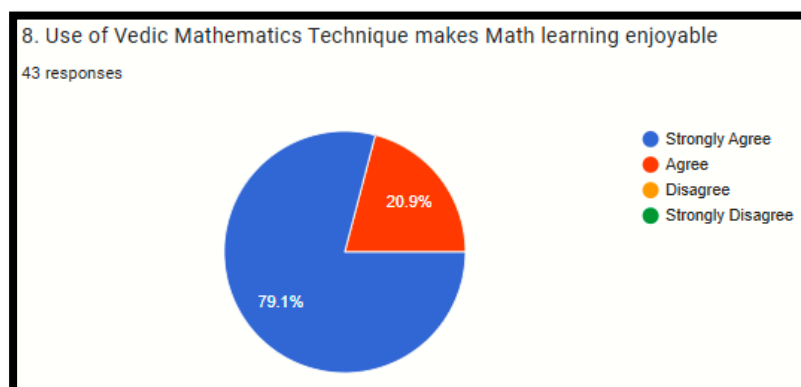
- 88.4 % teacher trainees strongly agreed that use of Vedic Mathematics Techniques make Math learning interesting whereas 11.6% teacher trainees agreed to the same.



- 81.4 % teacher trainees strongly agreed that Vedic Mathematics helps in building confidence in solving Math problems whereas 18.6 teacher trainees agreed to the same.



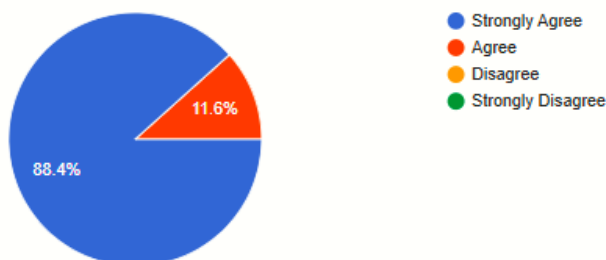
- 79.1 % teacher trainees strongly agreed that use of Vedic Mathematics Technique makes Math learning enjoyable whereas 20.9 % teacher trainees agreed to the same.



- 88.4 % teacher trainees strongly agreed that Vedic Mathematics helps in developing mental alertness whereas 11.6 % teacher trainees agreed to the same.

9. Vedic Mathematics helps in developing mental alertness.

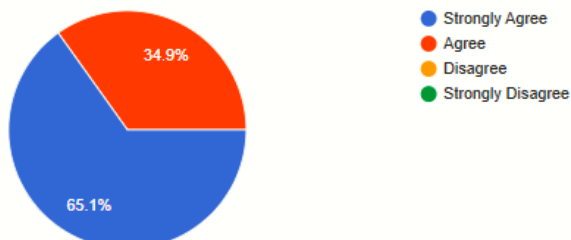
43 responses



- 65.1% teacher trainees strongly agreed that use of Vedic Mathematics Techniques minimize calculation errors whereas 34.9 % teacher trainees agreed to the same.

10. Use of Vedic Mathematics Techniques minimize calculation errors

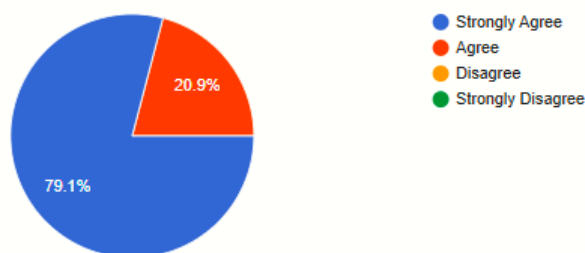
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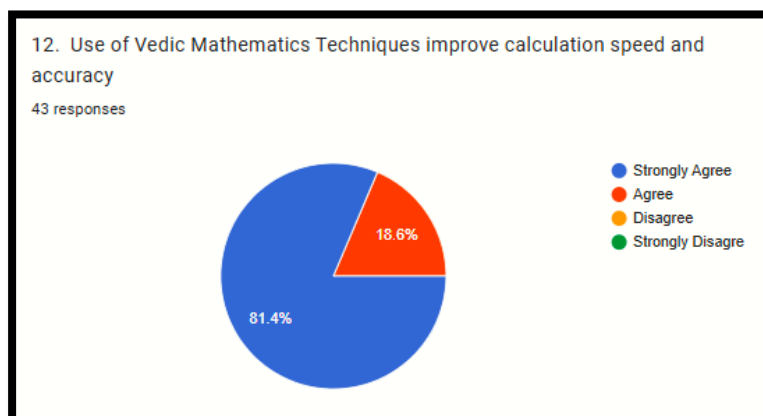
- 79.1 % teacher trainees strongly agreed that use of Vedic Mathematics Technique improves memory and concentration whereas 20.9 % teacher trainees agreed to the same.

11. Use of Vedic Mathematics Technique improves memory and concentration

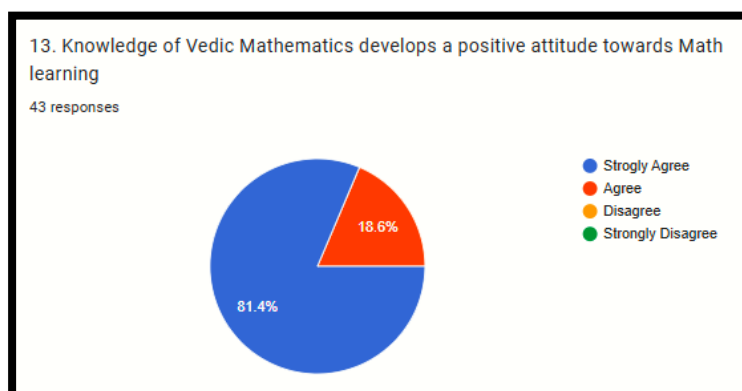
43 responses



- 81.4 % teacher trainees strongly agreed that use of Vedic Mathematics Techniques improve calculation speed and accuracy whereas 18.6 teacher trainees agreed to the same.



- 81.4 % teacher trainees strongly agreed that Knowledge of Vedic Mathematics develops a positive attitude towards Math learning whereas 18.6 % teacher trainees agreed to the same.



Conculsion:

Vedic Mathematics offers a quick and enjoyable approach to learning and mastering Mathematics. With its efficient calculation methods, students can solve problems faster, making Mathematics more engaging. The Vedic method fosters a deeper understanding of numbers and their relationships, making learning memorable and lasting. This skill is invaluable for modern competitive exams, where speed and accuracy are essential. In conclusion, teachers should promote the learning of Vedic Mathematics among students. It should be integrated into the school curriculum, particularly at the elementary level, as a supplementary subject to mathematics.

Dedicated time for practicing Vedic math techniques can enhance problem-solving skills and foster active engagement. Moreover, Vedic Mathematics has the potential to nurture students' artistic abilities and talents, while also alleviating the fear of mathematics. Overall, it has the power to spark interest and enthusiasm for mathematics among students.

Implications:

The positive outcomes of this study suggest several implications for future educational practices and research:

Curriculum: Techniques of Vedic Mathematics can be incorporated into the Mathematics curriculum to support

and enhance traditional teaching methods.

Teacher Training: FDPs for Mathematics teachers could include training in Vedic Mathematics to equip them with alternative pedagogical strategies that can be adapted to various learning styles.

Research: Research studies could provide insights into the long-term effects of Vedic Mathematics in enhancing students' Mathematical competencies and their application in real-life situations.

Technology Integration: The development of digital tools and platforms that incorporate Vedic Mathematics could further support interactive and engaging learning experiences. MOOCs can be prepared to help students learn Vedic Mathematics.

Global Application: Considering the universal nature of mathematics, the findings of this study could encourage the adoption of Vedic Mathematics mediated pedagogy in diverse educational contexts worldwide.

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