

**A STUDY OF COMPUTER INTEGRATED EDUCATION
IN SECONDARY SCHOOLS
IN NYANZA PROVINCE, KENYA**

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DECLARATION

I declare that this research report handed in herewith for the degree of Doctor of Philosophy at the University of Pretoria is the researcher's independent work. It has not been submitted for a degree or examination before in this or any other university.

FLORENCE Y. ODERA



21 day of 3 2002.

DEDICATION

This work is dedicated to my late parents, Andronico and Nerea, who inspired and motivated me to love education and believed in the education of girls as a catalyst to better family living.

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ABSTRACT

This study is about computer-integrated education focusing on public secondary schools in Nyanza Province, Kenya. It is concerned with the investigation of issues involved in the implementation of computer technology in secondary education. The purpose of the study was to investigate how computers are used in schools and to provide evidence on the obstacles that inhibits effective implementation of computers in teaching and learning. It examined government policy, curriculum guidelines, secondary school computer policies and the school departmental policies regarding the use of computers in the classroom. A review of relevant literature explored the use of computers in teaching and learning in developed and developing countries.

Data were collected from Officers in the Ministry of Education, the Director and a Curriculum specialist at the Kenya Institute of Education (KIE) using structured interviews, from Principals and Heads of Department, using questionnaires in order to obtain qualitative and quantitative data. A semi-structured interview was also used for in-depth investigation with computer teachers. The data collected were analyzed through the use of descriptive statistics and tabulation. A sample of two Senior Education officers, two Curriculum Specialists, 25 Principals, 89 Heads of Department and 20 teachers participated in the investigation representing rural, urban and suburban areas.

It was established from the data obtained that the Kenya Government formulated a policy and supports the use of computers in secondary schools but there was no written policy document or guidelines circulated to schools for the implementation of the policy. It was further revealed that the government had no funds for purchasing computers for schools. Further results indicated that KIE had developed a Secondary Computer Syllabus and distributed it to some secondary schools, but no evaluation was done to assess the effectiveness of computer education in schools.

Most of the Principals reported having a computer policy and practiced whole school integration of computers in education, and using computers to teach computer literacy, traditional subjects and in administrative work. It was also found that a few HODs had departmental policies for the use of computers and were applying computer technologies in the teaching of the traditional subjects such as Accounting, English language, Mathematics and Science Education. Further more, computer teachers saw themselves as competent with computer literacy skills and taught students word processing, spreadsheets, database and programming. They were less confident to integrate computers into traditional subjects, although some of them integrated computers into various subject topics.

Barriers to computer integration into traditional subjects that were identified by the participants as lack of teacher training in the use of computer technology in the teaching of subjects and lack of adequate computers and lack of suitable software. The study suggests that systematic teacher preparation at pre-service and in-service course would facilitate effective integration and use of computers in teaching and learning. Finally, the study identified various limitations and makes suggestions for further research direction and recommendations for improvement and immediate action. A model of re-training of teachers is proposed to assist Principals of schools in the task of staff development in CIE.

KEY WORDS

Policy

Curriculum

Evaluation

Implementation

Secondary Computer Syllabus

Computer Integrated Education

Computer literacy

Teaching and learning

Qualitative and quantitative studies

Software application

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LIST OF ABBREVIATIONS

ACCE	-	Australian Council for computer Education
ACE	-	Advanced Certificate in Education
BA	-	Bachelor of Arts
BEd	-	Bachelor of Education
BSc	-	Bachelor of Science
BOG	-	Board of Governors
CAD	-	Computer Aided Design
CAL	-	Computer Assisted Learning
CBI	-	Computer-Based Instruction
CD	-	Curriculum Development
CIA	-	Computer Assisted Education
CIE	-	Computer Integrated Education
COL	-	Commonwealth of Learning
DEO	-	District Education Officer
DfEE	-	Department for Education and Employment
ERIC	-	Educational Research Information Center
HOD	-	Heads of Department
ICT	-	Information Communication Technology
IMF	-	International Monetary Fund
IT	-	Information Technology
KCSE	-	Kenya Certificate of Secondary Education
KIE	-	Kenya Institute of Education
MBL	-	Micro-computer-based Laboratory
MOE	-	Ministry of Education
NCES	-	National Center for Education statistics
NCET	-	National Council for educational Technology
NGO	-	Non Governmental Organization
OTA	-	Office of Technology Assessment

PDE	-	Provincial Director of Education
PTA	-	Parents Teachers Association
SAP	-	Structural Adjustment Programme
TLTC	-	Teachers Learning Technology Competencies
TTM	-	Teachers as Trainers Model
UK	-	United Kingdom
UNESCO	-	United Nations Educational Scientific and Cultural Organization
USA	-	United States of America