

**EFFECTS OF TEACHING AND LEARNING RESOURCES ON THE  
ACADEMIC ACHIEVEMENT OF FORM FOUR STUDENTS IN  
MATHEMATICS: A CASE OF PUBLIC SECONDARY SCHOOLS IN  
MUKURWE-INI DISTRICT**

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**A Thesis Submitted to the Faculty of Education and Social Sciences in  
Partial Fulfillment of the Requirements for the conferment of  
the Award of the Masters Degree in Education Leadership and  
Management of Kenya Methodist  
University**

**June, 2013**



### Abstract

Mathematics is a key subject in the secondary education. In addition it has a practical use in many areas in life. Performance of mathematics and other science subjects in Kenya and in many other countries in Africa has remained generally poor compared to other subjects. What a person learns is not received passively; rather it is assembled or constructed by the learner actively engaging in the learning process. The purpose of this study was to find out whether availability and use of teaching-learning resources in the teaching of mathematics has any impact on the performance. The researcher intended to find out whether teaching resources such as CDs, Computers, models, actual objects such as cartons, projectors and textbooks are available in secondary schools. In addition, the researcher wanted to find out to what extent the resources are used in the teaching process and their effect if any on the performance of mathematics in internal and external examinations. Literature review in this study was based on three sub-topics namely: teaching and learning of mathematics, importance of teaching learning resources in the teaching learning process and the performance of mathematics in examinations. The researcher made use of descriptive survey research design and the study was limited to public secondary schools in Mukurwe-ini district. The research instruments that were used are interview schedules, questionnaires, and document analysis. Data regarding teaching resources was gathered using questionnaires administered to students and from teachers and Principals using interview method. Data on performance of mathematics in internal exams and in the KCSE examination was collected using relevant documents from the schools and the District education office. The qualitative data was analysed by thematic analysis method. The main themes or topics were identified and summarized. Quantitative data was analyzed using the statistical package for social sciences (SPSS). In both cases, data was presented using appropriate diagrams such as tables, bar graphs and piecharts. The study established that teaching learning resources for mathematics are available in secondary schools. It was found that majority of the students have a geometrical set, a calculator and a mathematical table. The study also established that there are textbooks in the ratio of one book to two students. According to the study, teachers of mathematics make use of the teaching resources fairly adequately. Performance of mathematics is poor as revealed by the study. It was found that mathematics is the poorest performed subject in both internal and external examinations. The study established that proper use of teaching resources in the teaching learning process could improve the performance of mathematics. From the findings of the study various recommendations were put forward. These were that the Ministry of education should provide more funds for the purchase of more resources, organize more capacity-building workshops for teachers and revise the syllabus with a view to making it shorter. All education stakeholders should work towards creating a positive attitude towards mathematics according to the study. Areas suggested for further research based on the findings of the study are that the research should be extended to private schools, the research to be done over a wider area and to also address other factors affecting performance.