

**EFFECTIVENESS OF VEDIC MATHEMATICAL
TECHNIQUES ON ACHIEVEMENT OF STUDENTS IN
MATHEMATICS AT UPPER PRIMARY LEVEL**

विद्यया ऽ मृतमश्नुते



एन सी ई आर टी
NCERT

DISSERTATION

Barkatullah University, Bhopal

**For the partial fulfilment of the requirement
for the Degree of Integrated B.Ed.-M.Ed. (RIE)
2018-2021**

Supervisor :

Saurav Kumar Mishra
Prof., Dept. of Education
Bhopal

Research Scholar :

Rachitanshu bala Pad
Int. B.Ed.-M.Ed.

**Regional Institute of Education, Bhopal (M.P.)
National Council of Educational Research and Training
(NCERT) Shyamla Hills, Bhopal (M.P.)**

Effectiveness of Vedic Mathematical Techniques on Achievement of Students in Mathematics at Upper Primary Level

By:

Rachitanshu Bala Padhi

B.Ed- M.Ed/RIE Bhopal/2021

Supervisor

Dr Saurav Kumar Mishra

विद्यया ऽ मृतमश्नुते



एन सी ई आर टी
NCERT



*Dissertation submitted in fulfillment of the requirements for the
Degree of Master in Education*

at

10 DEC 2021

Regional Institute of Education

Shyamla Hills, Bhopal , MP

Pin- 462001

D- 547

(JUNE 2021)

INDEX

| Chapter. No. | Details | Page No. |
|-------------------------|---|---------------------|
| | Declaration | I |
| | Certificate Of Supervisor | II |
| | Acknowledgement | III |
| I | 1.1 Introduction | 2 |
| | 1.1.1 Meaning and Definitions | 2 |
| | 1.1.2 Characteristics of Mathematics | 3 |
| | 1.1.3 Aims of teaching mathematics | 4 |
| | 1.1.4 The Place of Mathematics in Everyday Life | 5 |
| | 1.1.5 Issues of mathematics learning in the present day | 6 |
| | 1.1.6 Vedic Mathematics | 10 |
| | 1.1.7 Origin of Vedic Mathematics | 10 |
| | 1.1.8 Sixteen Sutras And Their Corollaries | 11 |
| | 1.1.9 Advantages of Vedic Mathematics | 13 |
| | 1.2 Rationale Of The Study | 14 |
| | 1.3 Statement Of The Problem | 15 |
| | 1.4 Operational Definition Of The Key Terms Used | 15 |
| | 1.5 Variables Under The Study | 16 |
| | 1.6 Objectives Of The Study | 16 |
| | 1.7 Hypotheses | 17 |
| | 1.8 Delimitations | 17 |
| II | 2.1 Introduction | 19 |
| | 2.2 Purpose Of The Review | 19 |
| | 2.3 Sources Of Information | 20 |

| | | |
|-----|--|----|
| | 2.4 Reviews In Abroad | 20 |
| | 2.5 Reviews In India | 21 |
| | 2.6 Conclusion | 23 |
| III | 3.1 Introduction | 25 |
| | 3.2 Outline Of The Study | 25 |
| | 3.3 Origin Of The Problem | 26 |
| | 3.4 Population | 26 |
| | 3.5 Sampling | 26 |
| | 3.6 Research Design | 27 |
| | 3.6.1 Selection Of Experimental Design | 27 |
| | 3.6.2 Content Selection | 28 |
| | 3.7 Research tool | 28 |
| | 3.7.1 Pre-Achievement Test | 28 |
| | 3.7.2 Mathematics Achievement Test-Post Test | 28 |
| | 3.7.3 Discussing with subject expert | 29 |
| | 3.7.4 Deciding the objectives of the test | 29 |
| | 3.7.5 Reviewing the materials | 29 |
| | 3.7.6 Writing the test | 29 |
| | 3.7.7 Experts opinions on the test | 30 |
| | 3.7.8 Final Form of the test | 30 |
| | 3.8 Treatment | 30 |
| | 3.9 Implementation of the programme | 32 |
| | 3.10 Procedure of Data collection | 32 |
| | 3.11 Data collected | 32 |
| IV | 4.1 Introduction | 34 |
| | 4.2 Methods of data analysis | 34 |
| | 4.3 Experiments conducted | 35 |

| | | |
|---|---|----|
| | 4.4 Analysis of data | 35 |
| | 4.4.1 Calculation of descriptive statistical measures | 35 |
| | 4.4.2 Analysis of post-test scores | 35 |
| | 4.5 Testing of hypotheses | 35 |
| V | 5.1 Introduction | 43 |
| | 5.2 Research summery | 43 |
| | 5.2.1 Objectives of the study | 43 |
| | 5.2.3 Hypotheses | 44 |
| | 5.2.4 Sampling | 44 |
| | 5.2.5 Research Design | 44 |
| | 5.2.6 Tools | 45 |
| | 5.2.7 Procedure Of Data Collection | 45 |
| | 5.2.8 Data Analysis | 45 |
| | 5.3 Findings | 45 |
| | 5.4 Educational Implication | 46 |
| | 5.5 Recommendation For Future Researches | 47 |
| | 5.6 Conclusion | 48 |
| | BIBLIOGRAPHY | 49 |
| | APPENDIX-A | 50 |
| | APPENDIX-B | 51 |
| | APPENDIX-C | 52 |
| | APPENDIX-D | 53 |
| | APPENDIX-E | 54 |

DECLARATION

I declare that dissertation entitled “**EFFECTIVENESS OF VEDIC MATHEMATICAL TECHNIQUES ON ACHIEVEMENT OF STUDENTS IN MATHEMATICS AT UPPER PRIMARY LEVEL**” is my own work ; the collaborative contributions have been indicated clearly and acknowledged. Due references have been provided on all supporting literatures and resources.

I further declare that to the best of my knowledge the thesis does not contain any part of any work which has been submitted for award of any degree either in this University or any other university/ deemed university without proper citation.

Zachitanshu bala Poelhi

NAME

DATE: 25th June 2021

CERTIFICATE

This is to certify that work entitled “**EFFECTIVENESS OF VEDIC MATHEMATICAL TECHNIQUES ON ACHIEVEMENT OF STUDENTS IN MATHEMATICS AT UPPER PRIMARY LEVEL** “ is a piece of research work done by Mrs. **Rachitanshu bala padhi** under my supervision for the degree of Master in Education Of Regional Institute of Education , Bhopal, India. The candidate had put full attendance with me.

To the best of my knowledge and belief, the Dissertation

- I. Embodies the work of candidate herself
- II. Has duly been completed
- III. Fulfils the requirement of ordinance related to M.ed degree of the Institute and
- IV. Is up to the standard both in respect of content and language for being referred to the examiner.



Signature of Supervisor

(with Stamp)

Acknowledgement

Co-operation is a very important dimension of any successful work. Successful research is the result of co-operation of many people. The present study is also completed because of support of many people in which many known and renowned persons support was there. Investigator seeks an opportunity to thank all.

*I would like to thank to my respected guide **Dr SAURAV KUMAR MISHRA** for providing a thorough guidance and motivation from the very beginning till the submission of dissertation. I would like to express my sincere respect and thanks to the former principal **Prof. NITYANANDA PRADHAN** and principal in charge **Dr V.K.KAKARIA**, who have provided the guidelines in completing this work.*

I am also thankful to the teachers and the students who were included in the sample for their co-operation and support. I am also thankful to the principal Mrs Sneha Prava Kar of the school for allowing me for my experimental work.

I am also thankful to the typist for helping me to complete the task in the defined time. I am also grateful to all the members who have directly or indirectly helped me in completing this study.

Date: 25/06/21

Place : Odisha

Yours truly

Rachitanshu Bala Padhi

Chapter 1

Contents

1.1 INTRODUCTION

1.1.1 Meaning and Definitions

1.1.2 Characteristics of Mathematics

1.1.3 Aims of teaching mathematics

1.1.4 The Place of Mathematics in Everyday Life

1.1.5 Issues of mathematics learning in the present day

1.1.6 Vedic Mathematics

1.1.7 Origin of Vedic Mathematics

1.1.8 SIXTEEN SUTRAS AND THEIR COROLLARIES

1.1.9 Advantages of Vedic Mathematics

1.2 RATIONALE OF THE STUDY

1.3 STATEMENT OF THE PROBLEM

1.4 OPERATIONAL DEFINITION OF THE KEY TERMS USED

1.5 VARIABLES UNDER THE STUDY

1.6 OBJECTIVES OF THE STUDY

1.7 HYPOTHESES

1.8 SCOPE AND DELIMITATIONS