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USE OF COMPUTERS FOR TEACHING AND LEARNING BUSINESS STUDIES AMONG SECONDARY SCHOOLS IN WESTLANDS DISTRICT, NAIROBI, KENYA

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ABSTRACT

Computers have permeated our everyday life in ways that were inconceivable forty years ago. These multifaceted machines have changed the manner in which we do everything including teaching and learning. In the developed world, using computers in classrooms has proved to be a meaningful experience leading to a push for provision of computers for schools in developing nations such as Kenya. Policies have been laid out and frameworks developed to cater for provision of computers in schools. The agenda of providing computers for schools is articulated in Kenya's long term economic plan - Vision 2030; where Kenya hopes to be a regional centre for research and development in new technologies. This study sought to establish the availability of computers and where they are available establish whether Business Studies teachers and learners employ them for teaching and learning purpose.

KEYWORDS: Computers, ICT, Teaching, Learning

INTRODUCTION

Background of the Study

At the advent of the computing technology, computers were very large, complex and expensive machines that could hardly find a place in the classrooms. However, today's computing devices are highly portable and can easily be put together with other Information and Communication Technology (ICT) devices such as the Liquid Crystal Display (LCD) projectors to change the learning environment for the better within a very short period of time. The role of computers in teaching learning is simplification of reality, often with exaggerated cause-effect linkages which can be very effective in a teaching context (Garson 1987). Availability of computers to teachers and learners is paramount to their successful adoption as teaching tools. However, while it is true that computers have the ability to enhance the learning environment; they are not a replacement for the teacher and are therefore tools that teachers and learners can use.

The assumption that computer technology has become an essential part of the basic school curriculum was summed up in a report of the United States of America Department of Education (1969) where computers in the classroom were referred to as the 'new basic' of American education and the internet as the 'new blackboard' of the future. Ultimately, teachers decide the resources they will employ during teaching and learning in their classrooms. Normally the tools used by a teacher in a classroom environment are those that he or she perceives to work in his or her favour and those that the teacher is familiar with. In other words, the attitude and familiarity of a teacher towards a teaching tool determines whether such a tool gets to the classroom environment or not.

In Kenya a study done by Wabuyele (2006) showed that teachers and school administrators feel that the use of computers in Kenyan classrooms is worthwhile. All teachers whether starting out in the teaching career or with years of

experience can benefit from the use of computers and in the wider concept the use of Information and Communication Technologies (ICTs) in teaching and learning. New teachers can gain access to a many resources for teaching and learning as well as learn a lot through their interactions with other teachers locally and abroad via the internet. Those who have been teaching for long can also benefit in the same way plus get an opportunity to share their rich experiences with other teachers indiscriminately via the internet.

In Kenya, there are no documented guidelines that call for teachers to teach using computers or its related technologies. Computers are provided in schools but it is upon the teacher to choose to use or not to use them for pedagogical purpose just like any other teaching tool that the teacher may have access to. However, there is an ICT policy in Kenya that came into being in the year 2006 where the government recognized that it is necessary to strengthen and streamline ICT training through promoting ICT in education at primary, secondary, tertiary and even community levels. Although many computers have been donated to schools by the private sector and Non-Governmental Organizations (NGOs), their availability to teachers and utilization by teachers and learners in Kenyan schools is worth investigating.

Availability of Computers to Teachers and Learners of Business Studies in Schools

The use of the available computers to teachers and learners in schools determines the role that computers play in the classroom. Murdock & Desberg (1994) saw that students can use computers to break out of the walls of the classroom to share and have access to all the wonderful information and experience that is now possible. This paper sought to establish whether the Kenyan learners have access to this wonderful experience via their teachers in Business Studies as a subject. Although what gets learned from the use of computer in the classroom is not easy to evaluate, Candau et al (2003) agrees that access to computers can ignite students' thoughts and eventually move them towards a better learning experience. It is important to verify whether conclusions such as these hold in the Kenyan context.

Willoughby & Wood (2008) argue that the past several decades have produced rapid advances in computer technology and increased access to computers in both developed and developing nations. According to global statistics, schools are becoming increasingly well equipped with computer hardware. In Kenyan secondary schools computers have been provided by the government supported by parents, development agencies such as NEPAD e-schools programme and the private sector including organizations such as banks and even airlines. The non-governmental support takes the form of donations of computer hardware from the corporate world or funding of the acquisition of hardware and software.

Teachers and Learners Attitudes towards the Use of Computers in Schools

Christensen (2002) clearly saw that teachers are the main gatekeepers of educational innovations into classrooms. Majority of learners' will obey and do what the teacher requires in the Kenyan culture. This therefore means that the success of any initiatives to implement technology in an educational program depends strongly upon the attitude of the teachers involved as seen by Yuen, Law & Chan (1999). Osondo et al (2010) showed that positive attitudes toward computers are positively correlated with teachers' extent of experience with computer technology. Familiarity with the use of computers in the classroom lessens anxieties and fears towards their use and increases confidence for both teachers and learners. The saying that practice makes perfect holds in relation to the use of computers in schools.

The confidence a teacher possesses in using computers together with accessibility of computers therefore greatly influence his or her effective implementation of the technology in the classroom. Positive teacher attitude toward computers is recognized as a necessary condition for effective use of all information and communication technology in the

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classroom of today. This research paper sought to ascertain whether the conclusions that have been drawn by researchers in other parts of the world and especially in the industrialized world hold in Nairobi Westlands District in the teaching of Business Studies.

The General Benefits of Using Computers in Teaching and Learning

Adoption of computers for pedagogy in the developed countries has progressed well over time in terms of acquisition of basic skills in different subject areas. However, according to the Ministry of Education's National Information and Communication Strategy for Education and Training (2006), the impact of ICT on the educational goals in Kenya is still inconclusive. Nevertheless, reported observations have been: speedy opening up to new knowledge, better assessment results, improved communication and technical competence as well as decentralization in the delivery of educational services. The ministry also realizes the fact that computers have a more powerful role of increasing resources and improving the learning environment. This has been echoed by researchers such as Ivers (2003), Reid & Rushton (1985) and Carrington &Robinson (2009). These benefits can only be meaningful where a teacher sees that the learning environment (for the learner) is being improved in the same measure as the teaching environment (for the teacher).

According to Mann (2006) using computers in teaching can enhance student achievement. Undoubtedly computers do support the improvement of students' intrinsic motivation. The novelty of the technology is highly attractive to young people. Knowing the significance of motivation in learning, it is important to check whether computer use can bring about all the possible benefits. Computers have the ability to provide what text books cannot provide in all subjects Business Studies included; for example, using computers, students can easily do a project and compare data with students in far off areas through the internet. Reid & Rushton (1985) wrote that, computers could provide instant feedback which provides the learner with the individual attention that drives him or her to great heights in terms of intrinsic motivation thus students who use computers are more engaged and more independent of the teacher in the classroom.

Another benefit of using computers in the classrooms is that it prepares students for the outside world as seen by (Mann 2006). This is a conclusion worth following up because, in order to get by in today's job market one must be proficient in the use of technology – specifically computers. At the turn of the 21st Century, most jobs require skills in computer application and internet use. Educators such as teachers must prepare their students so that once done with school they will be marketable. The secondary school level is the best stage at which the use of computers must be insisted upon because learners gain independence and get to have their own identity that is different from that of the teacher and the parents. Secondary school therefore is the structure within which the use of computers should be seriously considered so as to take root and be carried into the tertiary level and eventually into the job market.

Problem Statement

Computers are useful in teaching and learning because they make teaching easier; for example computers are used in demystifying complex concepts in different subjects. Computers help students learn better by enhancing their learning environment and have the ability to increase learning resources. Availability of computers to Business Studies teachers is the first stage in the successful adoption of computers in teaching the subject in secondary schools. This is because teachers can only be competent and interested users of computers as teaching tools if such tools are available and easily accessible. Teachers will not adopt computer technologies into their instructional tasks if they are not available in the first place. There may be some challenges that hinder the use of computers in our classrooms; however, when effectively used

computers have a striking effect on teachers and learners as was concluded by Reid & Rushton (1985). But, where computers are not used effectively, they may not add value to teaching and learning. This paper therefore sought to reveal whether teachers and learners of Business Studies have considered it a worthwhile venture to use computers in teaching and learning where they are available and accessible.

Methodology

This study used descriptive survey approach. This approach enabled the researchers to gather data and report the views of the respondents as given during data collection. The study used both quantitative and qualitative approached in collecting and analyzing data. West lands District was purposively chosen because it has a diverse population that represents the general diversity of the Kenyan nation. The target population was 1,555 people made up of 23 school heads, 32 Business Studies teachers and 1500 Form three Business Studies students. Stratified sampling was used for the schools in order to represent the following strata; public versus private schools, boys, girls versus mixed schools and day versus boarding schools. Form three students were purposively chosen for this research paper because they had already chosen to do Business Studies up to Kenya Certificate of Secondary Education (KCSE) level. As for the students within each of these strata simple random sampling technique was used to select the students who answered the questionnaires. Thus a combination of sampling techniques was used to make the sample population as inclusive as possible. The sample size was composed of 8 head teachers, 8 Business Studies teachers and 300 Business Studies students totaling to a population of 316 participants.

DISCUSSIONS OF THE FINDINGS
Availability and Accessibility of Computers to Teachers and Learners

Availability of computers in schools precedes their use in teaching. School heads, teachers and students were asked a number of questions that would inform on the availability as well as accessibility of computers in schools. However, this area of the research dwelt more on the head teachers because they are recognized as the managing authority in the provision of computers for their learning institutions. Eight head teachers were interviewed on the number of computers in their schools. The pie chart below shows how they responded.
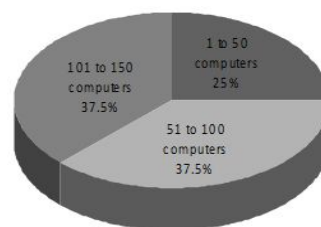

Figure 1: Number of Computers Available to Teachers and Students

The figure above shows that 100% of the head teachers have provided computers in their schools although the number varies from school to school. 37.5% have provided between 101 to 150 computers, another 37.5% have provided between 51 and 100 computers while 25% have provided between 1 and 50 computers in their schools. During the same interview, the head teachers 100% admitted that the ratio of computers to students was approximately 1:7 and was undesirable. Head teachers indicated that these computers were available to the teachers and their students in the staffrooms and computer laboratories respectively. In another question on whether the computers they have provided are

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enough; 87.5% of the head teachers admitted awareness that the computers are not enough with 62.5% saying that they were working towards achieving a one to four (1:4) computer to student ratio as recommended by the Kenyan Ministry of Education and Kenya Institute of Curriculum Development (KICD). This is realistic, given the current situation where there are three computer labs in the national schools and one or two in all the other schools. Willoughby & Woods (2008) saw that schools in developing world have increased access to computers and this has been supported by this research showing that there are computers in our schools. Worth noting also was how the heads of school acquire the computers used in schools. Table 1 below shows the response to a question on how the head teachers get the computers.

Table 1: How Head Teachers Get Computers for Their Schools

How Do You Get Computers for the School?	Frequency	Per Cent
Through donations	2	25.0%
Through partnerships	5	62.5%
Through buying	1	12.5%
Total	**8**	**100.0%**

When head teachers were asked how they acquired computers for use in their schools, 62.5% indicated that they received computers through partnerships, 25% through donations and only 12.5% received them through buying. The majority of the computers were got through partnerships; supporting what the Ministry of Education (2006) emphasized by encouraging schools to partner with other organizations to acquire either hardware and software from companies/agents or Computer for Schools Kenya (CFSK) a Non-Governmental Organization (NGO) that has gone a long way in getting computers into Kenyan secondary schools. This concurs with what the Ministry of Education (2006) realized that availability of computers in schools is supported by parents, development agencies and the private sector. Public schools in Kenya were not initially financed by the government to get computers for their teachers and learners. This is an indication that the government could take up the responsibility of providing computers to schools because it is difficult for head teachers to procure computers cheaply plus it would be cheaper for the government to buy the computers on large scale maximizing on economies of scale. Establishing a computer supply program especially for public schools would also help to achieve Kenya's vision 2030.

Teachers will use computers in the classroom in the schools where the computers are easily available. Eight Business Studies teachers one from each participating schools filled in a questionnaire for this study. One of the questions sought their opinion on the sufficiency of computers in the schools where they taught. Table 2 below summarizes their responses.

Table 2: Teachers' Opinion on Sufficiency of Computers in Schools

There Are Enough Computers in the School	Frequency	Per Cent
Strongly agree	2	25.0%
Agree	2	25.0%
Undecided	1	12.5%
Disagree	2	25.0%
Strongly disagree	1	12.5%
Total	**8**	**100.0%**

The teachers' responses were split with 50% of them agreeing that there were sufficient computers in schools and the other 50% disagreeing or undecided. There was no consensus among the teachers on whether computers are enough or not. Could the teachers being undecided indicate that they have not used the computers in their classrooms to competently decide whether they are enough or not? Another issue in the questionnaire for the teachers seemed to clarify this by asking them to respond to access to computers in the schools.

Table 3: Teachers Access to Computers

Teachers Have Access to Computers in the School.	Frequency	Per Cent
Strongly agree	6	75.0%
Agree	1	12.5%
Undecided	1	12.5%
Disagree	0	0%
Strongly disagree	0	0%
Total	**8**	**100.0%**

The findings indicated that 87.5% of the teachers agreed that they have access to computers in schools. This gave a clear indication that computers were available to majority of the teachers. They were further asked how often they access computers 62.5% teachers indicated that they have daily access to the machines in school with the rest at 37.5% saying that they could access computers 2 to 3 times in a week. This level of access is good enough for a teacher to use computers for teaching and learning. However there was need to know whether the teacher is able to carry this technology to the classroom or the access was only in the staffrooms and offices in the school. The 37.5% of teachers who had access to computers two to three times a week may be an indicator of high teacher to computer ratio in the schools where a single computer in the staffroom is for the entire staff thus not allowing daily access.

Today's learners are enthusiastic about new technologies especially those that have to do with ICT. Two hundred and forty six Business Studies learners filled in a questionnaire for this study. In one of the questions they were asked to give their opinion on whether computers in their schools were enough to be used for teaching and learning purpose. Their responses were summarized as follows:

Table 4: Students' Opinion on Sufficiency of Computers in Schools

There Are Enough Computers in my School	Frequency	Per Cent
Strongly agree	59	24.0%
Agree	95	38.6%
Undecided	13	5.3%
Disagree	54	22.0%
Strongly disagree	25	10.2%
Total	**246**	**100.0%**

When combined those who strongly agreed and agreed that there are enough computers were 62.6%. A cumulative 32.2% disagreed and strongly disagreed that the computers in schools are enough and a small percentage of 5.3% was undecided. This concurs with the opinion of the teachers as well as that of the head teachers. Although

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computers are available in schools, this study shows that they are not enough for the school population. This agrees with the findings of Tanui et al (2008) that, although computers may be present in Kenyan secondary school classrooms they are hardly enough for pedagogical purposes.

The students were asked to give a response to another statement that, students are allowed access to computers in school. Their replies were summarized as shown in Table 5 as follows:

Table 5: Students' Opinion on Access to Computers

Students Are Allowed Access to Computers for Learning	Frequency	Per Cent
Strongly agree	18	7.3%
Agree	111	45.1%
Undecided	49	19.9%
Disagree	32	13.0%
Strongly disagree	36	14.6%
Total	**246**	**100.0%**

A cumulative 52.4% strongly agreed and agreed that they are allowed access to computers in their schools while another cumulative 27.6% disagreed and strongly disagreed indicating that they are not allowed to use computers in their schools. A sizeable 19.9% were undecided on whether they are allowed access to computers in schools. While school heads are keen on providing computers to teachers and learners, their access to these machines for use as teaching and learning tools has been left hanging for the teachers to decide whether or not to use them. Some teachers encourage the use of computers by giving assignments that necessitate the students to seek access to the computers in the schools. As an observation during the interviews, the head teachers are keen on the security of computers in their schools. The computer laboratories were well secured and students needed to be with their teachers in the laboratories at all times. It is the opinion of the researchers that such strict measures prevented some students from having access to the computers when their teachers were not available.

Utilization of Computers by Teachers and Learners in Schools

After establishing the availability of computers in the schools this paper sought to know whether they were used for teaching and learning of Business Studies which is an elective subject in Kenya's 8-4-4 system. All the three levels of participants; teachers, students and the school heads had their input in this area. However, the emphasis was on the teachers who are the real implementers of teaching technology and tools in the classroom. This is because although the heads of schools may have provided the computers, they can not take them to the teaching and learning environment for the teachers. The students too can not have computers in the classroom without the authorization of their teachers. Teachers are the ultimate decision makers in relation to the use of computers in the classroom environment.

There are a few things that must be in place for computers to be used in the classroom. For example, computers require electricity to function and LCD projectors are necessary to project materials from the small computer screen to serve many students at a go. Technical help in many instances is required especially to make it smooth for teachers who may not be too confident with the use of the technology to set up what they want. With all these in mind, head teachers were asked whether there was electricity supply in their schools and they all at 100% confirmed that they have electricity connection from the national grid but they raised the issue of blackouts as 50% of the schools did not have backup in case

of power outages. During their interviews, all the head teachers at 100% also confirmed that power terminals were available in the computer laboratories and classrooms.

The participating teachers were asked whether the schools had Liquid Crystal Display (LCD) projectors that could be used with computers to project learning materials for many learners at a time. This revealed that 75% of the schools have LCD projectors while 25% of the schools did not have a projector. This showed that majority of the teachers had the necessary equipment that was required for them to use computers for teaching and learning. On further investigation the teachers revealed that 62.5% of the schools that took part in this research had capable computer technicians while 37.5% of the schools did not have computer technicians. It was noted in this study that the schools that do not have a computer technician were all public schools. It was therefore assumed that it could be because the government does not employ that kind of labour force for the schools and so the responsibility is left to the board of governors whose secretary is the head teacher. May be Kenyan teachers need to do what was done in Britain in the year 2003 where teachers asked for help in order to be able to integrate computers in the classroom (Ivers 2003).

All the participants confirmed during data collection that they use computers with an awe-inspiring one hundred per cent (100%). The researchers then zeroed in on the objective of the study on the use of computers to teach Business Studies and directly asked the head teachers whether Business Studies teachers used computers to teach in their schools. 50% of the head teachers said that the Business Studies teachers do not use computers to teach. 37.5% of the head teachers amazingly were not sure whether Business Studies teachers use computers in their classrooms and only 12.5% of the head teachers indicated with certainty that Business Studies teachers use computers to teach the subject in his school. This was a shocking revelation that although the head teachers are keen on providing the computers they are aware of their disuse or do not know whether they are used or not. However, the head teachers indicated that there are some subjects where computers are used especially the Sciences such as Biology, Chemistry and Mathematics.

Business Studies teachers were asked whether they use computers to teach the subject. Their responses were as shocking as those of the head teachers with 62.5% of Business Studies teachers saying that they do not use computers to teach. Despite the positive attitude towards computers and their provision in schools these teachers were not using them to teach. The students were also asked about their level of experience on the use of computers during the Business Studies lessons. A majority of 54.1% pointed out that they had no experience at all on the use of computers in learning Business Studies as a subject while 43.1% had a little experience as shown on Table 6 below.

Table 6: Students' Experience on Use of Computers in Business Studies Lessons

Do You Have the Experience of Using Computers in Learning Business Studies?	Frequency	Per Cent
Not at all	133	54.1%
A little	106	43.1%
A lot	6	2.4%
Missing	1	0.4%
Total	**246**	**100.0%**

The students' responses indicated that the technology had not been integrated in the teaching of Business Studies confirming what the teachers and the head teachers had said. The turn of events in this study became surprising because

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researchers such as Willoughby & Woods (2008), Smerdon (2000) and Shue (2009) confirm that computer use in the classroom improves the teaching and learning environment to great heights. The researchers are of the view that perhaps the few years of gradual development of computers in Kenyan schools is still too short a period to create a natural culture of computer use. Although the United States Department of Education (1996) considered the internet as the blackboard of the future, the situation in the Business Studies classrooms in Westlands District of Nairobi County is far from conforming to this. Students' opinion on whether they are encouraged to use computers to learn the subject was split but the majority at 61% indicated that they are not encouraged by their teachers to use the computer as a learning tool. In the same breath 91.9% of the students agreed that teachers should be encouraged to use the computer as a teaching tool to enhance learning environment. This brings the realization that the assumed prevalence of technology has not eliminated the underutilization of computers in the classroom as seen by Willoughby & Wood (2008).

Teachers' and Learners' Attitudes towards the Use of Computers in Schools

All head teachers 100% agree that computers have a place in the teaching and learning environment. They all quoted vision 2030 and the economic stimulus programme that has encouraged the development of the general IT industry starting at the secondary school level. All teachers at 100% also showed a positive attitude towards the use of computer in the classroom confirming that positive attitude usually comes before the use of ICT tools.

RECOMMENDATIONS

- A replica of this study in all subject areas in Kenya would be helpful in giving a direction to ICT in education today and in the future.

- A replica of this study to compare the rural and urban areas could shed more light in the area of using computers in Kenyan schools.

CONCLUSIONS

The availability and utilization of computers in teaching and learning will correlate positively upon the realization that the school curriculum must be reviewed with the computer as a teaching tool in the minds of the reviewers. Just like the current curriculum was developed with the print media and the black board in mind, it is time to change the mindset by including and allowing the use of the computers in teaching and learning. Further, the teacher must be the first to acquire this technology for the classroom and with confidence such that he or she can convince the learners that it is a worthwhile technology to incorporate in the learning process. This therefore calls for training of the teacher trainers as well as the classroom teachers and the teachers to be on the pedagogy of the computer technology. While the novelty of computers in schools can present a challenge to teachers it is a motivation tool for the learners. The teacher's challenges in relation to use of computers should be addressed and the learner's motivation sustained in the same measure in order to realize the possibilities offered by the computer as an instructional tool.

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