

Effectiveness of Vedic Mathematics for 6th to 8th Standard Students.

Kavita S. Chauhan¹, Dr. Mohd. Farman Ali²

¹Department of Mathematics, Madhav University

Department of Basic and Applied Science, Madhav University

¹kavitaadhavan@gmail.com

²drmohdfarmanali@gmail.com

Abstract

In the classrooms we are noticed that many of the students are afraid from the Mathematics and everytime they invent such a way from solving examples of multiplication at any chapters which they require. Many times students are not able to perform good at exam level and not to get full marks in it. According to this mater and poor performance of the students to solve the such problems related with Mathematics solutions. The researcher takes such types of actionsand research to study on using Vedic Mathematics techniques of multiplication for students in the classrooms. The present study focused on the chapters of books of Mathematics of 6th standard to 8th standard. Solve the examples with various methods of multiplication. This research is also focuses the performances of the students and time taken for solving the problems with related graphs.

Keywords— Vedic Mathematics, multiplication, algorithm, sutras, problems, calculation, speed, accuracy, interest, performance, difference, time, tables.

I. INTRODUCTION

A meaning of great word “Vedic” which is coming from Sanskrit word “Vedas” is that the magical head of all knowledge. Vedic Mathematics begins especially in Europe at 20th century. The calculation way is open when there was a great interest in ancient Sanskrit. Vedic Mathematics is the study of relation in Mathematics in keeping with the traditional Vedic of enthusiastic thinking.

Vedic Mathematics is the special subject is spread broadly in the India and all the countries of the beautiful world especially at schools in which levels are taken by Governments with regarded states and also in educational circles. The Vedic Mathematics is an amazing computational fact and powerful series of calculation it is also refer as “VM”. When we are heard the word “Vedic” our protected mind tells us about a rishi holding bunch of palm leaf and writing each script. Vedic Mathematics is the wonderful calculation system in the world by the oldest sages of India. Vedic Maths encourages all of people related with education and the younger world to practice mental calculations practiced at the choice of level of the right way can be helping the students to solve much types of problems. Vedic Mathematics helps to calculate 10 to 15 times faster than modern Indian Mathematics with zero usage of calculators. There are endless possibilities in applications of Vedic Mathematics.

II. LIMITATIONS OF THE STUDY

The present study has been hold only to the upper primary school where the experiment as pre and post test to be taken.

The present study focuses only on the Vedic Mathematics techniques by sixteen sutras for regarding text books of 6th to 8th standard of Mathematics of Gujarat Government.

III. RESEARCH PLAN AND METHODOLOGY OF THE STUDY

The main matter of the present study is to improve the speed mental power of the students of 6th, 7th and 8th standard of Vasan primary school. This present study is also shown an interest of pupils and their understanding and skills. By taking such types test before teaching Vedic Mathematics and post test after teaching Vedic maths. This present study require the sixteen sutras of Vedic maths and combination of these sutras and the text books of Gujarat Government of 6th, 7th, and 8th class of mathematics. Here we take sampling and hypothesis.

There are 30 students are participated in this type of study from class 6th to 8th of Vasan Primary School of post-Vasan, District-Banaskantha, Gujarat. The researcher planned an activity for students to take many shortcuts ideas of solving rather types of problems of multiplication for two weeks and take the exam as pre and post tests on the students under observation.

There are two types of variables: Dependent and independent

In dependent variables there are performance and time. In independent variables Vedic Mathematics techniques for various types of multiplication regarding to 6th to 8th standard books of mathematics. The sixteen formulae for Vedas are dealing with different types of branches of mathematics. These all formulae are being perfect themselves and applied crosswise with the types of the most problems.

This type of study is based on primary students. Which are based on primary and secondary sources of data. The Primary data are collected from me and my colleagues teachers of government and private schools of Palanpur, Dist- Banaskantha, Gujarat state of India. The secondary data are collected from related research papers, web links, Google search, research gate. The main matter of the present study is to improve the speed mental power of the students of sixth, seventh, eighth standard of Vasan Primary School. This present study is also shown an interest of pupils and their understanding and skills. By taking such types of tests like pre test before teaching Vedic Mathematics and post test after teaching Vedic Mathematics. This present study shown the sixteen sutras of Vedic Mathematics and combination of these sutras and the text books of Gujarat Government of sixth, seventh and eighth class of Mathematics. Here we take sampling and hypothesis.

Null Hypothesis (H0):

H0: The score of mean value before and after taking tests by teaching Vedic Mathematics formulae are same. In necessary words, there are no significant differences between before and after adopting Vedic maths formulae while solving each mathematical problems.

Alternative Hypothesis (H1):

H1: There is a significant difference in descriptive statistics of performance in Multiplication, descriptive statistics of time taken, pre and post test performance of the students by adopting the Vedic Mathematics techniques while solving mathematical problems of 6 to 8 standard books of the mathematics.

Now take T-test:

$$\begin{aligned}t_{0.05} &= \bar{x} + \frac{s}{\sqrt{n}} \times 2.145 \\ &= 5.5 + \frac{0.57}{5.47} \times 2.145\end{aligned}$$

$$\begin{aligned}
 &= 5.5 + 0.104 \times 2.145 \\
 &= 5.5 + 0.22 \\
 &= 5.72 \\
 t_{0.01} &= \bar{x} + \frac{s}{\sqrt{n}} \times 2.977 \\
 &= 3.5 + \frac{1.09}{5.47} \times 2.977 \\
 &= 3.5 + 0.19 \times 2.977 \\
 &= 3.5 + 0.56 \\
 &= 4.06
 \end{aligned}$$

Now by showing two values of t at 0.01 level and at 0.05 level the Null Hypothesis is rejected and Alternative Hypothesis is accepted. The conclusion of showing both the alternative hypothesis, we can say that Vedic Mathematics Techniques improve the speed of calculations while solving some basic mathematical problems.

Table 1.1 Descriptive statistics of performance in multiplication.

Test	Sample size	Mean	Median	Mode	Sd
Pre	30	07	5.5	10	8.85
Post	30	12.16	11	12	6.02

Table 1.2 Descriptive statistics of time taken for total score of the sample.

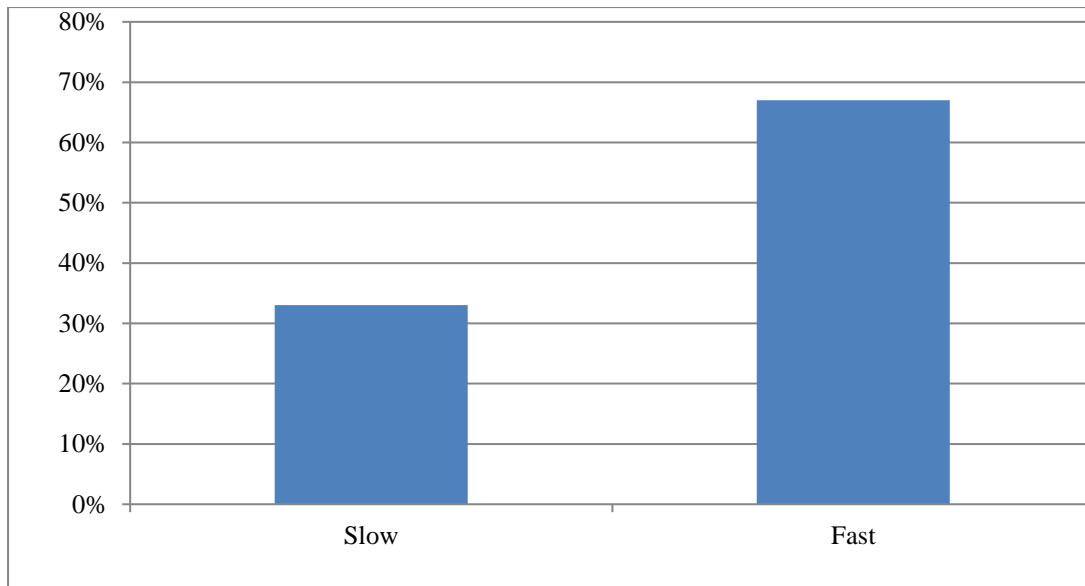
Test	Sample size	Mean	Median	Mode	Sd
Pre	30	6.66	07	05	1.27
Post	30	4.36	3.5	04	4.74

Table 1.3 pre and post test differences in the performance of the student.

Test	N	Mean	S.D	t-ratio	I.O.S
Pre	30	07	8.85	4.06	0.01
Post	30	12.16	6.02		

Table 1.4 pre and post test differences in the time taken of the student.

Test	N	Mean	S.D	t-ratio	I.O.S
Pre	30	6.66	1.27	5.72	0.05
Post	30	4.36	4.74		



Graph showing the percentage of Slow and Fast Improvement in Calculation due to pre and post test by teaching Vedic Mathematics Techniques.

IV. CONCLUSION

The conclusion is an expected outcome from the study of Vedic Mathematics. The Vedic Mathematics which is an ancient study which improve the mind of students. The calculation formulae which is becoming from sixteen sutras written by Jagadguru Swami Bharti Krishna Tirthji. On account of sixteen sutras and becoming an expert in subject of Vedic Mathematics and its techniques a student much requires regular practice and much interest in this topic. The related paper show you that the Vedic Mathematics has solved many problems related the syllabus of 6 to 8 standard books of Mathematics. With many formulae of sixteen sutras students are become free from solving examples by regarding easier methods and after taking pre and post tests the conclusion of the students are much better than previous. After teaching Vedic Formulae the performance is good and the periods of taking time is less than the before.

REFERENCES

- [1] Jagadguru Swami Sri Bharathi Krishna Tirthaji Maharaj, Vedic Mathematics: Sixteen Simple Mathematical Formulae from the Veda. Delhi (1965)
- [2] Vedicmaths.org (2004), <http://www.vedicmaths.org>
- [3] Dhaval, B.(2015) *Vedic Mathematics made Easy*, New Delhi: Jaico Publishing House.
- [4] Gayathri S: "A study of multimedia usage by Mathematics Teachers" Journal of Indian Education, 32 (3) 2006
- [5] Kumar, A: Vedic Mathematics Sutras, Upkar, Parkashan, Agra (2002)
- [6] Bhatiya Dhaval (2011) Saral Vedic Ganit, Jayco Publication House, Mumbai.
- [7] Bharati Krishna Tirth, Vedic Mathematics, Motilal Banarassidass, New Delhi, 1965
- [8] Dhara R. Joshi, June 2017, Vedic Mathematics in Modern Era, International Journal of research in all subjects in multi languages Vol. No.5, ISSN: 2321-2853.

[9] Syed Zman Bin Syed Ismail, Pumadevi a/p Sivasubramaniam, 2010, Multiplication with the Vedic Method. International conference on Mathematics Education Research (ICMER 2010) Page No. 129-133.

[10] Krishna Prasad Karani, January 2016, An Empirical Study on Role of Vedic Mathematics in improving the speed of Basic Mathematical Operations. International Journal of management, IT and Engineering Volume 6 Issue 1 (ISSN: 2249-0558)

[11] Dhara R. Joshi, August 2017, Effectiveness of Vedic Mathematics With Multiplication of Nikhilam Sutra o Mathematics Subject In Standard 8, International Journal of research in all subjects in multi languages, Volume 5, Issue 8 (ISSN : 2321-2853)

[12] Archana V. Katgeri “Effectiveness of Vedic Mathematics in the Classrooms” Volume 4/36, ISSN 2278-8808, Sept-Oct 2017, Scholarly Research Journal for interdisciplinary Studies.

[13] V.K. Gupta. “Vedic Mathematics and the Mathematics of Vedic Period – An Analysis and Application, Volume-26, July-December 2015, ISSN 2230-8962.