

## ***ICT use in the teaching and its Implications for professional development of pre-service teachers of mathematics.***

Mathematics is a compulsory subject at all levels in pre-university education. Due to its importance the government is committed to ensuring the provision of high quality mathematics education. Various attempts have been made in the past to improve the achievement of mathematics in schools. The most recent is seen in the New Educational Reforms of which implementation started in September, 2007. The new curriculum in Mathematics at the Senior High School (SHS) places emphases on skill acquisition, creativity and the arts of enquiry and problem solving. It aims at developing in the student the ability and willingness to perform investigations using various mathematical ideas and operations. As part of the reforms the curriculum places a lot of emphasis on Information and Communication Technology (ICT) as a tool for teaching mathematics. It is therefore, designed to meet expected standards of mathematics in many parts of the world. In spite of government efforts, mathematics has not undergone much change in terms of how it is presented. These reflect consistently in low achievement levels in mathematics among students at the high school levels.

Various studies have been conducted to explain such poor students' performance in mathematics, both pre-service and in-service programmes in mathematics predominantly reflect teacher-centered approaches to learning. Curriculum documents in this context suggest that teachers should start every lesson with a practical problem to help students acquire the habit of analytical thinking and the ability to apply knowledge in solving practical problems. More particularly the report on Developing Science, Mathematics and ICT (SMICT) education bring changes to the teacher's instructional role from presenter of knowledge and the use of drill-oriented methods to participatory teaching and learning. On a much broader note, research conducted some of the factors responsible for poor students' achievement in mathematics: poorly-resourced schools; large classes; a curriculum hardly relevant to the daily lives of students; a lack of qualified teachers; and inadequate teacher education programmes. The government recognizes the need for teacher support for mathematics teachers in various ways. He considers ICT literacy as an engine for accelerated development outlined in the Information and Communication Technology for Accelerated development

and introduced ICT into the school curriculum in September 2007 following the recommendations of National Education Review Committee Report (2002).

Mathematics teachers need any further support to be able to integrate effectively the use of ICT in their daily teaching routines remains unanswered. The overall goal of the present study was to explore the feasibility of ICT use in mathematics classrooms as part of an ongoing research project to design a professional development program for pre-service teachers.

The relevance of this study was:

1. To provide an understanding of the context of mathematics teachers in the SHS's regarding ICT integration in mathematics lessons.
2. To determine the features of an ICT intervention that fits the realities in the SHS's that can prepare pre-service teachers to effectively design and implement ICT in teaching mathematics.

### ***Potential of ICT for mathematics education***

The use of ICT in the mathematics classroom has long been a topic for consideration by mathematics educators. Some examples of ICT use in mathematics include: portables, graphic calculators and computerized graphing, specialized software, programmable toys or floor robots, spreadsheets and databases. Studies have shown that a range of portable devices exists which allow pupils to collect data, and manipulate it using spreadsheets and databases for work in numeracy. Some portable equipment also enables the study of math to move out of the classroom and to incorporate fieldwork investigations. The use of graphic calculators and computerized graphing in mathematics speeds up the graphing process, freeing people to analyze and reflect on the relationships between data.