



Original Research Article

Students' perception on integration of computers in classroom teaching in public secondary schools in Nyamira District, Nyamira county, Kenya

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The purpose of the study was to investigate students' perception on integration of computers in classroom learning in public secondary schools in Nyamira district, Nyamira County, Kenya. This study drew inspiration from Diffusion of Innovations (DoI) Theory. A survey research design was adopted in conducting the study. Descriptive survey design was adopted for this study because of its appropriateness in seeking to obtain relevant information that describes existing phenomena and to find facts that yields accurate information. This study targeted secondary school students of public secondary schools in Nyamira district, Nyamira County, Kenya. The researcher used systematic and simple random sampling techniques to select the study sample. To achieve representativeness the researcher decided to randomly draw thirty percent of the public secondary schools in each division of the district to contribute towards the study sample. Two hundred participants were selected as the sample or the study. Data was collected by the use of questionnaires. Data analysis was done using descriptive statistics mainly frequencies, percentages and tables with the help of Statistical Package for the Social Sciences (SPSS) program. The results of the study showed that a majority of the students who participated in the study had positive perception toward computer integration in teaching. In order to improve students' perception on computer integration, it was recommended that they should be encouraged to keep up positive perception of computer integration because it assists them to learn at ease. This can be done by introducing computer integration at a tender age such as at the primary school level.

Key words: perception, students, computer, learning

INTRODUCTION

Computer technological development must occur in our schools if teachers are to prepare students for a competitive global market place. Kenya's former Minister of Education, Prof. Sam Ongeri said that students in third year and fourth year in secondary schools would be able to access learning materials in digital format before the end of 2011/12 financial year. He said that the development at its advanced stage would complement part of education and access through modern technology. He then observed:

"We expect Kenya Institute of Curriculum Development (KICD) to complete developing content for third and fourth

year of secondary school before end of June, 2012. Teachers and students should seize this transformation to enrich education standards in the country. I am proud that my Ministry through KICD is already ahead in this area of electronic mass media educational content. I therefore affirm the Ministry's commitment to support the Institute with required resources, policies and legislations to reach greater heights." (Obura, 2012).

In the same paper quoted above, the Kenya Institute of Curriculum Development (KICD), the body charged with the digitization process said it had completed materials for

students in their first and second year in secondary schools in the 12 subjects alongside primary school content from primary four to primary seven. KICD is tasked with the development of key programmes by laying emphasis on science and technology. The Institute has instituted Vision 2030 flagship projects to realize these strategies. In 2011, KIE unveiled a three year project that would support full integration of ICT, computer inclusive, in Kenya's education system.

Education systems around the world are to use computers to teach students the knowledge and skills they need in the 21st century. Computers have the potential to transform the nature of education. Computers provide an array of powerful tools that may help in transforming the present isolated, teacher-centered and text bound classrooms into rich student focused interactive knowledge environments. Teachers in public secondary schools must make use of computers to teach their students. In this way, they will move towards the goal of transforming the traditional paradigm of teaching. Teachers do not need to learn about computers. They need to learn how to use computers to enhance their learners' understanding and critical thinking skills. Enhancing basic information and communication skills like reading, writing, and speaking should be the focus of using computers in the classroom (Duffy and Cunningham, 1996).

Oketch and Asiachi (2002) states that "the teacher is the kingpin in any educational innovation. No curriculum can achieve its objectives without good teachers. The quality of curriculum implementation process is of paramount importance. Curriculum is only as good as the quality of its teachers."

Bransford (2000) is of the view that computers have the potential to support education across the curriculum and provide opportunities for effective communication between teachers and students in ways that have not been possible before. He further states that computers have the potential to be influential in bringing about changes in ways of teaching. Computers can play various roles in learning and teaching processes. According to Bransford (2000), several studies have reviewed the literature on computer and teaching and have concluded that it has great potential to enhance student achievement. Wong (2006), points out that computer can play a part in supporting face-to-face teaching and learning in the classroom.

The Kenyan government is recognizing the effectiveness of emerging technologies, computer inclusive, in establishing new goals and implementing innovative pedagogical methods. Thus, after several years of effort, Kenya promulgated a national ICT policy in January 2006 that aims to improve the livelihoods of Kenyans by ensuring the availability of accessible, efficient, reliable and affordable ICT services. The national policy has several sections. One of the sections includes information technology. It is this section on information technology that sets out the objectives and strategies pertaining to ICT and education. The relevant objective in this section states that government will encourage "....the use of ICT in schools,

colleges, universities and other educational institutions in the country so as to improve the quality of teaching and learning" (Ministry of Education, 2006). The related strategies, under the heading "E-learning," are to:

Promote the development of an integrated e-learning curriculum to support ICT in education.

Promote distance education and virtual institutions, particularly in higher education and training.

Promoting the establishment of a national ICT center of excellence.

Provide affordable infrastructure to facilitate dissemination of knowledge and skills through e-learning platforms.

Promote the development of content to address the educational needs of primary, secondary, and tertiary institutions.

Create awareness of the opportunities offered by ICT as an educational tool to the education sector.

Facilitate sharing of e-learning resources between institutions.

Exploit e-learning opportunities to offer Kenyan education programs for export.

Integrate e-learning resources with other existing resources.

In the Education Sector, the Ministry of Education developed a Kenya Education Sector Support Program (KESSP) in 2005 that featured ICT as one of the priority areas with the aim of mainstreaming ICTs into the teaching and learning process. The National ICT Policy embedded this intent as a national priority and provided the impetus for the ministry to develop its sector policy on ICT in Education. The ministry moved quickly and, in June 2006, introduced the National ICT Strategy for Education and Training (Ministry of Education, 2006). This document is referred to as the ICT policy for the education sector, and consists of the following components, each with its own statement of strategic objectives and expected outcomes:

- ICT in education policy
- Digital equipment
- Access and equity
- Technical support and maintenance
- Harnessing emerging technologies
- Digital content
- Integration of ICT in education
- Training (capacity-building and professional development)
 - Research and development

The Ministry of education was given the mandate to lead the monitoring and evaluation of the strategy's implementation, guided by government overall policies on education and ICT, specific education strategic documents for implementing its mandate, and global goals such as Education for All (EFA) and the Millennium Development Goals (MDGs). This mandate is carried out through a ministerial ICT committee that meets monthly and reports quarterly on progress. The committee is chaired by the permanent secretary and supported by the ministry's ICT

Table 1. Students' academic performance from 2008-2010

Year	District Mean Score
2010	4.061
2009	3.679
2008	3.470

Units. It has representation from stakeholders involved in implementing the strategy and mobilizing resources such as donors and private sector partners (Ministry of Education, 2006). The implementing agencies include The Semi-Autonomous Government Agencies (SAGAs) of the ministry, The Network Initiative for Computers in Education (NICE), a consortium of NGOs involved in ICT in the education sector, Individual NGOs that meets specified criteria, Civil society organizations involved in ICT in education activities and Academia and/or individuals with experience in ICT in education projects.

Another key part of the implementation strategy is the Kenya ICT Trust Fund, formed in 2004, with the aim of spearheading ICT initiatives in education. Membership is open to public sector organizations such as ministries and other government institutions, private sector companies, donor partners, civil society, as well as academic and other educational institutions. In general, the objective is to facilitate public-private partnerships (PPPs) that will mobilize and provide ICT resources to Kenyan public schools and community resource and learning centers. It hopes to achieve the following goals over the next five years: Resource mobilization for delivery of ICT infrastructure to schools, E-readiness assessment for secondary schools, tertiary institutions, and primary schools, Development of a portal for ICT information sharing and Establishment of a national computer assembly center.

Member partners can apply for project funds to implement various ICT components that are outlined in the Kenya ICT Trust Fund's objectives. Each university in Kenya has developed its own ICT policy. However, the three East African higher education regularity agencies, including the Kenyan Commission for University Education, signed a memorandum of co-operation in July 2006 intended to streamline and harmonize accreditation and quality assurance practices and procedures in the region. This is expected to enhance access to quality higher education and accelerate response to new opportunities for e-learning, use of virtual universities, and other modes of distance and open learning. This is an indicator that the government, through the Ministry of Education is making an effort to introduce ICTs into the teaching and learning process in secondary schools as per the ICT policy for Education of 2006, whereby one of the objectives is to integrate ICT in education, computer inclusive. Computer integration in curriculum delivery is actually meant to improve the academic standards which are deteriorating in public secondary schools in Nyamira district, Nyamira County. The recent

years have shown little improvements according to the KNEC reports as shown in Table 1. Even though there was a little improvement, the academic performance was still poor.

However, the researcher carried out reconnaissance study to find out the status of computer integration in public secondary schools in Nyamira district, Nyamira County. According to that reconnaissance study, computer integration had not taken off. It was for this reason the researcher had to find out students' perception of computer integration in classroom learning in public secondary schools in Nyamira district, Nyamira County.

Statement of the problem

Computer integration in the classroom is the application of technology to assist, enhance and extend student knowledge. Computers in education mean more than simply teaching learners on how to use computers. Computer is a means of improving education and not an end in itself. Thus computers should be used to promote information literacy- the ability to access, use and evaluate information from different sources in order to enhance learning, solve problems and generate new knowledge. Computers determine more than anything else, the quality of our education.

However, the researcher carried out reconnaissance study to find out the status of computer integration in public secondary schools in Nyamira district, Nyamira County. According to that reconnaissance study, computer integration had not taken off. It was this reason the researcher had to find out students' perception of computer integration for learning in public secondary schools in Nyamira district, Nyamira County. Even with the Kenya government initiative in place, computer integration for curriculum delivery in public secondary schools in Nyamira district had not taken place. In view of the scenario outlined in the background to the problem, the problem as the researcher saw it was whether students could learn by use of computer integration in their secondary schools. So the question was what was constraining computer integration in public secondary schools in Nyamira District, Nyamira County (Table 2). The main emphasis of this study was to find out students' perception of computer integration in learning in public secondary schools in Nyamira District, Nyamira County.

RESEARCH DESIGN AND METHODOLOGY

Introduction

The purpose of the study was to investigate students' perception of computer integration in learning in public secondary schools in Nyamira district, Nyamira County. Described in this chapter are study area, research design, target population, the sampling procedures and the sample size, data collection procedures, and research instruments.

Table 2. Distribution of secondary schools in Nyamira district

Division	No. Of Secondary Schools	No. Of Schools Drawn
Nyamira	28	12
Nyamaiya	18	8
Total	46	20

The validity, reliability of data collection instruments and methods of data presentation and analysis are also explained.

The Study Area

The study was conducted in Nyamira district, Nyamira County, Kenya. Nyamira is one of the four districts in Nyamira County. It borders Rachuonyo to the West, Borabu to the East, Nyamira North to the North, Masaba to the Southeast, Manga to the South and Marani to the Southwest. The district occupies a total area of 1,110.7 km². Nyamira district has two divisions namely; Nyamira and Nyamaiya. Nyamira division covers the large area of 633km² while Nyamaiya division occupies the small area of 477.7 km². There are 46 public secondary schools in the district (Development Plan, 2004).

The major activity done in this area is small scale farming. Tea is grown as the major cash crop and maize as the major food crop. Nyamira District was selected for the study because the researcher being a teacher in one of the secondary schools in the district had observed and realized that the quality of education in most schools was deteriorating. Therefore, with the deterioration of academic performance of students in public secondary schools in Nyamira district, Nyamira County, there is an urgent need of computer integration in teaching and learning to uphold the academic performances.

Research Design

Survey research design was adopted in conducting this study. Survey was appropriate because it is concerned with describing, recording and reporting conditions that exist (Kothari, 2008). Survey method is widely used to obtain data useful in evaluating present practices and providing bases for decisions (Engelhart, 1972). Survey design was adopted for this study because of its appropriateness in seeking to obtain relevant information that describes existing phenomena and to find facts that yields accurate information (Koohang, 2009). The researcher aimed at getting accurate information on teachers' perception of computer integration in teaching in public secondary schools.

Target Population

The target population consisted of 46 public secondary schools. It also consisted of 200 form four students from 46

public secondary schools in Nyamira District, Nyamira County. The reason for selecting form 4 students was that they had competence to comment on computer integration in curriculum delivery.

Sampling procedure and Sample Size

For the purpose of collecting data, the following sampling techniques were employed. To sample out the required number of public secondary schools in the district, a systematic random sampling method was used. The choice of this method was on the basis of its simplicity and minimal chances of error (Kothari, 2008). From the 46 public secondary schools in the district, twenty public secondary schools were sampled out using the systematic sampling technique. This was done by assigning each public secondary school a number. These numbers were then arranged in ascending order. From here, every second school was picked until a pre-determined total number of schools (20) were selected for the study. The researcher came up with a sample of 20 public secondary schools.

For principals, purposive sampling technique was used. For the case of students, simple random sampling was employed; where each category of respondents was written 'Yes/No' on a piece of paper folded and picked out. The individuals who picked out 'Yes' participated in the study. As a result of this, the researcher came up with a sample of 200 form four students from the total of 1804 students. Two hundred participants was the sample size for the study.

Data collection

The Research Instruments

Questionnaires

The questionnaires contained both open and close ended questions. Questionnaires are widely used to obtain information concerning attitudes and opinions. Isolating specific questions for consideration tends to objectify, intensify and standardize the observation that respondents make (Nsubaga, 2000). Questionnaires were administered to teachers. The questionnaire was divided into two parts. The first part, they were to state their background information on gender. The second part consisted of open statements and likert scale type of questions which were to lead to the identification of discrepancies between the desired and actual practice of computer integration in learning. This was meant to enable the researcher

perception of learning using computer integration and those learning without computer integration. Their findings revealed that students have strong perceptions of computer integration in the learning process in schools because most students preferred learning using computer integration to learning without using computer integration.

The findings of this study agree with the findings of Duffy and Cunningham (1996) who established that students see computer integration as a method which assist them to utilize multiple ways of solving academic problems and justify their solutions. The findings of this study are in line with the findings of Kozma, (2004b) who noted that students see computer integration as a way of acquiring skills that they will need to enter the global workforce and get better jobs upon graduation. They further noted that they see computer integration in learning as a means of improving their communication skills.

Summary of the finding of the study

The major finding of this study was highlighted, discussed and pegged to earlier studies. The similarities between the finding of this study and those of the earlier studies were stated and explanations for the findings offered. From the data presented, analyzed, interpreted, the following major finding was established: Students' perception of computer integration was encouraging for a majority of them indicated a positive perception of computer integration in learning.

CONCLUSION AND RECOMMENDATION

Conclusion

This research was a study of students' perception of computer integration in curriculum delivery in public secondary schools in Nyamira district, Nyamira County. The study was guided by the following main objective: To find out students' perception of integration of computers in classroom learning in public secondary schools in Nyamira district, Nyamira County. The result of the analysis of the study led to the conclusion that students had positive perception of computer integration in learning.

Recommendation

Though it is evident that computer integration in curriculum delivery has got challenges, we cannot ignore the truth that computer integration in curriculum delivery can make learners' education more productive. It is therefore recommended that computer integration in curriculum delivery be emphasized in public secondary schools. This can be done by observing the following: In order to reinforce students' perception of computer integration in learning, they should be encouraged to keep up positive perception of computer integration for it assists them to learn at ease. This can be done by introducing computer integration at a tender

age such as at the primary schools.

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