

TEACHING MATHEMATICS INTERACTIVELY USING TechMa

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by

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ABSTRAK

Perkembangan matematik amat penting pada permulaan usia kanak-kanak. Kanak-kanak telah menunjukkan mereka berkebolehan dalam pemikiran dan pengetahuan matematik pada usia seawal tiga tahun. Teknologi dapat membantu dan mempertingkatkan pengajaran matematik kepada kanak-kanak dengan menyediakan persekitaran yang menyeluruh dan menyeronokkan. Komputer dapat mempertingkatkan keupayaan belajar kanak-kanak dan membenarkan kanak-kanak untuk meneroka pengetahuan tanpa perasaan takut. Interaktif membantu kanak-kanak memfokus kepada pelajaran yang diajar kerana ia menyediakan maklumbalas terhadap apa yang kanak-kanak lakukan. Tujuan projek ini adalah untuk membangunkan laman web interaktif bagi pengajaran matematik untuk kanak-kanak. Sebuah prototaip dibangunkan dengan perisian Macromedia Authorware 6.0 dan Microsoft FrontPage 2000 dan diberi nama Pengajaran Matematik Kanak-kanak atau secara ringkasnya TechMa. Prototaip ini dibangunkan untuk kanak-kanak berumur dari 3 hingga 6 tahun, ibu bapa dan guru. Prototaip ini diharap dapat menarik minat kanak-kanak untuk belajar matematik pada usia yang muda. Kekangan dan perancangan masa hadapan juga dibincangkan bagi memperbaiki dan meningkatkan keupayaan prototaip ini.

ABSTRACT

Early years are crucial to children's mathematical development. Children have shown that they are capable of mathematical thinking and knowledge as early as three years old. Technology can support and enhance the teaching of mathematics for children by providing rich and fun learning environment. Computers can enhance children learning and allow children to explore without fear of failure. Interactivity helps children to focus on the content of input material because of its capability to provide feedback or reflect upon what children have done. The purpose of the project is to develop an interactive website for teaching children mathematics. A prototype system called Teaching Children Mathematics or TechMa is developed using Macromedia Authorware 6.0 and Microsoft FrontPage 2000. This prototype is intended for children from 3 to 6 years old, parents and teachers. Interactive Mathematics Website for Children is hoped to be able to attract children in learning mathematics at the early age. Limitations and recommendations are also discussed and presented for future enhancement of the prototype.

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CHAPTER 1

INTRODUCTION

The way of teaching mathematics nowadays has changed from traditional method when we used chalk and blackboard to modern technology for example, computer. According to Adams and Burns (1999) we learn in many ways. Computers and other technology that can contribute in learning can be used to help student understand about their world. It is the same for teaching mathematics whereby there is a lot of application that has been developed to help student from the preschooler through university to learn and understand mathematics.

Mathematics has a big role in our life. However many students dislike mathematics because of its complexity and a lot of formulas that need to be memorized. This scenario can be improved if they are exposed at an early age that learning mathematics can be fun and easy. If they have a good exposure in using mathematics at an early age, perhaps they will not have problems in future.

For young children, to make learning mathematics fun, understandable and easy for them, an interactive and graphical application should be developed. It is better if we can

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