

**CONCEPTUAL AND PROCEDURAL DIFFICULTIES IN LEARNING
DERIVATIVE**

A

THESIS

BY

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This thesis entitled “**Conceptual and Procedural Difficulties in Learning Derivative**” has been approved in partial fulfillment for requirement of Degree of Masters of Education.

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Recommendation for Acceptance

This is to certify that **Mr. Sujan Kafle**, has completed his M.Ed. thesis entitled “**Conceptual and Procedural Difficulties in Learning Derivative**” 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.

.....

Dipak Mainali

(Supervisor)

Date: May 24, 2019

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By

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Dedication

Dedicated

to

This work is affectionately dedicated to my Father BholanathKafle and Mother BimalaKafle(Pudasaini) who even in a very difficult situation gave me great span of their life for what I am now and all my respected teachers.

Declaration

This thesis does not contain any others work which is offensive and beyond the copy write norms. To the best of my knowledge and beliefs this research is truly based on my effort and it does not match with any researches that were published earlier in this university as well as others. I take all the ethical and legal responsibility for submitting this thesis.

.....

SujanKafle

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.....

Sujan Kafle

May, 2019

Abstract

This is case study related to "Conceptual and Procedural difficulties in Learning Derivative" to explore the difficulties of conceptual understanding and to explore the difficulties of the procedural understanding of the derivative. The case for this study was the students of the grade XI. The study site was Makwanpur Multiple Campus, Makwanpur and 40 students of Grade XI were selected as sample by using purposive sampling. The data were collected through the CPUBT and interview guidelines. The total four problems were asked in the CPUBT which was constructed on the basis of APOS theory. On the basis of test result the three respondents were selected for the interview and the in-depth interview was conducted. The collected information through the interview were systematized and analyzed according to general inductive method.

The finding of this study indicates that students had weak concept to understand the derivative as a rate of change, unable to understand the clear geometrical meaning of derivative, unable to make exact sense of limit necessary to study the derivative, unable to use power rule to find the derivative. Hence, it can be concluded that the teacher are focusing only procedural understanding of derivative and students becomes exam oriented which makes the derivative as one of the difficult topic. Thus, both teacher and students should focus the conceptual teaching and learning of derivative and pre knowledge of derivative such that they could easily understand the concept of derivative. Thus, teacher should change their teaching style so they can make their classroom very fruitful and learning derivative become a meaningful which avoids the rote learning.

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