CLOSING THE CHASM: ARE SECONDARY SCHOOL TEACHERS IN KENYA USING ICTs EFFECTIVELY TO DELIVER CURRICULUM CONTENT?

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ABSTRACT

Introduction

This study investigated the extent to which teachers in some selected secondary schools in Kenya use ICTs to deliver curriculum content. Although ICT infrastructure has been enhanced in most schools for the purpose of improving the quality of teaching and learning, sufficient research has not been carried out to establish if indeed there is pedagogical integration, and if so, to what extent.

In January 2008, the Kenya Government introduced free secondary education. This is in line with the MDGs (Millennium Development Goals) set by the United Nations. The outcome has been mass enrollment overcrowded classes. The use of computer software like the MS Power Point could be used to project classroom learning material effectively. The Southern African Department of Education uses "technology enhanced learning" as a phrase to describe the use of technologies in teaching and learning environments for any education-related purpose (SAIDE Report, 2001). This is the perception this study will adopt to describe the use of ICT in teaching.

Although most secondary schools in Kenya have ICT facilities, the extent to which they are used for effective instructional purposes has not been empirically established. This study focused on three objectives namely: to evaluate the extent to which secondary school teachers use ICTs to deliver curriculum content; to establish the type of computer softwares used and to determine the difference in the use of ICT in instructional delivery between schools.

Literature Review

A cursory glance at African secondary schools reveals the widespread utilization of ICT. However, research evidence on its integration in teaching and learning processes is scanty (PanAf, 2006:13). Baylor and Ritchie (2002), argue that regardless of the amount of technology and its sophistication, technology will not be used unless Faculty members have the skills, knowledge and attitudes necessary to infuse it into the curriculum. This is supported by Gakuu (2006) who found no significant difference in University lecturers' attitude towards adoption of ICT among disciplines and that the adoption rate would be enhanced if the lecturers' issues of concern were addressed. Karsenti and Larose (2001) also observed that a major obstacle to adequate use of technology across all grade levels and the curriculum is the lack of a critical mass of teachers who feel comfortable in using technology.

In their study of secondary schools in Kenya, Wims and Lawler (2007) found that educational software, lack of Internet access and e-mail were lacking in schools. At the same time, 35-40% of secondary school teachers had never used a computer. They recommend staff training, mainstreaming of ICT across the curriculum and provision of adequate ICT equipment as ways of enhancing integration of ICT in curriculum delivery.

It is apparent that use of ICTs enables access to learning as they can solve many of the educational challenges faced by education systems in developing countries. When teachers use it as a teaching tool, it improves instructional delivery, hence making learning more effective. However, for this to happen, teachers must be ready to acquire the knowledge, skills and attitudes needed to use ICTs. In addition, educational policy makers need to appreciate the need to motivate teachers to use ICTs in the learning process.

Research methodology

This study used the mixed method approach where both qualitative and quantitative methods were used to collect data. The data was drawn from the observatory of the Pan African Research Agenda on the Pedagogical Integration of ICT Project (PanAf) (December, 2006). The data was collected from multiple sources: interviewing the teachers, school managers and ICT advisors.

Five secondary schools in urban and rural areas were targeted for study. The indicators of ICT integration in curriculum delivery were: the frequency of ICT use by the teachers for academic purposes; average; types of ICT use by teachers; types of software and number of courses taught using ICT. The data was analyzed qualitatively using narratives guided by the research objectives,

Research Findings

Five secondary schools were surveyed in the study: St. Joseph's High School, Githunguri is a rural based government assisted public boys school with 14 computers and 800 learners. The school has 32 teachers of whom 25 are female and 7 are male. While all the 32 teachers have access to the computers, only two use them for academic purposes. It was also apparent that only the subject of Computer Studies is taught using computers. This confirms an earlier observation by Wims and Lawler (2007) that the computer is the object of study rather than a tool for teaching and learning. Except for preparing lesson plans, there is no integration of ICT in the teaching and learning of other subjects.

Musa Gitau Secondary School is also a rural based, mixed government assisted public school, with 21 teachers, 11 female and 10 male. The school has 20 computers and none of them is dedicated to the teachers. All 426 students have access to the computers. The school has allocated 15 hour per week for computer studies where the computer is the object of study. Only one female teacher had completed 1-50 hours of professional development which included ICT training. Out of the eight subjects offered in the school, none of them is taught using any form of ICT. The teachers do not have access to the computers and currently they do not use them for any academic purposes. They are exclusively for students.

The scenario changes at Uthiru Girls Secondary School, The Aga Khan High School and Enna School where ICT integration in teaching and learning is evident. At Uthiru Girls, five subjects have been integrated with ICT. Uthiru Girls is a semi-urban school with 18 functional computers, 2 of which are exclusively for teachers. The school has 500 learners and 35 teachers: 25 female and 10 male. Fourteen teachers had more than 50 hours of professional development that included ICT training. The Principal, The Deputy Principal and Heads of Departments have all had some ICT training. Unlike in most schools, the school principal is ICT literate and holds a Higher National Diploma in Information Technology. The school also has a fully qualified computer teacher. The teachers use computers to prepare lesson plans, teaching notes and to evaluate students' academic

performance in class. The School is connected to the Internet and this enables the teachers to access teaching materials, hence enriching their teaching. The students are encouraged to use the local network to share questions and answers with the teachers. Power point presentations are used and according to The Principal this has made teaching and learning more exciting and easy. The school downloads the most current teaching materials from the Internet hence saving on the cost of purchasing textbooks. The main computer software used include MS-word, MS- Excel, MS-power point, MS- Quick Books and Encarta.

The Agha Khan High School, a private secondary school has 350 learners and 23 teachers: 11 male and 12 females, all of whom have completed at least 1-50 hours of professional development, which included ICT training. The school has 31 computers that are all accessible to the teachers and students. To teach in this school, a teacher is required to be computer literate. It is apparent that teachers use computer to prepare lesson plans, lesson notes, evaluate students academic performance and for general database. The science teachers teach the science subjects in the computer laboratory using power point presentations and the mathematics teachers use cyber schools for teaching mathematics. All the five school managers are trained in the use of ICT.

The Enna School is a private girl's secondary school in a semi –urban location. The school has 100 female students and 30 computers. 25 of them are accessible to the teachers. The school has 10 teachers (six males and 4 females). The entire ten teachers have completed 1-50 hours of professional development, which included ICT training. Two male teachers have completed over 50 hours of professional ICT related training. The school teaches 12 subjects one of them being Computer Studies. The teachers use the computers to prepare lesson plans, prepare lesson notes, evaluate students' academic performance and to search information from the Internet. To perform these tasks the school has installed MS-word, MS- Excel, Encarta and MS power point software. The teachers indicated that power point presentations have made teaching and learning easy and enjoyable.

Discussions

The findings from the five schools indicate differences related to ownership of the school, location of the school, professional training of the teachers that included ICT and ICT skills of the school manager. A comparison between the privately owned schools (Aga Khan and Enna) and the publicly owned (St. Joseph's and Musa Gitau) indicates that private schools have deliberate policies to integrate ICT in curriculum development. Aga Khan for example hires teachers with ICT skills because they are expected as a matter of policy to integrate ICT in their teaching. Enna on the other hand can only attract students by adding value to their teaching so ICT integration is again encouraged as a matter of policy to improve performance and attract students.

Except for Uthiru Girls, the other two public schools have not integrated ICT in their teaching and learning processes although they have computers. This suggests that there is a lack of clear policy or will to integrate ICT. Other challenges could be lack of training opportunities, lack of encouragement from the school management and technophobia. However, the high level of ICT integration at Uthiru Girls, which is also a public school, seems to be as a result of the School Principal, whose ICT skills are high. It appears, therefore, that when the school manager is conversant with ICT, they encourage its use in many areas including teaching and learning irrespective of whether the government has given

a clear policy or not. This underscores the importance of leadership in implementing change.

Implications for policy, practice and future research

The results show that the integration of ICT in curriculum delivery in Kenyan secondary schools is influenced by the ownership of the school, the professional training of teachers in ICT, the location of the school and the school manager's level of ICT skills. While private schools seem to have clear a policy on ICT integration, public ones have none. This implies that the Kenya Government should develop and implement an ICT policy on education, which so far has not been developed although it is one of the objectives in the Education Strategy on ICT of 2006. The other practical implication of these findings is the need to equip head teachers of secondary with ICT skills because they can act as change agents by encouraging and driving the adoption of ICT in teaching and learning processes. Future research should focus on the attitudes of learners and parents on the use and impact of ICTs on learning.

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