

DEVELOPMENT OF NUMBER SYSTEM

A

THESIS

BY

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LETTER OF CERTIFICATE

This is to certify that **Mr. Yubraj Shahi**, a student of academic year **2070/2071** with Campus Roll No: **53/2070**, exam Roll No: **280555/2070**, T.U. Registration No: **9-2-57-1107-2008** and Thesis Number 1283, has completed his thesis under supervision of Assoc. prof. Dr. Eka Ratna Acharya, during the period prescribed by the rules and regulation of Tribhuvan University, Nepal. The thesis entitled "**Development of number system**" has been prepared based on the result of his investigation. I hereby, recommend and forward that his thesis be submitted for the evaluation as partial requirement to award the Degree of Master of Education.

.....
Assoc. Prof. Laxmi Narayan Yadav

Head

Date: July, 2017

LETTER OF APPROVAL

A

Thesis

By

YUBRAJ SHAHI

Entitled

“Development of number system” has been approved in partial fulfillment of the requirements for the Degree of Master of Education.

Committee of the Viva-Voce

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RECOMMENDATION FOR ACCEPTANCE

This is to certify that **Mr.Yubraj Shahi** has completed his M. Ed. thesis entitled '**Development of Number System**' in my supervision during the period prescribed the rules and regulations of Tribhuvan University, Kirtipur, Kathmandu, Nepal. I recommend and forward his thesis to the Department of Mathematics Education to organize final viva-voce.

.....

Assoc. Prof. Dr. Eka Ratna Acharya

Supervisor

Date: July, 2017

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July, 2017

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DEDICATION

I would like to dedicate this thesis to the three most influential people in my life; mother **Durga Shahi**, Sister **Hira Shahi** and brother **Milan Shahi**. You all have earned this degree as much as I have. Your love and support knows no boundaries.

DECLARATION

I hereby declare that the work presented in this thesis has been done by myself, and has not been submitted elsewhere for completion of Master degree. All sources of information have been specially acknowledged by reference to the author.

.....

Yubraj Shahi

Date: 18th July, 2017

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ABSTRACT

Number is fundamental basis of the mathematics. Number and symbols are the preliminary study of mathematics learning. This study focuses to investigate the good information about number system. Thus, the main objective of the study is to explore the number perception on human mind and analysis the historical development of Hind-Arabic and Devanagari number system. The research is conducted on the basis of content analysis approach from primary and secondary data. So, design of this research is qualitative research and Historical descriptive.

The source of data for this study are taken from historical documents, archives, websites, research article, related journals, authorized books, consulting with research persons, libraries, department of archaeology etc. The researcher applied open-ended interview with recourse persons to make study strong and valid.

What is the origin of number? How to perceive the number in primitive people? And how was the developing phase of the Hindu-Arabic, and Devanagari number system? Be the main problem of this study. The data analysis and interpretation procedure was guided from triangulation process. For this, data from different sources explain analytically, logically, and cross matching comparatively.

At last study concluded, the numbers are the result of social phenomena. The concept of number and symbols are comes from ancient human culture and human civilization. So, the numbers are invention from different human civilization but are not from mathematicians. It comes from logical thought on the objects. Each animal have the different number sense. Ancient people used concrete objects for notation the numbers before the recorded history. Primitive people makes number concept from the define collection of objects. For example; “sun” and

“moon” for 1, “eyes” and “breast” for 2 and so on. The modern place-value decimal counting was developed from ancient people’s one-to-one corresponding counting techniques. The foundation of Devanagari script is ancient Hindu (Nagari) script which was a branch of Brahmi script. Consequently, Hindu-Arabic number is revised form of ancient Hindu (Nagari) number.

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ABBREVIATIONS

CERID	:	Research Centre for Educational Innovation and Development.
M. Ed	:	Master's in Education.
NCE	:	Nigeria Certificate in Education.
NESP	:	National Education System Plane.
NSB	:	Number Sense Brief
WJ C	:	Woodcock Johnson Calculation
AP	:	Applied Problems
DSTP	:	Delaware Student Testing Program
TEN	:	Test of Early Numeration
OC	:	Oral Counting
QD	:	Quantitative Discrimination
NI	:	Number Identification
CAS	:	Continuous Assessment System