Perceived efficacy of dynamic mathematical software - a Malaysian secondary mathematics students experiences.

ABSTRACT

The use of technology in teaching mathematics have great potentials and make significant contributions to students' learning specifically in developing skills in mathematical modeling through exploration, develop logical thinking and modify strategies and assumptions through immediate feedback, work with large sets of data and learn and memorize by manipulating graphic images. Therefore, institutions should attempt to utilize dynamic software in order to add value to the education process. Transitional notions of the transmission of knowledge, skills and attitudes seem inadequate to address the dynamic changes around us (Willoughby, 2000). The use of Geometer's Sketchpad (GSP), Autograph and the graphing calculator (GC) had been implemented for the learning of mathematics in Malaysian secondary schools. Considering the,investment that the Ministry of Education has committed to the use of technology in schools, it is timely to conduct a study on the efficacy of technologies such as the GSP and the graphing calculator on students' achievement, problem solving attitudes, perceived ease of use, and anxiety. In this study, an experiential learning utilizing mathematical softwares Autographs, Geometer Sketchpad and Graphing Calculator on Quadratic Functions were conducted involving secondary students. The findings from this study indicated that integrating the use of Autographs, Geometer Sketchpad and Graphing Calculator in the learning activity benefited learners. Overall, this study has shown promising implications for the potential efficacy of the software in teaching mathematics at Malaysian secondary school level. These findings will also benefit various agencies viz-a-viz Ministry of Education, mathematics educators, teachers, curriculum developers through wider use of technology in teaching and learning. However, wider use of technological tools in teaching mathematics requires further training of manpower and resources for training of teachers who will be the end-users.