

# **Challenges to assimilating Vedic Mathematics in the Maths classroom**

**Swati Dave**

## **Abstract**

As proponents of Vedic Math our ultimate goal and dharma is to reveal the beauty of this ancient mathematical system to the world. Every child should have the opportunity to study this simple, fast, and easy form of math.

The only way to achieve this is to integrate Vedic Math into the K-12 math curriculum. Some of the Vedic Math advocates are working hard with curriculum planners, teachers, parents and educational authorities, to make this happen. A few have succeeded, but most have not.

I intend to share the stories of people who have succeeded, and also find the reasons why most are still struggling.

In this paper, I aim to find the percentage of impact of the many overt challenges to integrating Vedic Math, such as the common misconception that Vedic Math is just a set of tricks, the dearth of good resource materials, the lack of formal training for teachers of Vedic Math, the hesitancy of the decision makers to try a novel, unconventional way of teaching, and the paucity of research statistics proving the benefits of Vedic Math. I also intend to go beyond the obvious and attempt to determine if there are indeed any limitations to Vedic Math that are preventing it from reaching its rightful place in the math world.

I wish to understand the challenges and learn from the successes in order to create a plan that offers a practical solution for the global assimilation of Vedic Math in to the math classroom.

## **Introduction**

Vedic Math, rediscovered from the pages of history in 1911-1918 by Shree Bharati Krishna Tirthaji, is an ancient Indian system based on 16 sutras (aphorisms) and 13 up-sutras (corollaries), which can be applied to all the aspects of mathematics. Sutras and up-sutras are essentially single line phrases written in Sanskrit, which can be easily translated.

The beauty of Vedic Math lies in its simplicity, flexibility, universal applicability, purity of rules, multidimensional application, ease of methodology, coherence, and its unique ability to solve math problems in many different ways.

Today, the fear and anxiety of students regarding math is a growing concern for the math educators, teachers and parents. This fear and anxiety could be a result of unclear concepts, lack of understanding of the relation between basic operations, lack of concentration, or rigidity of conventional methods, all of which result in poor performance or low scores. Due to its coherent and structure Vedic Math can be a perfect solution to bring back the joy in math, and get rid of the fear and anxiety.

The coherent nature of Vedic Math distinctly explains the relationship among the different math operations, and helps develop a clear understanding of mathematical concepts. Vedic Math helps to solve complicated problems using easy and simple methods. Since there are fewer steps involved, it takes less time to do the calculations and, since the steps are simple they are easy to remember. This decreases the possibility of errors resulting in increased

accuracy, better concentration, improved scores and boosted confidence. Fewer steps also promote mental calculation. Vedic Math teaches more than one way to solve the same math problem, making the approach to solving more flexible and intuitive. This helps students develop problem-solving skills, and also enables the students to be inquisitive and inventive.

### **Objective of the study**

Many math educators across the globe have now discovered Vedic Math and recognize its key contribution to an enjoyable and enriched math learning experience. Educators are using diverse approaches to encourage students to learn Vedic Math.

- Some of the approaches are:
- Vedic Math workshops and classes
- Online resources (tutorials, worksheets, videos, apps, etc.)
- Math teachers using Vedic Math, as an alternate methodology to teach math in their classrooms
- Working with curriculum planners to integrate Vedic Math into the conventional math curriculum

Vedic Math as an add-on approach (workshops, classes etc.) has been comparatively more successful than Vedic Math as an inclusive approach (integration into the conventional math curriculum). However, an add-on approach constrains participation through lack of awareness, geographical location, economic capability, lack of interest in learning something new, resource availability etc. (For example: A student may not be able to learn Vedic Math, if there are no Vedic Math classes in his/her neighborhood, or if his/her parents cannot afford the classes, or if he/she is unaware of Vedic math)

The only way to expose all students to Vedic Math is to have an all-inclusive approach that assimilates Vedic Math into the math classroom. This will ensure that every child who goes to school learns Vedic Math as a part of his/her math curriculum. Bringing about this change will not be easy.

Some Vedic Math advocates are working hard to make this happen with curriculum planners, teachers, parents and educational authorities. Each one is faced with a unique set of challenges, although many of the challenges are common.

The objective of my paper is to identify common challenges, study their percentage impact, suggest ways to overcome the challenges and offer practical solution to help integrate Vedic Math into the conventional math curriculum.

This paper aims to benefit all the educators, researchers, and teachers who are striving to help Vedic Math find its rightful place in the math world.

### **Methodology**

The following steps were used to complete the study:

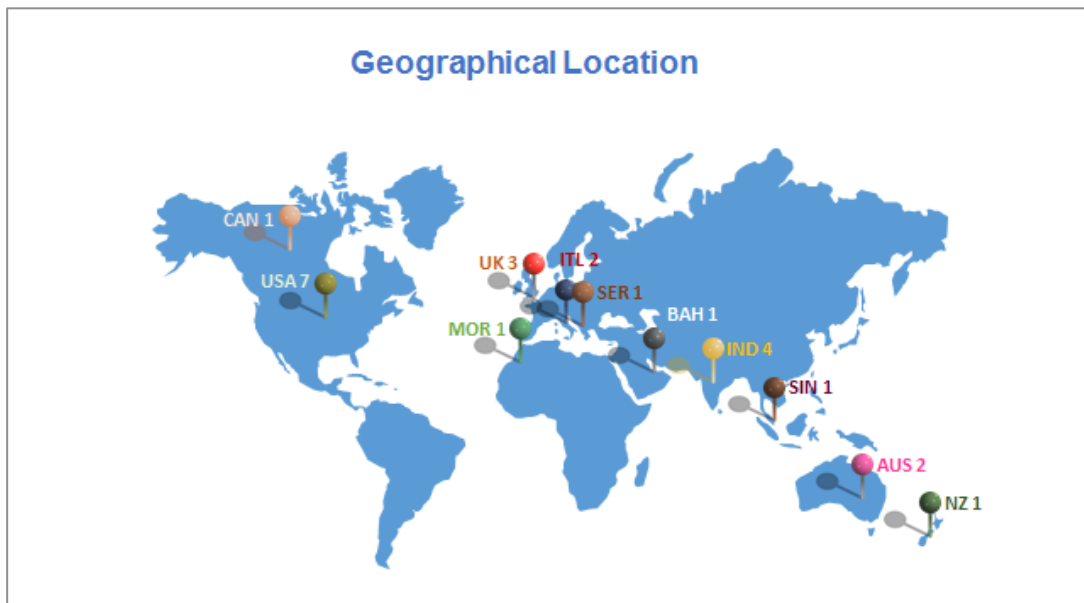
Identify and understand the overt challenges

Design and send a questionnaire (Appendix 1) to compile the experiences of Vedic Math practitioners across the globe.

One-on-one discussion with some of the Vedic Math practitioners and research scholars to understand their point of view on the challenges

Analyze and collate the data to identify the critical challenges and study their impact

The final step, drawing on personal experience and the experiences of other people, offer a practical solution to overcome the challenges.

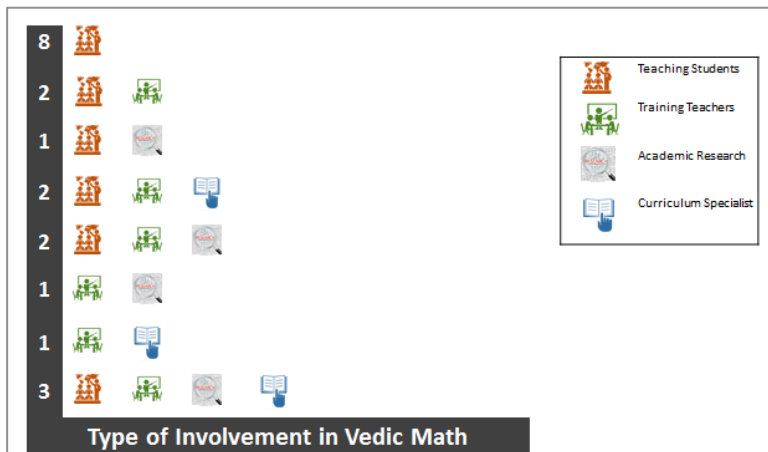


### Demographics of the participants

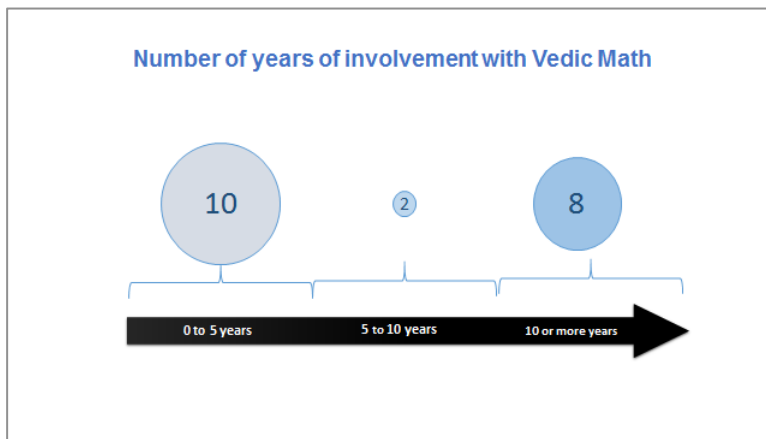
The questionnaire was sent to 125 people across the globe. Responses were received from 24 people residing in 11 different countries.

<u>COUNTRY</u>	<u># OF PARTICIPANTS</u>	<u>COUNTRY</u>	<u># OF PARTICIPANTS</u>
USA	7	Morocco	1
India	4	Serbia	1
UK	3	Singapore	1
Australia	2	New Zealand	1
Bahrain	1	Canada	1
Italy	2		

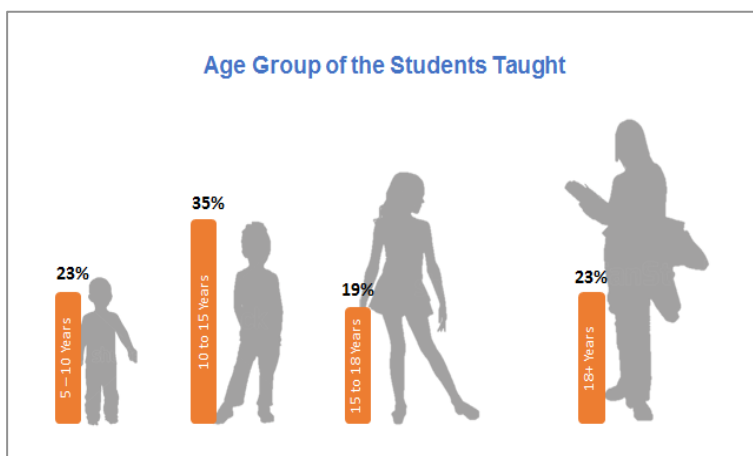
The following data illustrate the demographics of the respondents, based on type and number of years of involvement in Vedic Math and the age group taught. (Some people did not respond to some questions, hence the disparity in the total number)



**Key Finding/s:**  
*90% of the respondents are involved in teaching students, 55% in teacher training, 35% in academic research, and 30% in curriculum development*



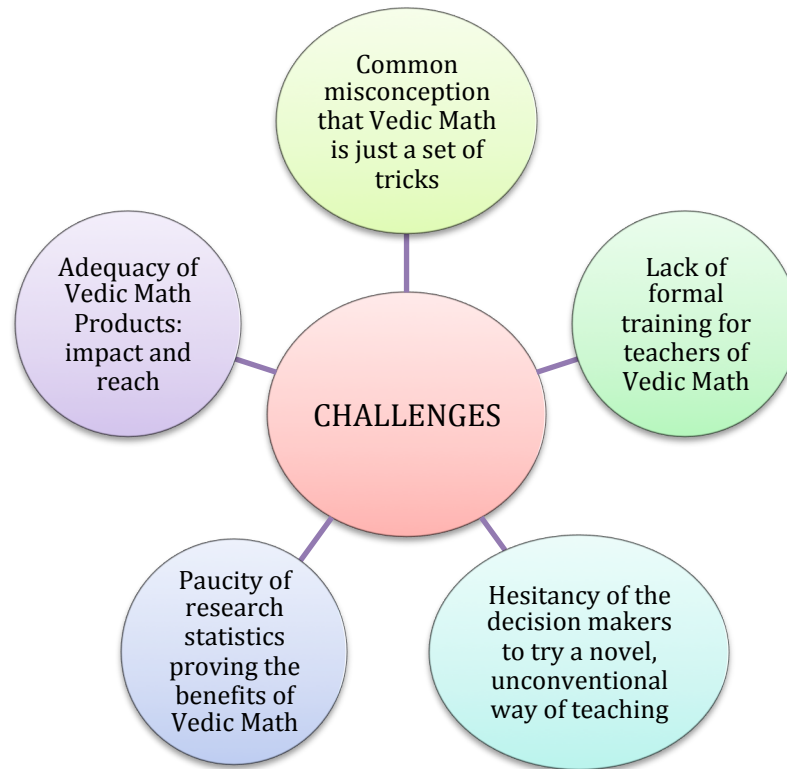
**Key Finding/s:**  
*50% of the respondents are have been involved in Vedic math for 0-5 years, 10% for 5-10 years, and 40% for more than 10 years*



**Key Finding/s:**  
*35 % of respondents taught to the age group between 10-15 years, 23% taught to 18+, 23% to 5-10 years, and 19% to 15-18 years.*

## Challenges to assimilating Vedic math into the math classroom

The first step of this study was to identify the challenges. Drawing from my experience with studying, teaching, popularizing Vedic Math, and also from listening to the experiences of other Vedic Math proponents, I narrowed down my study to analyze the following five major challenges:



### 1. Common misconception that Vedic Math is just a set of tricks

Within the Vedic Math community, there are many who promote Vedic Math as: The Magic of Vedic Maths, Magical Maths, Vedic Maths Secrets, Vedic Math Tricks, Vedic Maths, Tips Tricks and Tutorials for Speed Mental Mathematics, etc. Also, some books, blogs, articles, videos, online tutorial, teach **only** the methods to faster calculate “5674 x 9999” or “985 x 992” or “Squares of numbers ending in 5” or “Quick multiplication of numbers by 11”, etc.

Teachers, students, and parents who are trying to explore Vedic Math often encounter the above promotions or resources as their first experience. All those who are earnestly seeking an alternate methodology to help them with math learning end up disillusioned, confused and may even lose interest to investigate further.

It then becomes extremely difficult to work against this preconceived bias, and convince them that there is a deeper and more meaningful structure and significance to Vedic Math, not just a few speedy calculation methods.

### 2. Hesitancy of the decision makers to try a novel, unconventional way of teaching

To try a novel unconventional way of teaching means to replace the existing methodology with new ideas and techniques. This essentially means bringing in “Change”, and there is natural hesitancy or resistance to change. Change threatens the established system that has been in use for a long time. Most people are happy with the way things are because they seem to work well.

Math is perceived as a difficult subject to teach and learn. So, responsible decision makers like teachers, school principals, and parents are extremely cautious not to disturb the precarious balance of learning math by introducing something new. Also, teachers mostly work within the confines of readily available materials, and those who are not inquisitive enough tend to stay with what they themselves were taught. Hence, introducing any new methodology for math is inherently not easy.

Vedic Math in particular has its own set of added challenges. Most people have never heard of Vedic Math, and it does not seem relevant to current mathematics work schemes and topics. There is no proven research or tangible results to show benefits of Vedic Math, so the decision makers are not keen to try this new way of teaching math. Also, today there are many alternatives like Singapore Math, Russian Math, abacus, etc. to supplement the conventional math learning. This adds one more layer to the challenge, since Vedic Math is now not only competing with conventional math, but also with other supplemental programs.

### **3. Paucity of research statistics proving the benefits of Vedic Math**

Research statistics is the most powerful and the most under-utilized tool, which can be used to bring in the change. If we can provide meaningful evidence to show the benefits of Vedic Math the acceptance will be less of a struggle.

Some of the advantages of learning Vedic Math against conventional math are:

- Improved creativity, logical thinking, and problem solving skills
- Holistic development of brain
- Reduced math anxiety and/or phobia
- Faster, more accurate calculation
- Increased confidence
- Better understanding of recognizing patterns
- Improved scores in math and other subjects

Most of the advantages listed above are the assertions made by the Vedic Math practitioners, by their experience and observation, not supported by research. But, the fact that they are only observed does not mean that they are false. It just means that we now need take a step ahead and prove it with research.

### **4. Lack of formal training of Vedic Math teachers**

The contribution of teachers to the successful implementation of a new methodology in the classroom or community cannot be overlooked. However, teachers need to be equipped with the subject matter expertise and skills to be able to teach effectively.

For a wider acceptance of Vedic math as an alternate approach to conventional math learning, teachers need to be trained, formally or informally. Formal learning occurs through a controlled and structured approach, while informal learning occurs more by self-study and practice.

The advantage of a formal training program is that, if properly designed, the course content is accurate and well researched. Also, teacher training programs are designed to teach not only the subject matter but also essential teaching skills like pedagogy, knowledge of lesson planning, and content delivery.

Unfortunately, there are very few individuals and organizations that impart formal Vedic Math training to teachers. Hence, Vedic Math teachers rely more on self-study and practice. Self –

study is definitely a great way to gain knowledge. However, it has its own shortcomings, such as lack of proper guidance and no certainty that you are studying the right thing.

## 5. Scarcity of Vedic Math resources

For the integration of Vedic Math into the conventional math curriculum to be a success, the most important requirement is the easy accessibility of student books, teacher books, and practice books/workbooks that are well mapped to the school curriculum.

Vedic Math products available today are:

Print Products like student books, teacher books, practice books, informational books etc.

Online Products like Websites, Apps, Videos, Tutorials, presentations etc.

However, very few Vedic Math products address grade level math curricula. Teachers, parents, and students may then retro-fit the existing books to meet the requirements, which may result in a muddled approach.

Impact of the challenges to assimilate Vedic Math in the math classroom

To study the impact, I asked the respondents of the survey to rate the impact of the challenges on a scale of 1 to 5 (1 lowest impact; 5 highest impact). Each respondent has a different user experience based on their geographical location, their Vedic Math proficiency, their involvement, their personal goals, etc., and hence helped bring unique perspective to the challenges.

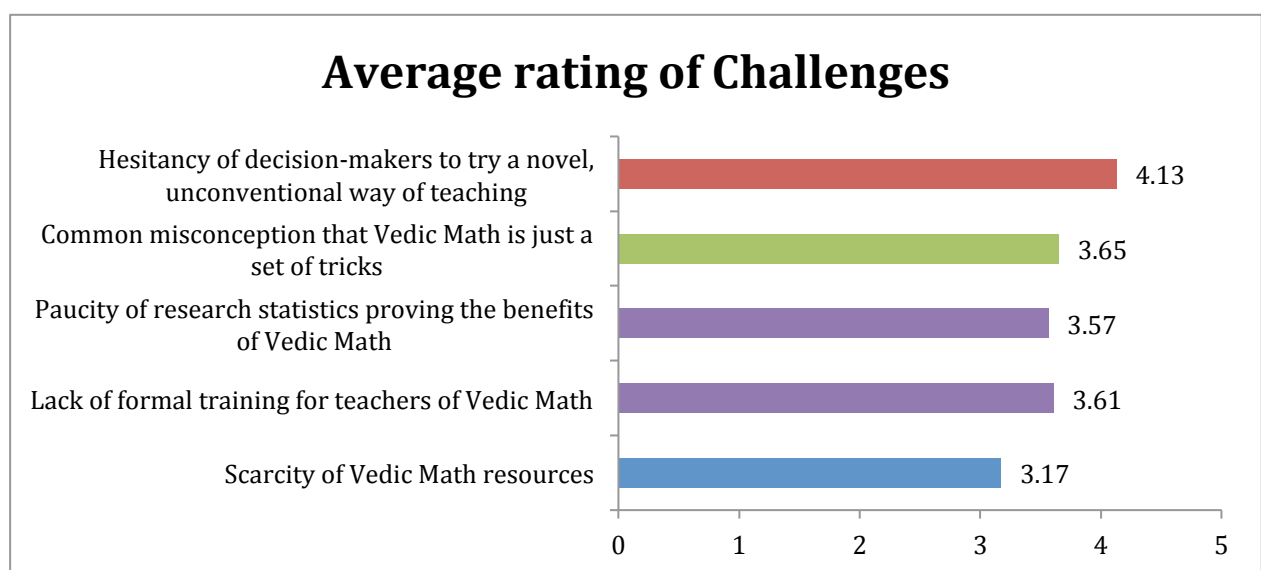
To help understand the numerical findings, I tagged the scale of 1 to 5 to “impact” as:

1 - Very Low, 2 - Low, 3 - Medium, 4 - High, 5 - Very high

### Analysis 1: The analysis shows that

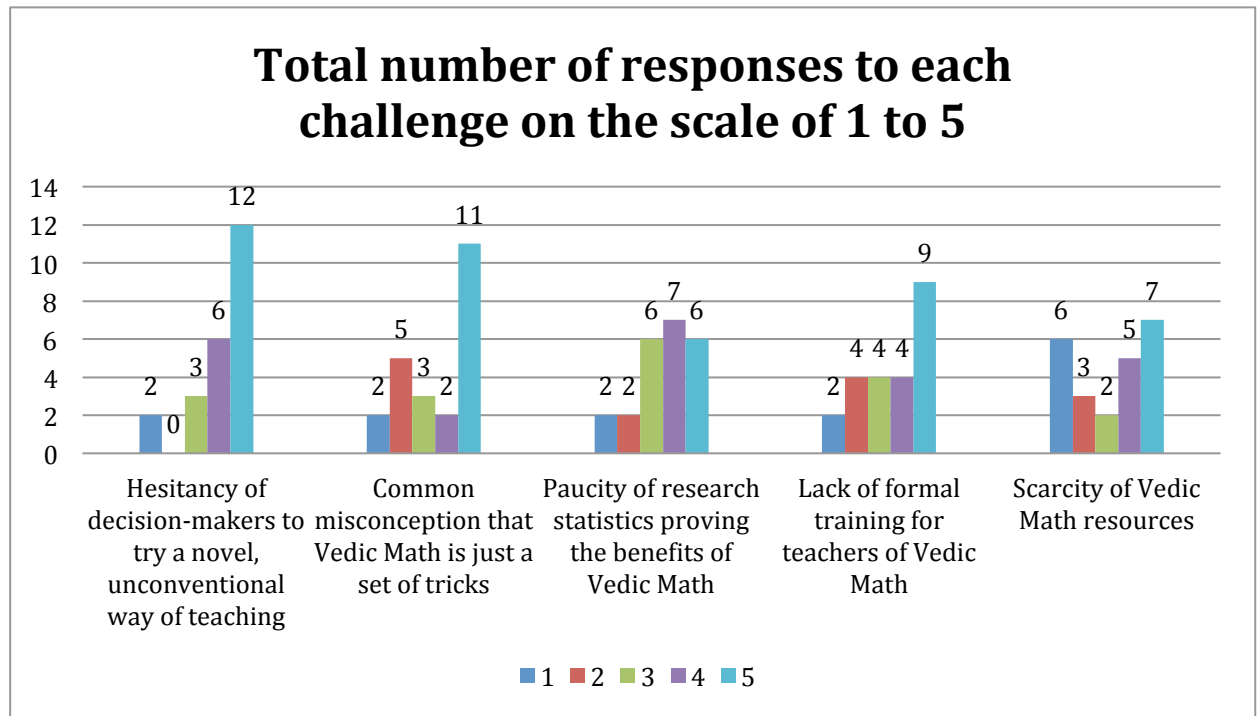
All the five challenges are rated to have an impact of 3 or more on the initiative to integrate Vedic Math into the conventional math curriculum. This shows that the challenges that I identified initially are globally experienced and have a minimum of medium impact.

Average rating of “Hesitancy of the decision makers to try a novel, unconventional way of teaching” is highest. This distinctly indicates that this is the most significant challenge and should be addressed as the primary challenge.



## Analysis 2: The analysis shows that

12 respondents (Highest number) have rated the challenge “Hesitancy of the decision makers to try a novel, unconventional way of teaching” as 5. This validates our earlier finding that, this challenge is experienced by many to have the highest impact.



## Recommended solution to overcome the challenges

The final objective of my study is “drawing on personal experience and the experiences of other people, offer a practical solution to overcome the challenges”.

Summarizing and understanding the responses from the questionnaire (Appendix 2) was the crucial step before recommending a solution. I also interviewed eminent Vedic Math practitioners (James Glover (UK), Ken Williams (UK), Vera Stevens (Australia) and Richard Blum (USA)), which helped me to get further clarity on the challenges.

Within all the diverse responses to my questions, the strong belief in Vedic Math and the frustration with the current educational system was common across the globe.



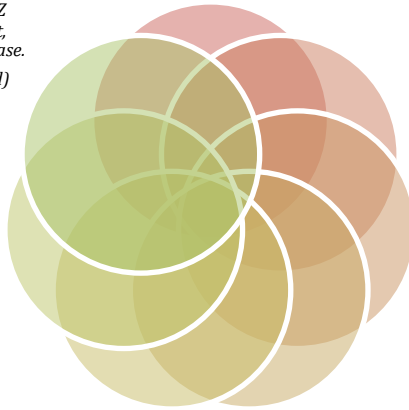
## Common Belief

*The VM sutras are very powerful and can be used by anyone at any time to enliven the deeper levels of consciousness via mathematical calculations*  
 - Kevin (USA)

*I believe strongly that Vedic Maths needs to strongly be integrated into the NZ Curriculum for student achievement, especially Māori achievement to increase.*  
 -Jodie Ngahuia Mason (New Zealand)

*Even though the responses to my efforts have, in my opinion, been less than satisfactory, I will continue to expose as many people as possible to the beauty of Vedic Mathematics*  
 - Richard Blum (USA)

*Vedic mathematics, Science & Technology University is the answer, not only for India but also for whole Mankind. Existing Education have dire need for Vedic Augmentation.*  
 -S.K. Kapoor (India)



*VM is indeed a wonderful subject. If we combine it with good pedagogy, it becomes all the more excellent*  
 -Vinay Nair (India)

*It's the best Math system out there!*  
 - Math Monkey (USA)

*I believe that Vedic Math can elevate human being*  
 - Anna Foglino (Italy)

## Common Frustration/Challenges

*Frustration with teachers and parents who are not willing to make any effort to help their children with Mathematics*  
 -Vera Stevens (Australia)

*The most critical problem here in Italy, but it seems the same in other countries, is the lack of flexibility of Government's Educational Manager, the quite rigid math's program, the static training system for teachers and least but not last the fact that parents and student think that it's a risk to study a system which differs from that wanted by teachers and also fear that they can be accused to copy or some else if they do not use a process with all that long steps that VM can summarize mentally and write down in one line....we have to make a big effort to let people take confidence in VM to overcome that bad feelings*  
 - Giuliano(Italy)

*Not been able to generate enough interest in the school system, higher grades, regarding VM*  
 - Richard Blum (USA)



*Finding it a bit difficult to create interest in higher grades -*  
 -Shylashree C N (India)

*Getting interest from education professionals - those in charge, not teachers*  
 - Ken Williams (UK)

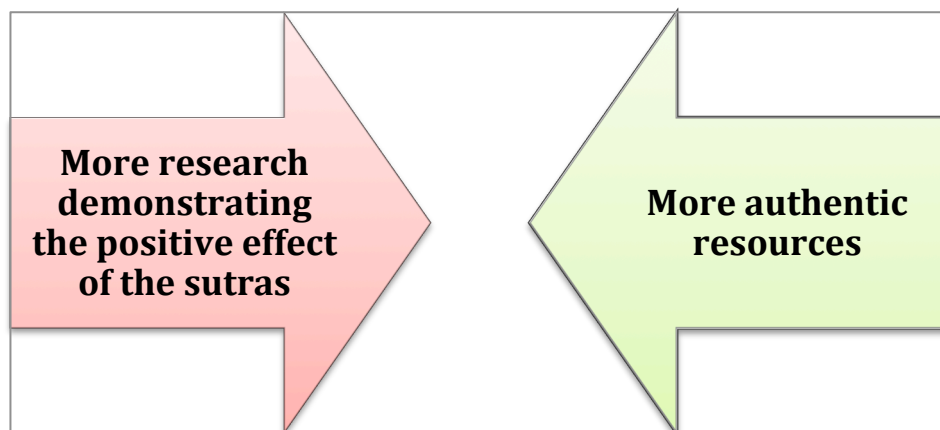
*Teacher colleagues continued commitment after verbal commitment to the 'Vedic Cause'*  
 - Jodie Ngahuia Mason (New Zealand)

73% of the respondents agreed that *"The only way for each and every child to be able to learn Vedic Math is to integrate it into school math curriculum"*.

Respondents also expressed the need of the following additional resources to help them to teach, learn, spread awareness, and overcome the overt challenges:

- Grade-wise syllabi to follow in schools.
- Books in native languages
- A common platform for discussion
- Graded exercises in books or through online services
- Worksheets for practice.
- Structured courses for children to learn and teachers to teach from
- Interviews with authors of Vedic Math books
- More research demonstrating the positive effect of the sutras.
- More online classes and publications to help with self -study
- Courses to learn basic Sanskrit
- Publication of a full series of textbooks for schools via television, debates, YouTube, etc.
- Suggestion on the kind of activities we can conduct in classes, while teaching Vedic Math
- Some expert lesson plans

If we examine the needs, we realize that the two key elements that will help the Vedic Math cause are:



#### 1. **More research demonstrating the positive effect of the sutras:**

In my search for the studies done to prove the benefits of Vedic Math, I came across only one study: **Efficacy of Vedic mathematics and yogic breathing in school children - a pilot study** by Vasant V. Shastri, Alex Hankey, Sanjib Patra”.

##### **Conclusion of the study:**

The Vedic Math and Yogic Breathing modules were found useful in decreasing math-anxiety and self-defeating thoughts, and improving cognitive flexibility and self-enhancing thoughts in school children. Increasing sample size and intervention time may help generate stronger conclusions, and thus provide the grounds for implementing both techniques in school curricula.

**Limitation of the study:** As a pilot study, the sample size was too small to draw any strong conclusions. The intervention of one week is not enough to make results conclusive.

So, we still need a conclusive study to prove the above. Another study that will be extremely useful to parents, teachers, students, and the decision makers is the “Direct connection between Vedic Math learning and improved math test scores (school and national).” If we can prove this, then it will be less challenging to convince the decision makers to try new, unconventional way of teaching math.

I plan to undertake this research study soon, and request support from all Vedic Math practitioners, researchers, and scholars.

## **2. More authentic resources:**

Currently there are many resources in terms of books, online tutorials, online classes, videos, informational websites, and apps to learn and teach Vedic Math. However, the missing pieces that will ease the effort to integrate Vedic Math into the conventional math curriculum are

1. Grade wise Vedic Math resources that are well mapped to the conventional math curriculum, and
2. Robust Teacher training courses to address the needs of teachers at different levels; Primary, Secondary, High School;

Design and development of these resources should be entrusted to Vedic Math practitioners who are willing, and have experience and skills. I am more than willing to plan, lead, coordinate, and manage this effort. After the conference, I will contact the existing teacher trainers, curriculum developers, researchers, academicians, and Vedic Math teachers with a plan to come together as a group to work on this initiative. We should recognize that this cannot be achieved by a single person.

The resources developed and designed by the group will benefit all Vedic Math proponents who are looking for authentic resources to reveal the power and beauty of Vedic Math to the world.

## **Success Stories**

One of the objectives of my paper was “to share the stories of people who have succeeded and learn from them”. After listening to the Vedic Math discussions, reading the questionnaires, and hearing the experiences of long-time Vedic Math practitioners, I find it extremely difficult to define “success stories” in this context. Each one of us is working towards the ultimate objective, which is to see Vedic Math achieve its rightful place in the math world. So, any contribution to teaching, learning, and researching in the field of Vedic Math, by anyone, anywhere across the globe, is a step forward toward this objective. Also, “Success” is achievement of one’s goals, and I believe that goals are extremely personal. Success for me may not mean the same thing to someone else, or vice versa. So, all the Vedic Math proponents are “Success Stories”. They are the believers who are taking the path less traveled, and making a positive difference to math learning and teaching in this math phobic world.

Their successes can be listed as:

1. Using Vedic Math as a successful tool to teach math to students with learning disabilities
2. Writing student books, student practice books, and teacher manuals

3. Conducting Vedic Math workshops and classes in the community
4. As a practicing math teacher, teaching students Vedic Math techniques in a conventional math classroom
5. Spreading awareness of Vedic Math through talks and discussions
6. Researching Vedic Math to study its applications to all aspects of math
7. Establishing institutes to teach Vedic Math to learners of all levels
8. Working with the decision makers to make them aware of the “coherent” aspect of Vedic Math
9. Creating teaching aids like videos, presentations, and worksheets to help teachers/trainers
10. Organizing conferences to facilitate intelligent discussions on Vedic Math
11. Creating an analytical platform to generate data, which can help prove the benefits of Vedic Math

There is lot to learn from each and every Vedic Math proponent, and hence the requisite is for all of us to stay connected, so that we can share our stories of successes and learn from the challenges.

## **Conclusion**

The year 2015 marks the 50<sup>th</sup> anniversary of Shri Bharati Krishna Tirthaji’s book of Vedic Math. From the obscurity it is now practiced by millions across the globe. The journey has been interesting, with an equal share of controversies and accolades.

The collective need for the Vedic Math community is to do everything we can at the grassroots level, and come together to find ways to pursue the vision of the world where every child has the opportunity to study this simple, fast, and easy form of math.

We all have a big vision, and we need to take small strides to get there. Every small stride taken by anyone across the globe, takes us nearer to our dream. The path is daunting but totally possible.

## Appendix 1 -

1. Are you working as an Individual or an Organization?

 Individual

 Organization

2. In which country are you or your organization located?

3. What is your involvement in Vedic Math?

 Teach Students

 Teacher Training

 Curriculum Specialist

 Academic Research

 Other (Please sepecify below)

4. What is the age group you teach?

 5-10

 10-15

 15-18

 >18

5. How do you advertise in your community?

6. How long have you been involved with Vedic Math?

 0-5

 5-10

 >10

7. How did you learn Vedic Math?

 Self-Study

 Professional coaching

8. If yes to "Professional coaching", please name the institute that you studied from.

9. Rate the impact of following challenges on a scale of 1 to 5. (1 lowest 5 highest)

*Use the pull down menu in column G, to enter the ratings*

Common misconception that Vedic Math is just a set of tricks	5
Scarcity of VM resources	5
Paucity of research statistics proving the benefits of Vedic Math	5
Lack of formal training for teachers of Vedic Math	5
Hesitancy of the decision makers to try a novel, unconventional way of teaching	5

10. What are the printed or electronic resources that you use?

 Self-created

 Books

 Website

## Appendix 1 -

11. What are the books and the website you use?

12. Do you agree that "The only way for each and every child to be able to learn Vedic math, is to integrate it into school math curriculum"?

Yes

No

Additional comments

13. What are the other ways to make Vedic Math more popular?

14. What type of resources would you like to see made available?

15. What further developments would you like to see, to help spread the awareness of Vedic Math ?

16. Are you currently involved in any developmental work on VM or related to VM?

17. What are the personal challenges that you face/have faced with teaching Vedic Math?

18. Please add any additional comment/s here.

19. What is your name?

## Appendix 2 – Synopsis of

What are the ways to make Vedic Math more popular?

Create awareness at grass-root level

Workshops, lectures, conferences, courses for parents, teachers, and students

Vedic Math clubs

Use technology like, social media, YouTube videos, DVDs, VM apps, TV shows, online conference

Inspire your students to speak at conferences, math expo, etc.

Publish VM fun games in newspapers and newsmagazines

Interaction with education department

What are the personal challenges that you face/have faced with teaching Vedic Math?

Frustration with teachers and parents who are not willing to make any effort to help their children with Mathematics.

Not been able to generate enough interest in the school system, higher grades, regarding VM.

Lack of knowledge of Sanskrit, to understand Sutras

To ensure that the students keep in touch with the subject even in our absence.

At the university level, formal proofs of Vedic methods are very important.

Getting children to move away from conventions they've been trained in.

It is really great to teach special children which is a great challenge for me and which i enjoy and love very much.

Hard to convince kids about VM and its power rather than the parents.

Money to invest to create school.

Getting interest from education professionals - those in charge, not teachers

Not being taken seriously - parents think that I have something to gain by offering free classes.

People think it may be confusing for their child to learn a different way.

## Appendix 2 – Synopsis of

What type of resources would you like to see made available?

Books, videos, e-library, e-books, technology in terms of web-site, etc.

Books in native languages

A common platform for discussion

Graded exercises in books or through online services

Work sheets for practice.

Platform like Math2shine.

Structured courses for children to learn and teachers to teach from

Interviews with the authors of VM books

What further developments would you like to see, to help spread the awareness of Vedic Math ?

More research demonstrating the positive effect of the sutras.

More online classes and publications to help with self -study

Courses to learn basic Sanskrit

Implementation in curriculum at all levels

I would like to see the HR Dept of India take the introduction of VM in schools there much more seriously and in a well-organized and professional manner

It should be an integral part of school education in India at least.

I would like that in Italy Vedic Math achieve 5.000.000 of people!!

Tie ups with Universities, School Boards etc. will help

Publication of a full series of text books for schools via Television, debates, Youtube,

Suggestion ons on the kind of activities we can conduct in classes, while teaching VM

Some expert's lesson plans



## Appendix 2 – Synopsis of

Are you currently involved in any developmental work on VM or related to VM?	Yes. I have been developing new approaches to foundations of math, calculus, and divergent series based on principles of Vedic Math.
	Yes. Organizing VM conference, Academic research on VM, workshops/sessions on VM at local libraries, similar other activities planned.
	Yes. I am preparing a follow up book to my first publication ' Math is Not a Four Letter Word - An Introduction to the Study of Vedic Mathematics.'
	Yes. Writing books and creating YouTube videos
	Yes. Calculus at present
	Yes. I am about published my book: "Putting Sutras into Practice"

Additional feedback/ comments	The VM sutras are very powerful and can be used by anyone at any time to enliven the deeper levels of consciousness via mathematical calculations.
	In this country there are no teachers. (Australia)
	Even though the responses to my efforts have, in my opinion, been less than satisfactory, I will continue to expose as many people as possible to the beauty of Vedic Mathematics.
	VM is indeed a wonderful subject. If we combine it with good pedagogy, it becomes all the more excellent. To develop teachers who would like to teach VM for the love of the subject is very important. These days there are many who do it just to earn some extra bucks.
	In America, at least, many individuals offer "mental math" or "speed math" innovations which are, in fact, re-packaging of Vedic Math.
	Students will come out and first try mathematics on their own. We should take it to the students of local schools who could not afford to learn this. When Vedic maths reaches these students this would be a great success for everyone who loves and spreads vm. I believe that Vedic Math can elevate human being
	For VM to be accepted I think teaching staff/Parents also need to be trained first to understand what the kids are doing.
	In my experience people come if they see a benefit, typically for their children. Very seldom one comes across someone who is open-minded enough and therefore excited to learn something new just for the sake of learning.

Appendix 2 – Synopsis of

<p>Additional comments on: Do you agree that "The only way for each and every child to be able to learn Vedic math, is to integrate it into school math curriculum"?</p>	Yes. Need gradewise syllabus to follow in schools.
	Yes. However good the subject might be, if the teachers are not trained with good pedagogy for taking the subject to the students, there won't be much benefit.
	Yes. In India, many school teachers are requesting the school board to introduce VM as an alternate method in school books. But, it is not accepted
	No. I believe in homeschooling and motivating teacher to maintain the value of vedic math. And alternative schools.
	Yes. Will need administrators in some school boards attendance in such global conference to bring positive changes even if the school doesn't provide VM ; private lessons from VM teachers will really improve the maths score and will develop creativity
	No. Depends on the student and the circumstances
No. Children should be allowed to learn Vedic Maths in the Vedic way i.e. by going to Gurukul	

<p>How do you advertise in your community?</p>	Emails, articles in journals, flyers, newsletters, social media, phone, and newspapers
	Online presence and websites
	Word of mouth
	Through family meets
	Being a teacher in a school, I am known in my locality, parents who have sent their children to me, suggest me to their friends
	Approach school
	By giving 1-2 hour seminars in public libraries, schools etc.
	Casual social discussions
	Flyer at Temple
	Yard signs

## Appendix 2 – Synopsis of

### Books and websites used

Vedic Mathematics by Swami Bharati, Krishna Tirthaji
Dr. S.K. Kapoor's books
Maharishi Mahesh Yogi's books
James Glover's books
The Natural Calculator by Kenneth R. Williams
Triples by Kenneth R. Williams
The Crowning Gem by Kenneth R. Williams
Teacher Training Manuals, by Kenneth R. Williams
Cosmic calculator by Kenneth R. Williams and mark Gaskell
Vertically and crosswise by Kenneth R. Williams
The Circle Revelation by Andrew Philip Nicholas
Pebble Maths and Stairway to Heaven by Vera Stevens
Vedic Mathematics for schools by James Glover
Vedic Math books by Padiyar, Unkalkar, Vijay Prakash, Niveditha
MLBD's Vedic Mathematics
Research material (5 volumes) by C. Santhamma, Retired Professor, Andhra University,
Book Manuale di Matematica Vedicata translated from Ken
<a href="http://www.vedicmaths.org">www.vedicmaths.org</a>