

**MODE MARAFA**

**114-045011-10555**

**COMPUTER- BASED INSTRUCTION AND STUDENTS' ACADEMIC  
ACHIEVEMENT IN MATHEMATICS IN SELECTED SECONDARY SCHOOLS IN  
MBALE MUNICIPALITY**

**JULY 2015ABSTRACT**

Different Schools try different instructional approaches to improve the teaching of mathematics with the goal of imparting students with skills and knowledge required for secondary school-level mathematics. Computers make possible new methods of delivering instruction so that students have choices of when, where, and how they learn mathematics. The purpose of this study was to compare academic performance of students in a mathematics lesson using computer-based instruction. The study used a sample of 40 senior three students of Mount Masaba High School. The study used one group pre-test, post-test quasi-experimental study. The researcher used Mathematics Competent Based Test (MCBT), which was constructed based on the mathematics teaching curriculum and objectives of the study. The data collected were tested at significant level of .05 and analyzed using descriptive statistics and a Paired sample t-test. All the null hypothesis were rejected in this study implying that Computer Based Instruction (Drill and practice, Tutorials, Instructional games and Simulations) had a significant effect in achieving the fundamental objectives of teaching and learning mathematics (mathematics skills and competence, procedural fluency, problems solving skills and learning abilities). The study found that there was a large effect size between computer drill and practice with manipulative skills and competence and computer tutorial with procedural fluency eta squared (47%). The study also found that there was a large effect size between instructional games with problem solving skills (45%). The study found that there was a large effect size between simulations with learning abilities (31%). The study recommends that computer based instruction should be used in secondary schools. In order to make this possible Mount Masaba High School should collaborate with the Ministry of Education to make it mandatory for all classes in secondary schools to integrate computer-based instruction in Mathematics curriculum.