PROMOTION OF STUDENTS' ACHIEVEMENT IN GEOMETRY USING VAN HIELE MODEL IN SECONDARY LEVEL

A

THESIS

BY

RAMESHWAR PRASAD JOSHI

SYMBOL NO. 281184

FOR THE PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER'S IN MATHEMATICS EDUCATION

SUBMITTED

TO

DEPARTMENT OF MATHEMATICS EDUCATION

CENTRAL DEPARTMENT OF EDUCATION

UNIVERSITY CAMPUS

TRIBHUVAN UNIVERSITY

KIRTIPUR, KATHMANDU

NEPAL, 2021

TABLE OF CONTENTS

LETTER OF APPROVAL

This thesis entitled **Promotion of students' Achievement in Geometry Using Van Hiele Model in Secondary Level** submitted by Mr. Rameshwar Prasad Joshi is partial fulfillment of the requirements for the Master's degree in Education has been approved.

<u>Committee for Viva-Voce</u>   <u>Signatures</u>

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(Supervisor)

Date: 30 March 2021

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LETTER OF CERTIFICATE

This is to certify that Mr. Rameshwar Prasad Joshi, students of academic year 2068/070 with campus Roll No.2645(2068) & 2621(2070), Exam Roll No. 281184 (academic Year 2070) and T.U. Registration No.: 6 - 1 - 329 -103 -2003 has completed his thesis under supervision of Mr. Krishna Prashad Bhatt during the period prescribed by the rule and regulations of Tribhuvan University, Nepal. The thesis entitled **"Promotion of Students' Achievement in Geometry Using Van Hiele Model in Secondary Level"** has been prepared based on the results of his investigation conducted during the period of January 2021 to March under the Department of Mathematics Education, University Campus, Tribhuvan University, Kirtipur, Kathmandu. His thesis number is 1596. I recommend and forward his thesis for evaluation as the partial requirement to award the Degree of Master of Education.

....
Mr. Krishna Prashad Bhatt
(Supervisor)
Date: 17 March 2021

....
Prof. Dr. Bed Raj Acharya
(Head)

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By

Rameshwar Prasad Joshi

DECLARATION

This thesis contains no material which has been submitted for the award of other degree in any institution. To the best of my Knowledge and belief this thesis contains no material previously published by any authors except due acknowledgement has been made.

…………………………

Date: 30 March 2021   Rameshwar Prasad Joshi

DEDICATION

This study is dedicated to

my affectionate parents Mr. Nav Raj Joshi and

late. Mrs. Dhawala Devi Joshi who gave me grandeur opportunity

to step in this earth and respected all my teachers; my wife Sushila Pandey;

sister Dipa Joshi; brother Bhubaneshwar Joshi; uncle Manoj Joshi; all my family

members and all persons who support, love, care and sacrifice a person who I am now.

ACKNOWLEDGEMENT

I would like to thanks the Department of Mathematics Education and Central Department of Education, Kirtipur for providing me an opportunity to carry out this research work. I am highly grateful to my supervisor Mr. Krishna Prashad Bhatt for his continuous guidance, creative suggestion, encouragements, inspiration and generous remarks to complete this thesis on time. His valuable suggestion and instruction have supported me from selection of the problem till the completion of this thesis.

My sincere appreciation goes to Prof. Dr. Bed Raj Acharya, Head of Department of Mathematics Education, TU Kirtipur for his helpful suggestion, support, inspiration and encouragement during this study. I am also very much indebted to all of school families which were selected for study for their sweet cooperation and provide opportunity for the collection of data.

Finally, I am also thankful to my parents, family, friends, teaching staffs of Shree Kailpal Secondary School Paniut, Bhaheshwor 1 who associated directly or indirectly supported me. I would like to express my appreciation to University Computer and Photocopy Service, Kirtipur for his help in printing and organizing of my research.

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Rameshwar Prasad Joshi

ABSTRACT

This thesis is entitled **"Promotion of Students' Achievement in Geometry Using Van Hiele Model in Secondary Level".** The objectives of this study were to dig out the level of mathematics students of secondary level compared with Van Hiele model and to explore to attitude of the students about Van Hiele model of teaching geometry at grade nine.

The design of the study is mixed research design. Two government school were selected by purposive sampling. The respondents of this study were all students of grade 9 from selected two school. To collect data, the researcher used document analysis, Van Hiele Geometry Test, and clinical interview as research tool. The researcher analyzed geometry syllabus of grade nine and past geometry yearly examination questions in document analysis.

The research from the study indicated that many of the selected school students who participated in the research have a weak conceptual understanding of geometric concept. Most of the students were functioning at Van Hiele level 0 and 1. The students who participated in the study were functioning at a level that do not fit with their mathematics curriculum. There were better performance of school B than school A.

Researcher found the condition that some students wrote the correct answer of upper level without answering the previous level. Through the interview it was found that this condition arises due to the rote learning, guessing, learning rules or definitions by rote or by applying routine algorithms that they didn't understand. The main challenge found by this research study was that the participants lacked conceptual understanding of geometric concepts. The teaching and learning of geometry should be conduct program to improve result. When teaching about geometric shapes and concepts, teacher should ensure that the proper geometric terminologies are used by both teacher and students. Students can only recognize, describe and distinguish geometric shapes from each other by knowing their properties. Teacher should focus to student to study the structure of geometry, student should be self-motive to learn geometry, generate rules and regulation side of school, student and teacher to promote the achievement in geometry.