



SHOULD VEDIC MATHS BE INTRODUCED IN ACADEMIC CURRICULUM

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Abstract: Vedic mathematics is an ancient mathematical theory derived from the Vedas, notably the Atharva Veda. Between 1911 and 1918, it was rekindled by Sri Bharati Krishna Tirthaji Maharaj. It is based on sixteen sutras or formulae that enable rapid and precise calculations. Vedic Mathematics is founded on simple, logical ideas that may be applied to complicated calculations. It is an effective tool for comprehending and solving mathematical problems. Although Vedic Maths has been practised in India for centuries and is gaining popularity in the *West*, relatively little has been done to educate students and their parents about its potential. The majority of parents who have shown an interest in learning about Vedic mathematics also believe that it should be included into the school's curriculum. In this research, we explore the many sutras of Vedic mathematics and analyse the viewpoints of both parents and students using a questionnaire to answer the pressing question of what grade level Vedic mathematics should be incorporated into the curriculum.

Index Terms: Vedic Mathematics, Sutras of Vedic maths, Vedic maths in curriculum

1. INTRODUCTION:

The Vedas, a set of Hindu scriptures composed in Sanskrit between the years 1500 and 500 B.C.E., are the earliest known source for Vedic mathematics. The mathematical ideas and formulae included in the Vedas weren't compiled into a coherent framework until the twentieth century. Because of its ease of use and effectiveness in solving mathematical problems, this concept or theory, which was rediscovered in the early 20th century by an Indian mathematician called Sri Bharati Krsna Tirthaji Maharaja, has become widely famous [1]. Tirthaji, who was born in the Puri village of Orissa state in March 1884, has a deep understanding of several disciplines. After years of research, Sri Bharati Krsna Tirthaji Maharaja concluded that the Vedas presented a logical and consistent mathematical system. He devoted the next many years to developing and writing commentaries on what would become known as Vedic mathematics.

At its core, Vedic mathematics promotes mental processes above the use of paper and pencil calculations. These procedures are designed to be simple to learn and use, making them ideal for doing calculations in your brain. All mathematical problems, according to Vedic mathematics, may be simplified to a handful of fundamental formulas [2-4]. Then, every problem in mathematics, from elementary arithmetic to advanced algebra, may be solved by using the appropriate formula.

The speed and simplicity with which Vedic mathematics may replace conventional techniques of calculation is one of its primary advantage. Vedic methodologies, for instance, may be used to conduct complicated multiplications and divisions in a fraction of the time it would take to accomplish the same calculations using conventional methods. Vedic mathematics is thus particularly well-suited to competitive tests, when every second counts. Increasing pupils' enthusiasm for the subject of mathematics is another aspect where Vedic mathematics has been shown to succeed. This is due to the fact that the procedures are intended to be straightforward and pleasurable to use. Motivating students to keep studying and practising requires a system like Vedic mathematics that allows them to obtain immediate and clear information about their solutions due to rapid cross-checking system.

2. Principles of Vedic Mathematics:

On 16 sutras, Vedic mathematics is established. The following sutras are utilised in Vedic mathematics, particularly for determining squares, square roots, and cube roots, as well as for basic to complicated multiplications, divisions, and equations using algebra [1,5]. Ekadhiken Purven, which translates to "by one more than the preceding one," is the name of the very first sutra. "Nikhilam Navatascaramam Dasatah," which translates to "all from 9; last from 10," is the second sutra. This makes it possible to multiply and divide even without prior knowledge of higher multiplication tables. Since this approach works in any circumstance, it has countless potential applications. Next Sutra is 'Urdhava - Tiryabhyam' which mean vertically & cross-wise, found useful in calculating all kinds of multiplications & divisions.

The fourth sutra is "Paravartya Yojayet," which translates to "Transpose and Apply." This rule relates to transposition, which refers to a sign change. When the Nikhilam technique is shown to be ineffective, the Paravataya Sutra is employed to address the issues. Other

Vedic mathematics sutras include "sunyam Samyasmuccaye," "Anurupye," "Sankalana-Vyavakalana bhayam," "Purana-puranabhyam," "Calana-Kalanabhyam," "Yavadunam," "Vyasti samatih," "sesanyankena Caramena," "Sopantayad.

In addition to these 16 Sutras, there are 13 Upsutras that may be used to calculate multiplications, divisions, and other operations when the multiples, the divisor, and other operations are the submultiples or sub-divisors of an appropriate base [1,5].

These sutras also assist in determining the divisibility of greater numbers such as 29, 59, 139, etc., which are difficult to determine using conventional mathematics since it is difficult, if not impossible, to memorise the multiplication tables for such enormous numbers.

3.Result and analysis of current research work:

Despite the fact that it has been shown that Vedic mathematics facilitates easier and quicker calculations, nothing has been done to raise student awareness of this topic. A total of 260 students (across all grade levels) and their parents were surveyed for this research to get their perspectives on implementing Vedic mathematics in the curriculum. The ages of the students in this research ranged from 12 to 18 years (26.4%), 19 to 25 years (70.6%), and 26 to 32 years (3%), with 25% of parents being in the 26 to 32 years of age group and 75% being older than 33 years.

Many people are unfamiliar with Vedic mathematics, and those who are often misunderstand it as a collection of shortcuts for mental arithmetic. The survey reveals a dire scenario as 60% of parents in the survey who were asked about their knowledge of Vedic mathematics among themselves said that they knew very little about it [Figure 1].

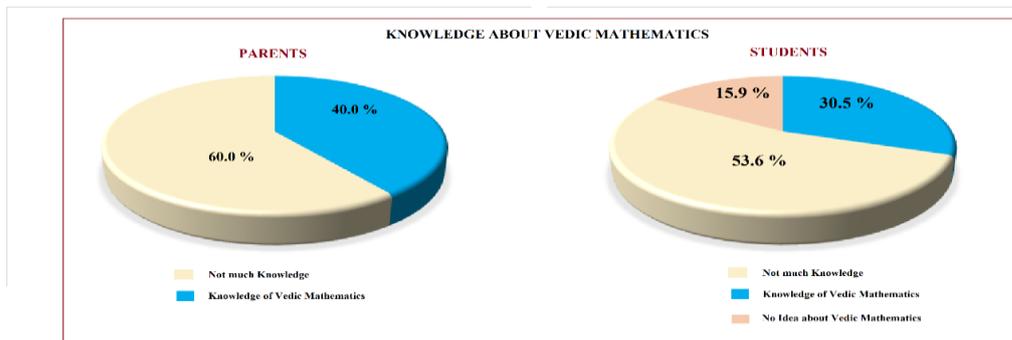


Figure 1: Knowledge of Vedic Mathematics among parents and students

While 30.50 % of students surveyed claim to have understanding of Vedic mathematics, 53.60 % have very little knowledge and 15.90 % know nothing about it [Figure 1].

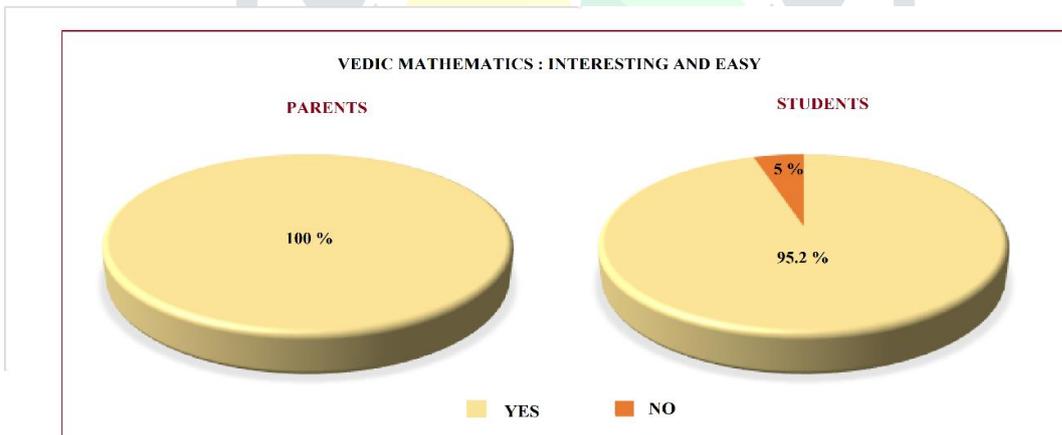


Figure 2: Parents and students view about Vedic Mathematics, whether it is easy and Interesting.

Even though some parents and students have no or very little knowledge of Vedic mathematics, the majority of them (100 percent and 95.2%, respectively) believe that Vedic mathematics makes mathematics simpler and more interesting [Figure 2]. Moreover Except 2.9 % students, all the parents and other students [Figure 3] agree that with Vedic mathematics, calculations may be performed considerably more quickly than with standard mathematics.

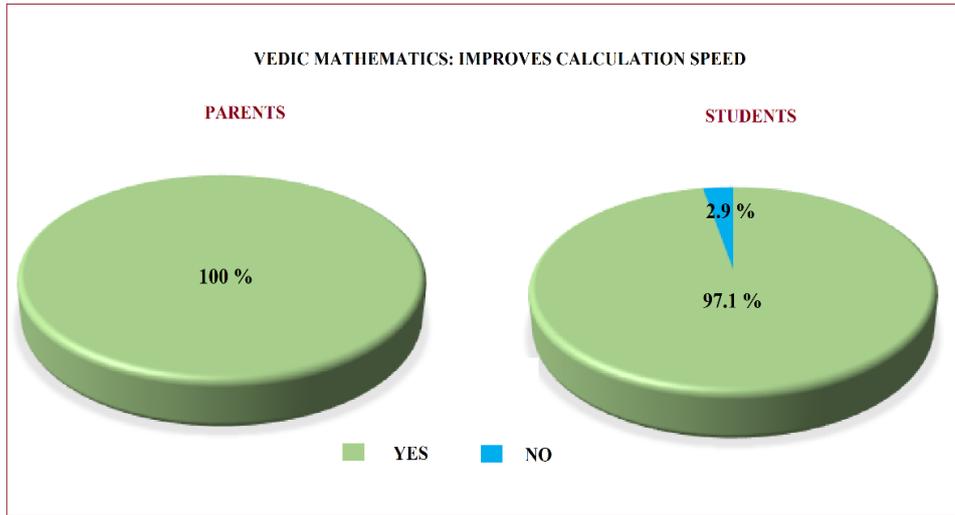


Figure 3: Parents and students view about Vedic maths improving calculation skills

Most respondents to the survey agreed that they support that Vedic mathematics should be included in the standard curriculum [Figure 4] and that doing so would bring us closer to our culture [Figure 5].

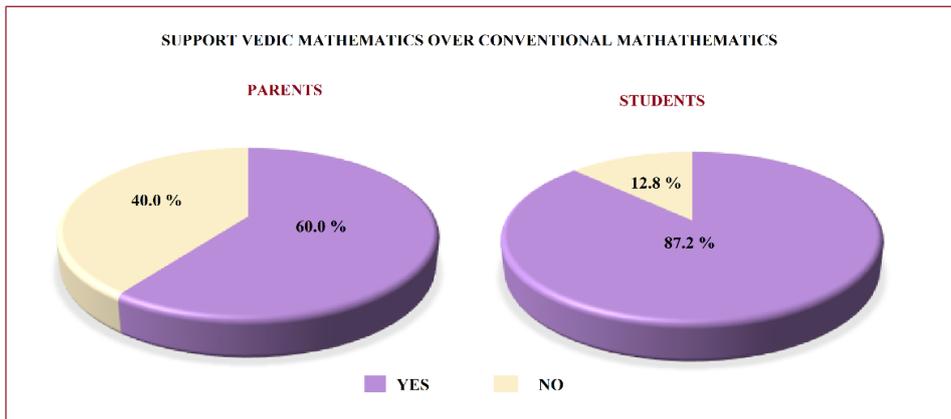


Figure 4: Preference of Vedic mathematics over conventional mathematics

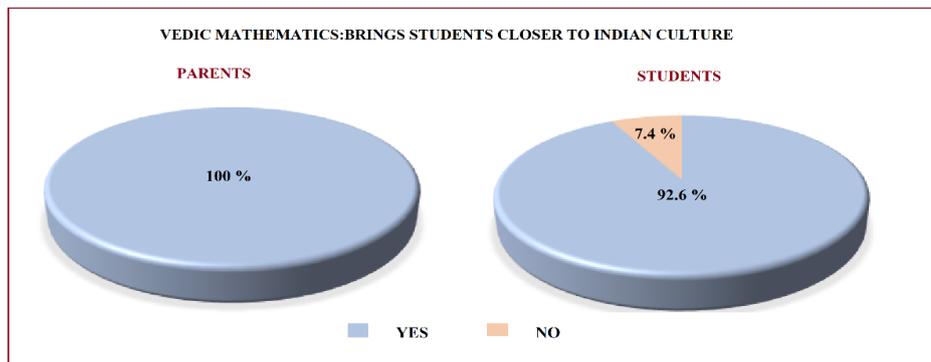


Figure 5: Students and parents view about Vedic mathematics will bring students closer to Indian culture

The survey clearly indicates that both parents and students agree that students' mathematical abilities, knowledge, and outlook may all benefit from the incorporation of Vedic mathematics into the syllabus. While only 20 % believe that Vedic mathematics should be taught at the elementary level, 80 % believe that it should be taught at the secondary level, and 45 % and 39 % of students respectively

are of same view point, while nearly 16 % believe that it should be taught only at the higher education level.

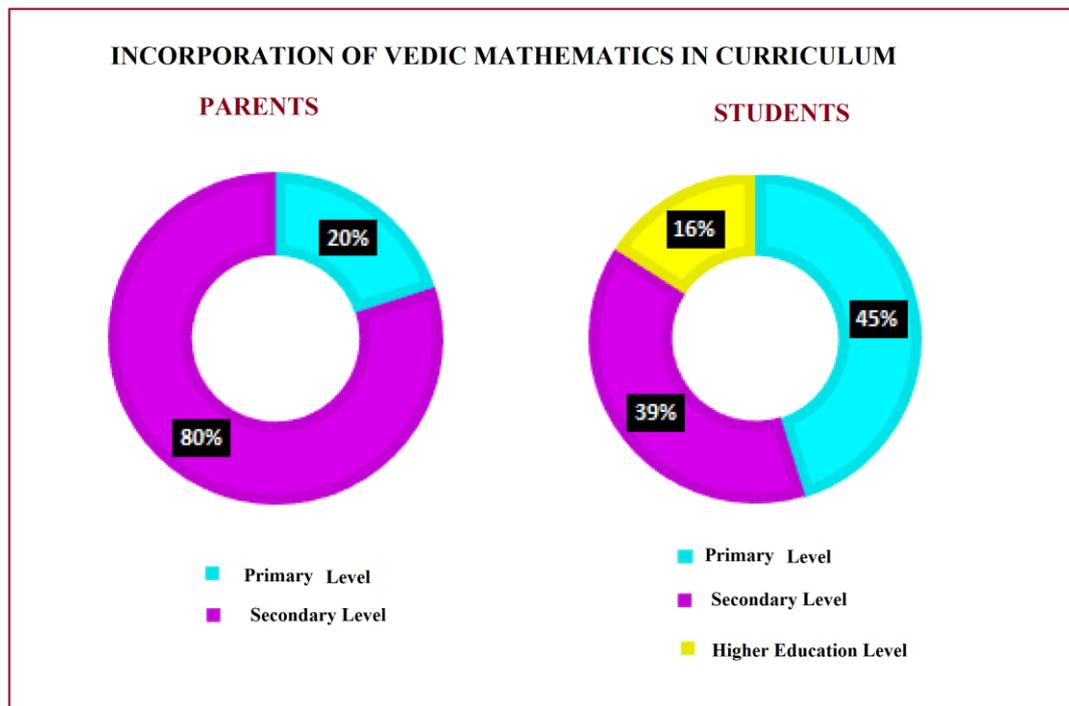


Figure 6: Parents & Students views about education level at which Vedic Maths should be incorporated in curriculum

4. Conclusions: There is great potential for Vedic Mathematics to transform the way we think about and solve mathematical difficulties. In particular, students who have a phobia of numbers and who struggle to get their calculations straight will benefit greatly from its straightforward, efficient methods and its ability to stimulate their interest in mathematics.

According to the results of this survey, both parents and kids are interested in learning Vedic math secrets to sharpen their logical thinking and calculating abilities. It is our duty as educators, parents, or guardians to educate our students and youngsters how to use these highly accessible but effective Vedic Mathematics tools in a manner that is both engaging and easy to understand. Yoga and Vedic mathematics are both components of our ancestors' legacy of knowledge. It is the time to acknowledge and value our cultural history.

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