# STUDY OF STUDENT'S ACHIEVEMENT, INTEREST IN

# SCIENCE AND SCIENTIFIC CREATIVITY

DISSERTATION

## SUBMITTED IN PARTIAL FULFILMENT OF

THE DEGREE OF

### MASTER OF EDUCATION

TO

# BARKATULLAH UNIVERSITY, BHOPAL

(2000-2001)

SUPERVISOR

0

2

0

0

SUBMITTED BY

Dr. (Mrs) Avinash Grewal Reader in Education R.I.E., Bhopar

Vidhya Kuttappan M.Ed.(Elem.Education) Student R.I.E., Bhopal

# REGIONAL INSTITUTE OF EDUCATION (BHOPAL) N.C.E.R.T

# ERJYFICAJE

This is to certify that Miss Vidhya Ruttappan, a student of M.Ed. (Elem. Education) course, of this institute has worked on the topic "Study of Student's Achievement, Interest in Science and Scientific Creativity" under my guidance. The present dissertation is an outcome of her sincere research efforts. It fulfills all the requirements as per the ordinance of Barkatullah University, Bhopal relating to the degree of Master of Education (Ele. Edu.).

Date: 23-4-2001 Place: Bhokal.

(rs.) Avinash Grewal Dr. ( Reader in Education

#### ACKNOWLEDGEMENT

I take this opportunity to express my great gratitude to my guide Dr. Mrs Avinash Grewal for her valuable advice, continuous help, inspiring guidance and encouragement in the completetion of the study.

I dedicate this study to Jate Dr. I. D. Gupta who helped and guided me in the initial stages of my study.

I am thankful to Dr. G. K. Ichiri, Principal, Regional Institute of Education, Bhopal at the time of my joining the M. Ed. course, for providing academic enrichment and facilities in the institute.

It is my great pleasure to express my gratitude to my principal Dr. S. A. shaffi for kindly providing the necessary facilities for undertaking the dissertation work.

I am indebted to Dean shri B. N. Rawat, Prof. M. Sen Gupta Dr. S. K. Gupta, Dr. (Mrs) Suniti Khare and Shri A. C. Pachaury for their affectionate care and timely suggestions.

I am also thankful to the library staff of the institute for extending facilities and helping in locating reference material related to the study.

I am also thankful to principal and teachers of Demonstration Multipurpose school where I conducted the study for their co - operation in the collection of precise and adequte data. I thank the students of Demonstration Multipurpose school who sincerely participated in the study.

I also thank my classmates who were a source of inspiration to me in this pursuit.

Above all I owe my sincere gratitude to my mother and other family members for being a perennial source of inspiration to me.

Place

:Bhopal

Miss Widhya Kuttappan M. Ed. (Ele. Edu.)

Date: 23.4-2001

- °,

CO	ħ	1T	Έ	Ν	T	S	

37

-3

á.

CERT	TIFICATE .	i
ACKI	II	
CHAI	PTER I THE PROBLEM	1 - 11
1.0	INTRODUCTION	1 - 4
1.1	NEED OF THE STUDY	4 - 7
1.2	STATEMENT OF THE PROBLEM	7
1.3	VARIABLES OF THE STUDY	7
1.3.1	Independent Variables	
1.3.2	Dependent Variables	
1.4	OPERATIONAL DEFINITIONS OF	
	THE VARIABLES UNDER STUDY	7 - 8
1.4.1	Interest	
1.4.2	Achievement	
1.4.3	Gender	
1.4.4	Scientific Creativity	
1.5	OBJECTIVES OF THE STUDY	9
1.6	HYPOTHESES OF THE STUDY	10
1.7	DELIMITATIONS OF THE STUDY	11
<u> </u>	SUMMARY	11
CHA	PTER II REVIEW OF RELATED LITERATURE	<b>12</b> - 17
2.0	INTRODUCTION	12
2.1	STUDIES RELATED TO SCIENTIFIC	
	CREATIVITY AND OTHER VARIABLES	12 -17
2.2	SUMMARY	17

<u>CONTENTS</u>

PAGE

"Reisson", Pr

СНА	PTER III	METHODOLOGY OF THE STUDY	18 - 24
3.0	INTRODUC	TION	18
3.1	THE SAMP	LE	18
3.2	TOOLS US	ED	18 - 23
3.2.1	1 Adolescent	Interest Test	
3.2.2	2 Achievemei	nt In Science	
3.2.3	3 Verbal Test	of Scientific Creativity	
3.3	DATA COL	LECTION	23
3.4	STATISTIC	S USED	24
3.5	SUMMARY		24
CH	APTER IV	ANALYSIS OF DATA	25 - 33
4.0	INTRODUC	CTION	25
4.1	RESULTS	AND HYPOTHESES	25 - 33
4.2	SUMMARY	,	33
CH	APTER V	SUMMARY AND CONCLUSION	34 - 43
5.0	INTRODUC	CTION	34
5.1	IMPORTA	NCE OF CREATIVITY AND INTEREST	34 - 35
5.2	THE PROE	BLEM	35
5.3	VARIABLE	S OF THE STUDY	35
5.3	1 Independe	nt Variables	
5.3	2 Dependent	t Variables	
5.4	OBJECTIV	ES OF THE STUDY	35 - 36
5	5 НҮРОТН	ESES OF THE STUDY	36 - 37

¥.

-3

ĝ.

随気が目

CO	NT	ΈN	TS

A.

-3

Ý.

<u></u>

PAGE

5.6	SAMPLE OF THE STUDY	37
5.7	TOOLS USED FOR THE STUDY	38
5.7.1	Adolescent Interest Test	
5.7.2	Achievement in Science	
5.7.3	Verbal Test of Scientific Creativity	
5.8	STATISTICAL TECHNIQUES USED	38
5.9	DELIMITATIONS OF THE STUDY	38
5.10	FINDINGS OF THE STUDY -	38 - 42
5.11	EDUCATIONAL IMPLICATIONS	42 - 43
5.12	SUGGESTIONS FOR FURTHER STUDY	43

BIBLIOGRAPHY

44 - 45

### LIST OF TABLES

,

.

TABLE		PAGE
	CHAPTER III	
3.1	Scoring Procedure of Originality.	23
3.2	Schedule of the Data Collection.	23
	CHAPTER IV	
4.1	Correlation Between Achievement in	25
·	Science and Scientific Creativity.	
4.2	Correlation Between Interest in Science	26
	and Scientific Creativity.	
4.3	t – value for the Mean Scores of Boys and Girls	27
	on Scientific Creativity.	
4.4	t – value for the Mean Scores of Fluency of	28
	High and low Achievers in Science.	
4.5	t – value for the Mean scores of Flexibility of	28
	High and low Achievers in Science.	
4.6	t - value for the Mean Scores of Originality of High	29
Same managers	and Low Achievers in Science.	
4.7	t - value for the Mean Scores of Total Scientific	30
	Creativity of High and Low Achievers in Science.	
4.8	t – value for the Mean Scores of Fluency of	31 ຸ
	Students Scoring High and Low on Interest in	
	Science	

¥

7.

Þ.

-5

4.9	t – value for the Mean Scores of Flexibility of	31
	Students Scoring High and Low on Interest in	
	Science.	
4.10	t – value for the Mean Scores of Originality of	32
	Students Scoring High and Low on Interest in	
	Science.	
4.11	t - value for the Mean Scores of Total Scientific	33
	Creativity of Students Scoring High and Low on	
	Interest in Science.	

PAGE

TABLE

7

÷Ł

÷

STUDY OF STUDENT'S ACHIEVEMENT, INTEREST IN

# SCIENCE AND SCIENTIFIC CREATIVITY

D-145

### DISSERTATION

## SUBMITTED IN PARTIAL FULFILMENT OF

THE DEGREE OF

#### MASTER OF EDUCATION



TO

### BARKATULLAH UNIVERSITY, BHOPAL

(2000 - 2001)

#### SUPERVISOR

#### SUBMITTED BY

Dr. (Mrs) Avinash Grewal Reader in Education R.I.E., Bhopal Vidhya Kuttappan M.Ed.(Elem.Education) Student R.I.E., Bhopal

# REGIONAL INSTITUTE OF EDUCATION (BHOPAL) N.C.E.R.T