

**EFFECTIVENESS OF COLLABORATIVE LEARNING IN MATHEMATICS**

**A  
THESIS  
BY**

**ISHOR PRASAD POUDEL**

**FOR THE PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE  
DEGREE OF MASTER OF EDUCATION**

**SUBMITTED  
TO**

**DEPARTMENT OF MATHEMATICS EDUCATION  
CENTRAL DEPARTMENT OF EDUCATION  
UNIVERSITY CAMPUS, KIRTIPUR  
TRIBHUVAN UNIVERSITY  
KATHMANDU**

**2016**

## LETTER OF CERTIFICATE

This is to certify that Mr. Ishor Prasad Poudel a student of the academic year 2070/2071 with the campus roll. No 281054, Thesis Number 1078 and T. U. Registration No: 9-1-48-1837-2005 has completed his thesis under my supervision, during the period prescribed by rules and regulations of Tribhuvan University, Nepal. This thesis entitled "**Effectiveness of Collaborative Learning in Mathematics**" embodies the result of his investigation conducted during the period 2071/2072 in the Department of Mathematics Education Central Department of Education University Campus Tribhuvan University Kirtipur, Kathmandu. I recommend and forward that his thesis be submitted for the evaluation to award the degree of Master of Education.

---

(Mr. Krishna Prasad Adhikari)  
Supervisor

---

(Assot. Prof. Laxmi Narayan Yadav)  
Head

**LETTER OF APPROVAL****Thesis Submitted****By****Ishor Prasad Poudel****Entitled**

**"Effectiveness of Collaborative Learning in Mathematics"** has been approved in partial fulfillment of the requirements of the degree of Master of Education.

**Committee for the Viva-voce****Signature**

Assot. Prof. Laxmi Narayan Yadav

.....

(Chairman)

Prof. Dr. Hari Prasad Upadhyay

.....

(Member)

Mr. Krishna Prasad Adhikari

.....

(Member)

## ACKNOWLEDGEMENT

I would like to express my sincere gratitude to my respected supervisor Mr. Krishna Prasad Adhikari, Department of Mathematics Education T.U Kirtipur, for inspiring and assisting me to plunge into this familiar domain of reflective practices from every corner. The credit also goes to him for all academic mentoring that led me to document this work in a sequence. His productive encouragements, pertinent questions on issues, critical comments, and stimulating suggestions were instrumental for making this research lively, real, and natural.

I would like to thank all informants for their rigorous reflective writings and feedback during the research. I am indebted to Assot. Prof. Laxmi Narayan Yadav, Head Department of Mathematics Education for his constructive suggestion, Prof. Dr. Hari Prasad Upadyay, Prof. Dr. Min Bahadur Shrestha, Prof. Dr. Binod Dhakal and all my respected teachers of Department of Mathematics Education T.U Kirtipur suggestions to bring this work into present form.

I would also like to express thanks to principal, mathematics teacher of the concerned school for their cooperation. I appreciate the encouragement and enthusiastic support that I got from my friend and my family member.

Finally, I thank all well-wishers--known and unknown, friends, and colleagues who contributed directly and indirectly to my life and filling me with mirth and ease. Because of your congenial support, I am able to write. And because I write, I think I can survive well.

.....

(Ishor Prasad Poudel)

## ABSTRACT

This study is entitled "Effectiveness of Collaborative Learning in Mathematics". The main purpose of this study was to identify the effects of collaborative learning on students' mathematics achievement and attitudes towards mathematics in selected Gandhi Adarsha secondary school in Bhaktapur District. A total of 40 students of grade nine among them 20 students were experimental and 20 students were in control group participated in this study where experimental design was administered. Data were analyzed and interpreted by using the statistical tools such as Mean, Standard deviations and t-test. Along with the qualitative data the non cognitive part of learning was also noted and analyzed descriptively.

The newly developed collaborative learning focuses on students' interests and their potential to learn the particular subject. This aims on finding out the positivity in students, enabling their past successes and conducting the learning activities for fostering the same. Hence this research tries to discuss about empowering mathematics learning through collaborative ways. And hence, it focus on making proper respect to students' need and interest upon mathematics learning, the knowledge they possess, the background successes and potentials and conducting learning activities in a similar way.

The results showed that collaborative learning had significant effects on mathematics achievement and attitudes towards mathematics. It was found that students' performance in mathematics and attitudes towards mathematics were affected by exposure to the collaborative learning. The findings of this study have shown a great improvement in mathematics achievement and attitudes towards mathematics. Therefore, collaborative learning can be successfully used to promote student' performance in mathematics in secondary school.

## TABLE OF CONTENTS

	Page No.
<i>Letter of Certificate</i>	<i>i</i>
<i>Letter of Approval</i>	<i>ii</i>
<i>Acknowledgement</i>	<i>iii</i>
<i>Abstract</i>	<i>iv</i>
<i>Table o Content</i>	<i>v</i>
<i>List of Table</i>	<i>vi</i>
<b>Chapters</b>	
<b>I: INTRODUCTION</b>	<b>1-8</b>
Background of the Study	1
Statement of the Problem	6
Significance of the Study	6
Objectives of the Study	7
Delimitation of the Study	7
Definition of Terms	8
<b>II: REVIEW OF RELATED LITERATURE</b>	<b>9-17</b>
Empirical Literature	9
Theoretical Framework	11
Reflective Review	16
<b>III: METHODS AND PROCEDURES</b>	<b>18-25</b>
Design of the Study	18
Experimental design	19
Population and sample for the Study	21
Instrument of the Study	21

Data Collection Procedure	23
Experimental process	24
Data Analysis Procedure	25
<b>IV: DATA ANALYSIS AND INTERPRETATION</b>	<b>26-34</b>
Reflective Diary	28
Discussion	33
<b>V: SUMMARY, FINDING, CONCLUSION AND RECOMMENDATION</b>	<b>35-37</b>
Summary	35
Finding	35
Conclusion	36
Recommendation	36
Suggestions for Further Study	37
<b>REFERENCE</b>	<b>38-40</b>
<b>APPENDICES</b>	<b>41-63</b>

**LIST OF TABLES**

	<b>Page No.</b>
Table 1: Pre-test & Post-test non equivalent group design	19
Table 2: Students Demography in Selected School	19
Table 3: Comparison of Experimental & Control Group	
Achievement in Pre-test	26
Table 4: Comparison of Experimental & Control Group	
Achievement in Post-test	27