Difficulties in Learning Trigonometric Problem

A

Thesis

By

Kamal Paudel

In Partial Fulfillment of the Requirement for the Master's Degree of Mathematics

Education

Submitted to

Department of Mathematics Education

Central Department of Education

University Campus

Tribhuvan University

Kirtipur, Kathamndu

2019

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This is to certify that **Mr. Kamal Paudel,** has completed his thesis entitled **"Difficulties in Learning Trigonometric Problems"** 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.

…………………………

Krishna Prasad Adhikari

(Supervisor)

Date: ....

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Letter of Approval

This thesis entitled "**Difficulties in Learning Trigonometric Problems"** submitted by Mr.

Kamal Paudel in partial fulfillment for requirement of Degree of Masters in Mathematics Education has

been approved.

Committee for the Viva-Voice   **Signature**

Assoc. Prof. Laxmi Narayan yadav   ....…..…………

(Chairman)

Prof.Dr. Hari Prasad Upadhyay   ....…………….....

(External)

Mr. Krishna Prasad Adhikari   ....……………….

(Member)

Date: ....

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Letter of Certificate

This is to certify that **Mr. Kamal Paudel,** a student of academic year 2072/2073 with Campus Roll No. 290/2072-073, Exam Roll No 7228299, T.U.Regd.No. 9-2-48-1580-2011 and Thesis No 1414 have completed his thesis under rules and regulation of Tribhuvan University, Nepal. The thesis entitled "**Difficulties in Learning Trigonometric Problems"** has been prepared based on the result of his investigation conducted from the period of January 2019 to Jun 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.

.... ………………

Assoc. Prof. Laxmi Narayan Yadav

Head

Date: ....

Declaration

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.

…………………..

Mr. Kamal Paudel

Date:………………

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Date: ....

....

Mr. Kamal Paudel

Kirtipur, Kathmandu

Abstract

The major purpose of this study was to explore the difficulties in learning trigonometric problem and analyze its causes at grade IX students. The study was carried out on four private schools of Kaski district that were selected through purposive sampling. In this research I selected hundred students for achievement test. Among them seven students, whose performance is not satisfactory were selected for interview. The case study research design was used in this qualitative research. Data were collected from diagnostics test, observation and in-depth interview schedules. The collected data was analyzed by general inductive approach.

After collection the data from the achievement test, class observation and interview, difficulties in learning trigonometric were categorized in two topics as conceptual and procedural difficulties. Similarly the causes of difficulties in learning trigonometry were categorized as motivation, pre-knowledge, home/school environment, student's attitudes and misconception. In conceptual difficulties: students had difficulties in mathematical definition, symbolizing of mathematics terms, mathematical representation and notation. Similarly in procedural difficulties; students had difficulties in using formula, making connection between definition and problem, findings significant value, separating and multiplying the power of trigonometric terms and visualizing the objects. For the above difficulties reason involve that lack of conceptual knowledge, less practice at home, lack of confidence, teaching method, student's attitude towards trigonometry. Student didn't give clear solution of trigonometric problem. It is necessary to find suitable strategy to cover most of these difficulties for improving student's conceptual and procedural difficulties in trigonometry. The results of this analysis can help to select and design effectiveness learning strategy to rectify the mentioned difficulties.