

Exploring Conceptual and Procedural Learning Difficulties
in School Level Coordinate Geometry

A
Thesis
By
Krishna Prasad Regmi

For Partial Fulfillment of the Requirement for the Degree of Master of
Education

Submitted To
Department of Mathematics Education
Central Department of Education
University Campus
Tribhuvan University
Kirtipur, Kathmandu
2019



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This is to certify that **Mr. Krishna Prasad Regmi**, has completed his thesis entitled **“Exploring Conceptual and Procedural Learning Difficulties in School Level Coordinate 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.

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Letter of Approval

This thesis entitled “**Exploring Conceptual and Procedural Learning Difficulties in School Level Coordinate Geometry**” submitted by Mr. Krishna Prasad Regmi in partial fulfillment for requirement of Degree of Masters in Mathematics Education has been approved.

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Letter of Certificate

This is to certify that **Mr. Krishna Prasad Regmi**, a student of academic year 2072/2073 with Campus Roll No. 291/2072-073, Exam Roll No 7228310, T.U.Regd.No. 9-2-48-1591-2011 and Thesis No 1415 have completed his thesis under rules and regulation of Tribhuvan University, Nepal. The thesis entitled “**Exploring Conceptual and Procedural Learning Difficulties in School Level Coordinate Geometry**” has been prepared based on the result of his investigation conducted from the period of January 2019 to August 2019 at the Department of Education, University Campus, Kirtipur, Kathmandu. I hereby, recommended and forward that his thesis be submitted for the evaluation as the partial requirement to award the Degree of Masters of Education.

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Assoc. Prof. Laxmi Narayan Yadav

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By

Krishna Prasad Regmi

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Declaration

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This thesis contains no materials, which has been accepted for the award of other degree in any institutions. To the best of acknowledgement and belief thesis contains the no materials previously published any others expect due acknowledgement has been make.

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Mr. Krishna Prasad Regmi

Date:.....

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I would like to express my enormous gratitude to my respected supervisor Mr. Krishna Prasad Adhikari, Lecturer, Department of Mathematics Education, Central Department of Education Kirtipur, Kathmandu for his constructive guidance and valuable suggestions without which this work would not have been completed. His guidance and help has been a great source of encouragement and inspiration to me.

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Date:

.....

Mr. Krishna Prasad Regmi
Kirtipur, Kathmandu

This is an qualitative research entitled with “Exploring Conceptual and Procedural Learning Difficulties in School Level Coordinate Geometry” is intended to explore conceptual and procedural difficulties faced by the student in learning coordinate geometry. In order to fulfill the objective of the study, I used mathematics achievement test and in-depth interview tools to find actual and perceived learning difficulties.

This study based on case study research design. The four schools of Kaski district’s comprising total of 80 students were selected for the sample of study. Among them seven students were taken for in-depth interview. The purposive sampling method was used to collect the primary data. I analyze the data by inductive thematic approach.

I divide the learning difficulties in two types. They are conceptual difficulties and procedural difficulties. In conceptual difficulties, students feels difficulties in defining co-ordinate term, symbolization, mathematical representation of the term, visualizing and understanding the object, recognizing abscissa and ordinate, transformation of knowledge and misconception about the coordinate geometry. Also in procedural difficulties, students feel difficulties in using appropriate formulas, solving procedure, selecting proper formula, assuming coordinate, substituting assuming value in formula, understanding ratios, points and its relationship, solving equation, recognizing variable and constant in equation. Similarly students feel difficulties in establish the interrelationship of properties of figures, calculation, solving in sequential order, connecting other mathematical axioms and postulate in coordinate geometry.

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