

UTILIZING MICROSOFT MATHEMATICS IN TEACHING AND LEARNING CALCULUS

Rina Oktaviyanthi, Yani Supriani

Universitas Serang Raya, Jl. Raya Serang-Cilegon Km 5, Taman Drangong, Serang, Banten 42162
e-mail: rinaokta1210@yahoo.com

Abstract

The experimental design was conducted to investigate the use of Microsoft Mathematics, free software made by Microsoft Corporation, in teaching and learning Calculus. This paper reports results from experimental study details on implementation of Microsoft Mathematics in Calculus, students' achievement and the effects of the use of Microsoft Mathematics on students' attitudes in relation to such experience. Two classes of the students from the first year student in Universitas Serang Raya were participated in the study. This study found that students who taught by using Microsoft Mathematics had higher achievement and has a positive effect on students' confidence of mathematics.

Keywords: Calculus, Educational Technology, Mathematics Education, Microsoft Mathematics, Technology Application

Abstrak

Desain eksperimen dilakukan untuk menyelidiki penggunaan Microsoft Mathematics, sebuah software edukasi gratis yang dikeluarkan oleh Microsoft Corporation, dalam pengajaran dan pembelajaran Kalkulus. Artikel ini melaporkan hasil dari studi eksperimental tentang implementasi Microsoft Mathematics pada pembelajaran Kalkulus, perolehan nilai dan efek penggunaan Microsoft Mathematics pada sikap mahasiswa. Dua kelas dari mahasiswa tahun pertama di Universitas Serang Raya menjadi sampel penelitian ini. Penelitian ini menemukan bahwa mahasiswa yang belajar dengan Microsoft Mathematics memiliki perolehan nilai lebih tinggi dan memiliki efek positif pada kepercayaan diri dalam matematika.

Kata Kunci: Kalkulus, Teknologi Pendidikan, Pendidikan Matematika, Microsoft Mathematics, Aplikasi Teknologi

Learning mathematics is closely related to visualization and representation of mathematical objects and procedures. In relation to learning mathematics, technology is identified as a tool and important component to support visualization and interactive media that assist representation, reasoning, calculation construct, exploring, and solving problem (Curri, 2012). As NCTM (2000) asserts that, *“technology is essential in teaching and learning mathematics; it influences the mathematics that is taught and enhances students' learning. Teachers' attitudes play an important role in using technology in teaching and learning mathematics.”*

The use of technology in education improves learning significantly better than conventional learning. By using technology, students engage in connecting the schools to the wider world, giving the dynamically display linked by multiple representation, interactive models and simulations of learning material (Ashburn & Floden, 2006). Integrating technology in teaching and learning process is expected to enhance the students' ability to understand the complex idea and able to construct