## EFFECT OF CONSTRUCTIVISM ON ACHIEVEMENT OF STUDENTS IN MATHEMATICS

A THESIS BY SHOVAKHAR PAUDEL

# FOR THE PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF EDUCATION

SUBMITTED TO DEPARTMENT OF MATHEMATICS EDUCATION UNIVERSITY CAMPUS KIRTIPUR, KATHMANDU 2016

### Letter of Approval

Thesis

By

### Shovakhar Paudel

"Effect of constructivism on Achievement of Students in Mathematics" has been

approved in partial fulfillment of the requirements for Degree of Master of Education.

Committee for the Viva-Voce		Signature
1.	Mr. Laxmi Narayan Yadav	
	(Chairman)	
2.	Prof. Dr. Hari Prasad Upadhyay	
	(Member)	
3.	Dr. Bedraj Acharya	
	(Member)	

#### LETTER OF CERTIFICATE

This is to certify that Mr. Shovakhar Paudel, a student of academic year 2068-2069 B.S. with thesis number 1032 Exam Roll No 281875 Campus Roll No281875 and T.U. Regd. No 9-2-308-128-2006 has completed his thesis under my supervision during the period prescribed by the rules and regulations of T.U. Nepal. The thesis entitled **'Effect of constructivism on Achievement of Students in Mathematics ''** has been prepared based on the results of his investigation. I recommend and forward that his thesis submitted for the evaluation as the partial requirement to award the degree of Master of education.

.....

.....

(.Associate Prof. Dr. Bedraj Acharya)

(Associate Prof Mr. Laxmi Narayan Yadav)

Supervisor

Head

#### ACKNOWLEDGEMENT

I express my gratitude to my respected supervisor, Dr. Bedraj Acharya Associate Professor of Departement of Mathematics Education, Tribhuvan, University, Kirtipur Kathmandu for his valuable suggestions, guidelines, encouragement and constructive suggestion during the completion of this study.

Similarly, I would like to express my sincere gratitude to the Associate Prof. Mr Laxmi Narayan Yadave the head of department of mathematics education and Prof. Dr. Hari Prasad Upadhyay, Chairman of Mathematics and Computer Science Education Subject Committee, T.U. Department of Education Kirtipur for their valuable suggestion. I am equally indebted to all the Lectures, Department of mathematics Education University Campus for their help and support.

My special thanks go to the teacher and students of Shree Gramyaa H.S. School and Sen H.S. School of Palpa district. I am very much indebted to Mr. Dilli Ram Dhungana of his valuable guidance, encouragement, co-operation and constructive suggestion for the completion of this paper. Similarly, I would like to express my thanks to my family member for their encouragement and support to complete the research.

Shovakhar Paudel

#### Abstract

The study entitled with "Effect of constructivism on Achievement of Students in Mathematics " was intended to find out the effect of constructivism in teaching perimeter, area and volume of grade VIII students. The main objectives of this study were;

- ) To determine the achievement level of the students who were taught by constructivist learning method.
- ) To compare the achievement scores of the students taught by constructivist method and traditional method.

To fulfill the objectives of this study, the researcher had taken pretest, posttest non equivalent two distinct groups. For achievement test two set of questions were prepared for pretest and posttest. In the same way for 3 weeks experimental period researcher adopt episode for each period. For the design of experiment research two different government schools were selected purposively from Palpa district. The sample schools were Gramya H.S. School and Sen H.S. School. Gramya H.S. School was selected for experimental group and Sen H.S. School for conventional group. The experimental and control group were taught the same topic and same question at grade VIII by using constructivist and conventional and constructivist method of teaching. There were 23 students in experimental school and 28 students were in conventional school. For the testing instrument pretest and posttest were adopt.

The main tools of this study were achievement test, teaching episode. Mean, standard deviation, variance, t-test were used as a statistical tool for the study. The

difference in mean achievement score were tested by using t-test at the 0.05 level of significance for determining statistical difference between achievements of two groups and found that there is significance difference between the achievements of students taught by constructivist method than that of students taught by traditional method. After analysis of the data, it was concluded that the constructivist method of teaching area, and perimeter was more effective than the conventional method of teaching.

### TABLE OF CONTENTS

Letter of Approval	i
Letter of Certificate	ii
Acknowledgement	iii
Abstract	iv
Contents	vi-viii
	Page No.
I. INTRODUCTION	1-13
Background of the Study	1
Statement of the Problem	9
Objectives of the Study	10
Significance of the Study	11
Hypotheses of the Study	12
Delimitations of the Study	12
Definition of the Terms	12
II. REVIEW OF THE RELATED LITURATURES	14-26
Empirical Literature	14
Theoretical Literature	19
Conceptual Framework	25
III. METHODS AND PROCEDURES	27-34
Research Design	27
Population of the Study	28
Sample of the Study	28
Tools / Instrument	29

Variables	30	
Independent Variables	30	
Dependent Variables	30	
Stages of the study		
Pre Experimental Stage	30	
Experimental Stage	31	
Post Experimental Stage	31	
Reliability and Validity	31	
Data Collection Procedures	32	
Scoring Procedure	32	
Data Analysis procedure	33	
IV. ANALYSIS AND INTERPRETATION OF DATA		
The level of students who were taught by constructivism	36	
Comparisons of Score from Pretest Data	38	
Posttest Comparison of the Score	40	
V. SUMMARY, FINDINGS, CONCLUSION AND RECOMMENDATION		
Summary	42	
Findings	42	
Conclusion	44	
Recommendation for Educational Implication	45	
Recommendation for Further Research	45	
Reference		
APPENDICES		

vii

### Lists of Tables and Diagram

Diagram; I conceptual framework

Diagram; II Sampling procedure

Table No: 1. Pretest and Posttest Design

Table No: 2. Scoring Strategies

Table No: 3. Pretest and Posttest Score of Experimental Group

Table No; 4 Comparisons of the Achievement Scores

Table No: 5. Posttest Comparisons between Achievements Score