

MOBILE-MATH: AN EXPLORATION OF MOBILE LEARNING TO ENHANCE
STUDENT PERFORMANCE IN HIGH SCHOOL MATHEMATICS



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ABSTRACT

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The failure rates for mathematics in the Caribbean are very high. Teachers over the years have tried many different strategies to assist students, but the rate of failure still remains high. This study tries to determine if mobile learning can help students in Trinidad and Tobago to improve their performance in mathematics. It investigates whether mobile learning with game-based learning, multiple strategies and personalization can help students improve their performance. Mobile learning was used because it is an influential technology for teenagers, it is affordable and it can be used anytime and anywhere. The approach offers the student different learning alternatives such as games for practising algebraic topics, learning activities for reviewing the main concept of each topic and it also uses personalization to suggest learning activities tailored to the needs of each learner and assist them in navigating the menus. A mobile application was created to be used in the study to determine if mobile learning can be useful to students in Trinidad and Tobago. 60 secondary school students used this application for 3 weeks. The students were assessed before and after using the application, to determine if there was any effect on their performance. In order to acquire their opinions on using mobile learning for mathematics, they were asked to fill out questionnaires. This study aims to determine when is the best time to use mobile learning, if games can help students perform better and if the personalization is helpful. The results revealed that in the first two studies, there was a statistically significant improvement in performance. However, in the third study, the improvement in student performance was not statistically significant. In all three studies, the majority of the students responded positively to using the mobile learning for mathematics. These findings suggest that mobile learning can be successful in some circumstances. However, it also suggests that there is a requirement for further testing in some areas of mobile learning. These results suggest that mobile learning is successful in assisting students in learning mathematics and warrants further research in improved mobile learning scenarios.

Keywords: m-learning, game-based learning, personalization, learning mathematics with technology.