

**VAN HIELE 'S LEVEL OF GEOMETRIC THINKING AMONG LOWER
SECONDARY SCHOOL STUDENTS IN GEOMETRY**

A

THESIS BY

JANARDAN CHAUDHARY

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

SUBMITTED

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LETTER OF CERTIFICATION

This is to certify to **Mr. Janardan Chaudhary** a student of academic year 2070/71 with campus Roll No. 583 exam Roll No. 280431, thesis number 1330 and T.U. Regd. No. 9-1-15-649-2006 has completed his thesis under supervision of Prof. Dr. Min Bahadur Shrestha during the period prescribed by the rules and regulation of Tribhuvan University, Nepal. The thesis entitled "**Van Hiele's Level of Geometric Thinking among Lower Secondary School Students in Geometry**" has been prepared based on the results of his investigation. I, here by recommend and forward that his thesis be submitted for evaluation as the partial requirements to the degree of Master of mathematics Education.

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Department Head

LETTER OF APPROVAL

A thesis by Janardan Chaudhary entitled "**Van Hiele's Level of Geometric Thinking among Lower Secondary School Students in Geometry**" has been approved for the partial fulfillment of the Requirements for Degree of Master of Mathematics Education.

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Date.....

RECOMMENDATION FOR ACCEPTANCE

This is to certify that **Mr. Janardan Chaudhary**, has completed his thesis entitled "**Van Hiele's Level of Geometric Thinking among Lower Secondary School Students in Geometry**" under my supervision during the period prescribed by the rules and regulation of Tribhuvan University, Kirtipur, Kathmandu, Nepal. I recommend and forward his thesis to the Department of Mathematics Education to organize final viva-voce.

.....
(Prof. Dr. Min Bahadur Shrestha)

Supervisor

Date:

DEDICATION

Honestly dedicated

To

My parents

Bikram Chaudhry and Sabitri Devi Chaudhary

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:

.....

(Janardan Chaudhary)

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.....

(Janardan Chaudhary)

ABSTRACT

This research study design is to explore the Van Hiele's level of geometric thinking among lower secondary school student in geometry. The objectives of this study were 'to explore the Van Hiele's level of lower secondary school Students in geometry and to examine relationship between Van Hiele's levels and geometry achievement of students. The population for the study consisted of all lower secondary school students of grade eight of Bara district. Eight schools were selected according stratified random sampling method. Altogether 268 students of grade eight were selected for this study. Among 268 students 148 were boys whereas remaining 120 were girls. Van Hiele Geometry Test (VHGT) with 24 items on first three levels and geometry test was constructed and implemented. A geometry test mainly based on grade eight texts (geometry) was constructed in form of multiple choice items and administered to the same sample students. The Van Hiele Geometry Test (VHGT) papers were scored according to the level based scheme of fit/unfit and success criteria (5 out of 8). The geometry test was adopted in usual manner for any multiple choice items. On the basis of VHGT, students were assigned level so that each of the fitted students belonged to particular level. Students were categorized according to Van Hiele level scheme and mean scores and standard deviations were calculated for geometry test scores so as to examine the relationship between Van Hiele levels and geometry test achievement.

The result indicated that majority of students were at visual level and only one fourth attended up to level 2. The Van Hiele levels were found to have descriptors that describe geometry achievement of the students.

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ABBERRVIATIONS

CDASSG	:	Cognitive Development and Achievement in Secondary School Geometry
CDC	:	Curriculum Development Centre
CMP	:	Connected Mathematics Project
MALATI	:	Mathematics Learning and Teaching Initiatives
NCTM	:	National council of Teachers of Mathematics
VHGT	:	Van Hiele Geometry Test