

AN ASSESSMENT ON DIFFERENTIATION TOPIC AMONG
FORM 5 STUDENTS IN SHAH ALAM, SELANGOR

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ABSTRACT

Acceptance of students in Additional Mathematics is seen as one of the problems faced by teachers today. Moreover, the study aims to assess student's performance in differentiation topic and to find students' common mistakes in solving differentiation problems. This study is a combination of quantitative and qualitative approaches. The instruments used are a differentiation calculus test questions given to 72 form five students in SMK Jalan Kebun, Shah Alam, Selangor and the interview conducted on 6 students as supporting data. The result shows that the overall achievement in differentiation is not satisfactory. Students failed to master a few units including finding the first derivative of a polynomial using the first principle, first derivative of a composite function, small changes in quantities and rate of change for related questions. There are also a number of mistakes made by students in each unit. From the finding, it was found that there is relationship between latest grade in Additional Mathematics and grade in differentiation topic test. However, there is no relationship between grade in Mathematics PMR and grade in differentiation topic test. From the finding also, it was found that there is no significance different between student's gender and class streams in students' differentiation topic achievement. The test results and interviews obtained have enabled the researcher in finding the level of students' mastery in differentiation.

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CHAPTER 1

1. INTRODUCTION

1.1. Introduction

Calculus is one of the most powerful and supple tools of mathematics. Its applications, both in pure mathematics and in virtually every scientific domain, are manifold. It can be seen from its uses in our daily life or in professional fields. For example, an economist, private sectors, engineers and almost every professional fields used Calculus in a specific way.

The Additional Mathematics (KBSM) syllabus is in line with Thomas and Finney (1992), who mention that differentiation is a main idea in Calculus. In Malaysia, Calculus also taught in upper secondary level particularly in Additional Mathematics Integrated Curriculum for Secondary Schools (KBSM). In core component of Additional Mathematics (KBSM), calculus is one of the learning components which involve Differentiation and Integration. The content of the Additional Mathematics (KBSM) syllabus