A STUDY OF ACHIEVEMENT IN MATHEMATICS OF CLASS VIII STUDENTS BELONGING TO SCHEDULED CASTE OF KHURDHA DISTRICT, ODISHA

A
Dissertation
Submitted to
Barkhatullah University, Bhopal
for the
Partial Fulfilment
of the Requirement for the
Degree of
Integrated B.Ed.-M.Ed.
for the Session
2022-25

Supervisor Prof. N. C. Ojha Deptt. of Education Researcher Aswini Biswal B.Ed.-M.Ed. (Int.) VI Sem. Roll No: 2306600310



REGIONAL INSTITUTE OF EDUCATION, BHOPAL

A Constituent unit of the National Council of Educational Research and Training (NCERT)

NAAC Accredited A++ Grade Institute

Shyamala Hills, Bhopal-462002(M.P.)

DECLARATION

I, Aswini Biswal, do hereby declare that this B.Ed.-M.Ed. Dissertation entitled

" A STUDY OF ACHIEVEMENT IN MATHEMATICS OF CLASS VIII STUDENTS

BELONGING TO SCHEDULED CASTE OF KHURDHA DISTRICT, ODISHA", for

partial fulfillment of the requirement of the degree Three Year B.Ed.-M.Ed. (Integrated) from

Barkhatullah University, Bhopal.

I completed this work under the guidance of Prof. N. C. Ojha, Department of Education,

Regional Institute of Education (NCERT), Bhopal.

I further declare to the best of my knowledge that this dissertation has not been submitted earlier

by me or others for any Semester/Degree either in Barkatullah University or in any other

University.

Place: Bhopal
Date:

Aswini Biswal

Int. B.Ed.-M.Ed

RIE Bhopal

i

CERTIFICATE

This is to certify that Aswini Biswal, a student of Three Year Int. B.Ed.-M.Ed. (Integrated)

bearing Roll Number 2306600310 and Enrollment Number R230664070009 for the session

2022-25 of Regional Institute of Education(NCERT), Bhopal has worked under my guidance

and supervision for her dissertation titled "A STUDY OF ACHIEVEMENT IN

MATHEMATICS OF CLASS VIII STUDENTS BELONGING TO SCHEDULED

CASTE OF KHURDHA DISTRICT, ODISHA".

I certify that this work is original and worthy of presentation in partial fulfillment of the

requirement for the degree of B.Ed.-M.Ed. (Int.) of Barkatullah University (M.P.).

I further certify that the work has not been submitted either partially or fully to any other

university or institution for the award of any degree.

Prof. N. C. Ojha

Place: Bhopal

Date:____

Department of Education

RIE, Bhopal

ii

ACKNOWLEDGEMENT

I take this opportunity to express my gratitude to my guide, **Professor N. C. Ojha**, Department of Education, Regional Institute of Education, Bhopal, for his constant encouragement, kind support, and invaluable guidance to carry out the work presented in this dissertation. During this dissertation work, I have immensely benefited from his encouragement, guidance, and constructive criticism.

My sincere thanks to Professor Shiv Kumar Gupta, Principal RIE, Bhopal, and **Professor Jaydip Mandal,** Dean of Instructions, RIE Bhopal, for their inspiring cooperation and for providing a learning environment and facilities.

I am thankful to **Professor Ayushman Goswami,** Head, Department of Education, R.I.E., Bhopal, for providing enough learning facilities and guidance.

I also extend my gratitude to Prof. B. Ramesh Babu, Prof. I. B. Chughtai, Prof. Ratnamala Arya, Dr. Sanjay Kumar Pandagale, Dr. Saurabh Kumar, Dr. Manju, Dr. J.S. Borgaonkar, Dr. Triloki Prasad, Dr. Pavan Kumar, Dr. Rajesh Kumar, and Dr. Madhusudhanan P.V. as well as all the faculty members of the Department of Education, RIE Bhopal, for their affectionate care in completion of this study, my sincere thanks to all of them.

I am also thankful to **Dr P.K. Tripathy,** Deputy Librarian, and other library staff members for extending library facilities and helping in locating reference material.

I deeply appreciate the help obtained from my classmates and friends for sharing valuable insights and assistance, motivation, and support, which helped me in completing this dissertation.

Finally, and yet importantly, I take the opportunity to express my gratitude and love to my parents and beloved family members, for their understanding, kind support encouragement to do my work more efficiently during crucial times of the completion of the dissertation.

Aswini Biswal

B.Ed.-M.Ed.(Int.)
RIE Bhopal

TABLE OF CONTENTS

Declaration	i
Certificate	ii
Acknowledgement	iii
Table of Contents	iv
List of Figures	vii
List of Tables	vii
Abbreviations and Acronyms	viii

Sl. No.	CONTENTS	Page No.
	CHAPTER-I INTRODUCTION	1-14
1.1.0	Introduction	1
1.2.0	Conceptual background of the study	4
1.2.1	Teaching of mathematics at the middle stage	4
1.2.2	Mathematics and the background of the learners	7
1.2.3	What researches say about achievement in mathematics	10
1.3.0	Need and justification of the study	11
1.4.0	Statement of the problem	13
1.5.0	Operational definition of the key terms used	13
1.6.0	Objectives of the study	14
1.7.0	Delimitations of the study	14
	CHAPTER- II REVIEW OF RELATED LITERATURE	15-31
2.1.0	Introduction	15
2.2.0	Review of Related Literature	15
2.2.1	Review of students' academic achievement	15
2.2.2	Review of mathematics achievement	17
2.2.3	Review related to the academic achievement of SCs and Non-SCs	24
2.2.4	Review related to parental socio-economic status and students' mathematics achievement	29
2.2.5	Review of Influence of Teaching Methods	30
2.2.6	Review of School Environment and Infrastructure	31
2.3.0	Summary	31

	CHAPTER- III METHODOLOGY	32-34
3.1.0	Introduction	32
3.2.0	Methodology	32
3.3.0	Population and sample	32
3.3.1	Population	32
3.3.2	Sample	32
3.3.0	Variables of the study	33
3.3.1	Independent variable	33
3.3.2	Dependent variable	33
3.4.0	Tools and techniques	33
3.5.0	Procedure of data collection	34
3.6.0	Statistical techniques used for data analysis	34
3.7.0	Ethical considerations	34
		35-48
4.1.0	DATA ANALYSIS AND INTERPRETATION Introduction	35
4.1.0	Overview of data collected	35
4.2.0	Achievement in mathematics	35
4.3.0	Identification of factors influencing achievement in mathematics	36
4.3.1	Socio-economic status	37
4.3.2	Parental occupation	39
4.3.3	School infrastructure	41
4.3.4	Quality of Teaching	43
4.4.0	Methods employed by teachers for teaching mathematics	45
	CHAPTER- V 49 FINDINGS, DISCUSSIONS, SUMMARY,	
5.1.0	EDUCATIONAL IMPLICATIONS AND CONCLUSION Introduction	49
5.2.0	Findings	49
5.3.0	Discussion of findings	49
5.3.1	Difference in Achievement Between SC and Non-SC Students	49
5.3.2		50
3.3.2	Relationship Between Socio-Economic Status and Mathematics Achievement	30
5.3.3	Relationship Between Parental Occupation and Mathematics Achievement	50

5.3.4	Relationship Between School Infrastructure and Mathematics	51
	Achievement	
5.3.5	Relationship Between Quality of Teaching and Institutional	51
	Support and Mathematics Achievement	
5.3.6	Relationship between the teaching method employed and	52
7.40	Mathematics Achievement	50
5.4.0	Summary	52
5.4.1	Statement of the problem	52
5.4.2	Conceptual framework of the study	52
5.4.3	Objectives of the study	53
5.4.4	Population and sample	53
5.4.5	Sampling technique and sample size	53
5.4.6	Tools used for data collection	53
5.4.7	Statistical techniques used	53
5.5.0	Educational implications	53
5.5.1	Implications for Students	53
5.5.2	Implications for Teachers	54
5.5.3	Implications for Parents	54
5.5.4	Implications for Teacher Training Institutes	54
5.5.5	Implications for Curriculum Developers	54
5.5.6	Implications for School Administrators	54
5.6.0	Suggestions for further studies	54
5.7.0	Limitations of the study	55
5.8.0	Conclusion	55
	BIBLIOGRAPHY	
	APPENDICES	
	I	

LIST OF FIGURES

Sl. No.	CAPTION	Page No.
Figure-4.1	Mean and SD of Achievement in Mathematics of SC and	37
	Non-SC students as per the SES	
Figure-4.2	Mean and SD of Achievement in Mathematics of SC and	39
	Non-SC students as per the Parental occupation	

LIST OF TABLES

S. No.	CAPTION	Page No.
Table-3.1	School-wise and Category-wise representation of the	33
	Sample	
Table-4.1	Mean, SD and Percentiles of Achievement Scores of SC & NON-SC Students	35
Table-4.2	Mean and SD of Achievement in Mathematics of SC and Non-SC students as per the SES	37
Table-4.3	Mean and SD of Achievement in Mathematics of SC and Non-SC students as per the Parental occupation	39
Table-4.4	Percentage Distribution of Teachers' Perceptions of School Infrastructure Supporting Mathematics Teaching	41
Table-4.5	Percentage Distribution of Teacher Responses on Quality of Teaching Indicators in Mathematics	44
Table-4.6	Percentage Distribution of Teachers' Responses on Methods Employed In Mathematics Teaching	46

ACRONYMS AND ABBREVIATIONS USED

ASER – Annual Status of Education Report

BAS-Baseline Assessment Studies

B.Ed.- Bachelor of Education

BEO - Block Education Officer

Int. – Integrated

MANOVA - Multivariate Analysis of Variance

M.Ed. – Master of Education

M.P. – Madhya Pradesh

NAAC – National Assessment and Accreditation Council

NAS – National Achievement Survey

NCERT – National Council of Educational Research and Training

NEP – National Education Policy

Non-SC - Non-Scheduled Caste

PISA – Programme for International Student Assessment

RIE – Regional Institute of Education

SC - Scheduled Caste

SD – Standard Deviation

SES – Socio-economic Status