

## School Management and Technical Support to Teachers and Students in the Integration of ICT in Teaching/Learning English Language

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### ABSTRACT

Information Communication and Technology (ICT) has been used in almost all fields of life. In Kenya, ICT has become so essential that the Kenya government has invested substantially in providing the requisite resources in schools. The utilization of ICT in education has recently started to appeal to the potential and significant progress in education. The process of integrating ICT into teaching and learning is an intricate process and its success or failure depends on a number of factors. These could mainly be teacher and institutional related. This study sought to investigate the use of ICT in the teaching of English language in Bungoma secondary schools in Kenya. The study adopted a descriptive survey design. The target population comprised 51 secondary schools, out of which 11 that have had computers for some time were selected. Combinations of stratified, random and purposive sampling procedures were used. The samples comprised 11 secondary school principals, 48 teachers of English, and 385 form three students: 190 girls and 195 boys. Data were collected using questionnaires, a lesson observation schedule and an interview schedule. A pilot study was carried out to determine the reliability and validity of the research instruments as well as the feasibility of the study. Data collected in the main study were analysed using the Statistical Package for Social Sciences (SPSS) version 21.0. Descriptive statistics comprising frequency counts, means and percentages were utilised in the analysis of the gathered data. The main findings of the study indicated: management and technical support were moderate, mainly in the provision of some ICT facilities and employment of computer teachers. The use of ICT in lesson delivery was low due to a number of factors: inadequate facilities and time to access computers, lack of appropriate ICT skills, teachers' unwillingness to advance their computer skills, and preference of use of traditional methods, among others. Some school managers and education stakeholders had not provided requisite facilities and equipment like computers, digital and video cameras, which are key in successful implementation of technology-based lessons. Continuous professional development programs should be developed to build teachers' capacity in ICT integration into their teaching. Finally, feasible ICT school policies should be put in place to spear head uptake into classroom instruction.

**Index Terms:** Emergent issues, Digitalization, Integration, Technology-based

### BACKGROUND TO THE STUDY

Language is one of the most important human resources in everyday living as it is a medium of communication. It enables human beings to express their thoughts, ideas, feelings and attitudes, between and amongst themselves (Kimemia, 2002). For some time now, Information Communication and Technologies (ICTs) have had effects on how people communicate or see

the world. In education, use of ICTs has had effect on teaching and learning as teaching methods have transformed classroom communication. According to Sharndama (2013), teaching and learning have become more interactive and collaborative unlike before when traditional methods (chalk and talk) were used. Use of ICT is also ideal in teaching large classes like those found in many developing countries. In developed countries, teachers of English use a variety of ICTs to teach almost every aspect of English.

Having understood the benefits of using ICT and other multimedia, the researchers in this study conducted a study using qualitative approach, to find out how ICTs were being used in Kenyan secondary schools, to facilitate the teaching and learning of English language. in large classes. It has also pointed out the how the internet technologies (email and websites) can be utilized in teaching learning English in Large classes. Therefore, in spite of large class sizes, the teacher can still perform well as in small classes, with the aid of technologies.

In Kenya, English language is the medium of instruction from primary class four, upwards. It also plays a pivotal role in national affairs since it is the country's official language used in the executive, judiciary and exchequer. It is also an international language of wider communication.

In this regard, learners are expected to demonstrate knowledge, mastery of all aspects of language, and good communicative skills by the end of secondary school cycle (Kenya National Examination Council (KNEC) report, 2010). The national Kenya Certificate of Secondary Education (KCSE) English language examinations (given after four years of secondary schooling), assess functional skills, reading comprehension, grammar, creative writing, literary appreciation, and essays based on set literary texts.

Students' performance in English in secondary school national examinations has usually been low as shown by KNEC performance analyses reports year after year, since 2012. This scenario has not improved. From the reports, the overall performance has been fluctuating with slight improvement one year, then downward trend the subsequent years. For example, in 2013, the overall mean score went as low as 27.5%. The low performance in English has had a negative effect on the performance of other subjects taught in English.

This low performance has partly been attributed to traditional teaching methods generally preferred by most teachers of English language. They include: a one-way communication mode where the teacher is the provider of knowledge and students are passive recipients of that knowledge, with occasional answering of a few teacher's questions. (Gathumbi and Masembe, 2008). Although, lecture method enables the teacher to cover more content within a shorter duration of time, it is not suitable for learning a language which requires students' practice to gain proficiency (Twoli et al. 2007).

ICT integration, which entails use of digital content and equipment in many aspects of teaching and learning, has been introduced in Kenyan schools, both primary and secondary. The government through the Ministry of education, sees this as an innovation that is expected to improve performance, not only in English but also in other school subjects. This mode of learning is expected to equip learners with the necessary expertise and information that is key in the 21<sup>st</sup> century. The Government of Kenya (GoK) has taken cognizance of this and adopted strategies to improve quality of learning.

Firstly, the government has put in place an ICT policy to improve quality of teaching and learning, through the usage of ICT in schools and institutions of higher learning. Secondly, in

conjunction with the Ministry of Education and the private sector, the government has provided computers to many schools throughout the country. Thirdly, the Kenya Institute of Curriculum Development (KICD), (the national curriculum development body), has developed and made available to secondary schools digitalized materials especially on the literature set books (Ratemo, 2009). This content, is available in the form of Digital Versatile Disks (DVDs). Finally, the government has facilitated the training of all school principals on the use of ICT in school management and classroom instruction, through Kenya Education Management Institute (KEMI).

Although the country has made strides in accelerating ICT uptake in educational institutions, there are concerns over how the ICTs are being integrated in the teaching and learning. A case in point is Bungoma sub-county where low performance in KCSE English language examinations has been witnessed. This is one of the main factors that forced the investigators to choose this locale for the study. A broad-based study carried out by Mukwa, (2011) focused on use of technology in teaching and learning all subjects in the secondary school curriculum. This study, therefore, narrowed down the focus to concentrate on ICT integration into teaching and learning of English language, which is the language of instruction in Kenya.

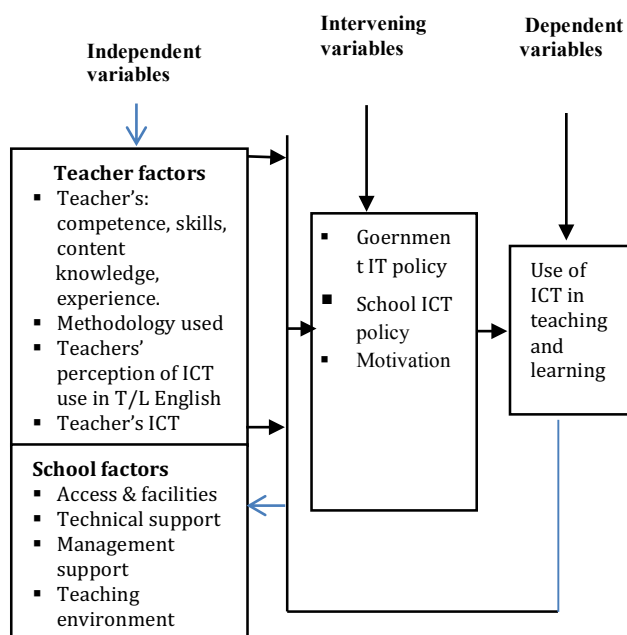
### **OBJECTIVES OF THE STUDY**

The study was guided by the following objectives: To find out the availability of ICT facilities and equipment, investigate ICT integration in teaching and learning, establish the attitude of school principals, teachers and students towards the use of ICT in teaching and learning, examine the extent of support from school management in using ICT and lastly, find out availability and capacity of technical support in school. These objectives directed the formulation of research questions.

### **THEORETICAL FRAMEWORK**

This study was based on the Diffusion of Innovation Theory (DoI). The ICT use in teaching and learning is a fairly novel innovation in Kenya and in particular, Bungoma South sub-county, which lies in the western side of Kenya. According to Rogers (1995), one of the features that determine the level of adoption of any innovation in a given social system is its feasibility. In carrying out this study, the adoption analysis approach was used to examine the factors that influence ICT use in teaching and learning of English language. The focus was on the school as a social system with the school principals, teachers and students as members of the system.

This study isolated school and teachers as the main factors that may influence ICT integration in teaching and learning (Becta, 2004). Teacher related factors are: teacher's knowledge, skills, attitudes toward teaching using ICT, and experience among others. School factors include: management roles, technical support, motivation, school and government policies. These were viewed as the intervening variables. The figure below shows the variables in a conceptual framework.



**Figure 1: Conceptual framework. Source: Adapted from Maithya R. and Ndebu S. (2011)**

### LITERATURE REVIEW

Use of ICT in teaching and learning of English should embrace the functions of planning and preparation of suitable learning activities, and their implementation in the classroom. In this case planning for teaching entails preparation of ICT integrated schemes of work and lesson plans, identification and trying out of learning activities, teaching notes, equipment among others. A PowerPoint projector and a computer could be used to present information visually in the classroom. To allow a teaching/learning environment, students should collectively source for relevant items/ideas they consider important within their own life experiences. They then can construct understanding of their meanings and appropriate use from known to unknown. This mode of learning provides the basis for a communicative perspective on the process of teaching and learning. Communicative approach has particular value and relevance for understanding how teachers and learners can work together using computers (Laura, 2000).

There are teacher and institutional related factors that affect the use of ICT in teaching and learning (Maithya and Ndebu, 2011). Teacher factors include: educational level, gender, teacher attitudes towards use of ICT, teaching experience, ability to integrate technology in teaching, computer use competence and methodology used, all of which can influence an individual's adoption of innovation (Rodgers, 1995). These factors determine to a great extent the success or failure of ICT integration in education (Newhouse, 2002; Pelgrum, 2001; Mukwa and Wanjala, 2011; Drent and Meelissen, 2007). Institutional factors that determine the success of ICT integration in teaching and learning are associated with support given to teachers and students by the school management (Empirica, 2009 and Gomes, 2005). Motivation is a major factor in determining if stakeholders are going to embrace an innovation or not.

### Data Collection

This study adopted a descriptive survey design. Data collection instruments were: an interview schedule, observation schedule, document analysis matrix and questionnaires. These are suitable instruments for collecting survey data (Orodho, 2003). The schools targeted were all government schools. The target population comprised 51 public secondary schools,

which were the total number of schools in the sub-county. The sample comprised eleven (11) schools that had had computers for at least three years. This represents 21.6% of the total number of schools. The schools were selected using a combination of purposive, stratified and random sampling techniques. Three hundred and eighty five (385) form three students (3<sup>rd</sup> grade in high school), 48 teachers and 11 school principals participated in the study.

It was imperative to avoid interrupting the normal running of the school during data collection. The researchers interviewed the school principal and administered a questionnaire to the teachers of English. Later they carried out document analyses which involved assessing: schemes of work, lesson plans and work books. The documents were inspected to find out if the teachers planned for teaching with ICT integration in mind. In addition, the department of Technical and applied subjects was also visited to assess and gather data on availability, condition and use of ICT facilities by teachers of English. It was also important to find out the role of ICT support staff.

The researchers then observed a live English language lesson, using the observation schedule. A questionnaire was administered to the students after the lesson. This procedure was followed in all the 11 sampled schools.

### Data analyses

Data analyses started by analysing questionnaire data. The items had been designed to elicit information that would be used to respond to a given research objective. Data from interview schedule, observation and teaching documents were analysed, firstly, quantitatively then descriptively. data were coded and analysed using Statistical Package for Social Sciences (SPSS) version 21.0. Descriptive statistics including percentages, means, and frequency counts were employed in the analysis. These are the most commonly used methods of analysing data in qualitative research.

### Research findings

Teacher **gender** was a variable to be investigated. Does gender influence choice of resources in teaching? Research results indicated that the number of female teachers of English is slightly lower (44%) than that of males (56%).

Teachers' **professional qualifications** indicate that all teachers of English in the sampled schools are professionally qualified, with 75% having Bachelor in Education (B.Ed.) degree and 18.8% having a Master of Education (M.Ed.) degree. Popoola (2014) states that higher education qualifications positively influence the tendency to wish to use ICT facilities in the language classrooms.

Teachers' teaching **experience** was of interest in this study. There was need to find out if experience had an influence in accepting an innovation. Five years were considered enough experience for teachers.

The results showed that the majority of teachers (68.75%) had experiences of more than 5 years. Long experience of teaching a particular subject is important because it normally gives teachers confidence and contributes to good mastery of the content. This variable was of interest in this study.

Teachers were asked to indicate their experience in **use of computers** in one form or another. The findings are summarized in Table 2.

**Table 2: Teachers' experience in using computers**

Experience	Frequency	Percentage	Cumulative %
None	10	21	21
One year	3	6	27
1-2 years	4	8	35
3 to 4 years	8	17	52
5 years and above	23	48	100
<b>Total</b>	<b>48</b>	<b>100</b>	<b>100</b>

The above data shows that although all the sampled schools have computers, some of the teachers (21%) have not used them for educational purposes. However, the majority (48%) had interacted with computers for five or more years. There was need to identify the nature of the interaction.

To be able to use computers for educational purposes, there is need for **training** on their usage. Skills development is considered important, for teachers to feel confident in integrating technology in teaching. Information on whether or not teachers have had some training on computer use was sought. The findings indicated that a sizeable proportion (75%) of the teachers in the sampled schools have been trained on use of computers. However, the main interest was training specifically in **ICT integration**. Such training is said to be effective if teachers are able to use ICT in the classroom to teach English. The study showed that only a small proportion (29%) of teachers have been trained on how to integrate ICT in the teaching and learning of English, as compared to 71% that has not. This is due to the fact that there is no structured continuous professional development programme for teachers of English language.

The study also wanted to get **views from students** on use of ICT in teaching English. Form three was the main focus as it is the level just before the final year I (Form 4) when students sit for the final national examinations that determine those who qualify to go to the university. A total of 385 students from 11 secondary schools took part in the study. Out of these, 190 (49%) were girls and 195 (51%) were boys. This proportion, which reflects the population of form three students by gender in the sub-county, suggests that there is almost gender parity among students enrolled in secondary schools. There was also need to find out **students' experiences** in terms of the number of hours they used computers for various reasons. Data showed that 79% of the students have used computers as compared to only 21.0% that have never. A small percentage (11%) indicated that they have used computers for more than five years. This could mean that they began interacting with computers even before joining secondary school, probably at home or cybercafé for those who can afford. The fact that 21% of the students have never handled computers could mean lack of proper policies in some schools that should ensure access to computers by every student.

In relation to use of computers, the issue of using the **internet** for educational purposes was also of interest. Internet is one of the inventions that has completely revolutionized communication, access to information and entertainment. The students were required to indicate how long they have been using the internet for whatever purpose. The findings indicate that slightly above half (59%) of the students have used internet while the rest have not. This proportion is lower than that of those who have interacted with computers (79%). This means there are a few computers available for use by students but internet connectivity is lacking. This scenario indicates that many facilities are not accessible to students and are mainly for use by teachers and administrators of the school.

The study was also interested in the **roles school principals** play in the promotion of ICT integration in teaching and learning. To establish the support given to teachers and students of English, information was sought from eleven school principals through face-to-face interviews. **Gender** difference was of interest in getting diverse views. Out of the 11 principals who participated in the study, six were female and five were male. This suggests that there is almost equal gender equality when it comes to headship of secondary schools.

Effectiveness and efficiency of a school principal in managing a school depend to a large extent on his or her **work experience**, as leadership skills are gained over time. With regard to this, each Principal was asked to indicate years of service. The study showed that 81.8% of them had working experience of 5 years or more. Long working experience is good especially where difficult decisions have to be made, and in articulating education policies.

The principals were also required to state whether or not they had attended any formal **training** in computer and ICT use. This is considered important because a principal who is computer literate could easily use knowledge and skills gained to guide teachers on the same. The findings showed that a large proportion of principals: 9 out of 11 (82%) had been trained. The training was conducted by different institutions that included: Kenya Education Management Institute and Center for Mathematics, Science and Technology Education in Africa. The remaining 18% of the teachers have learned how to use computers, through their own initiatives, albeit with difficulties.

Management support refers to the assistance given by the school principal and the entire administration to teachers and students. It is important because it is at this level where decisions on implementation of new policies such as adopting new educational innovations are made. **Technical support** is the assistance that should be given to both teachers and students to make teaching and learning easy. This support is equally important in order to address technical challenges that may occur during teaching.

Information on school management and technical support was sought through interviewing the Principal, and student's questionnaire. Teachers and students were required to indicate the extent to which they experienced certain challenges with regard to use of ICT in the teaching/learning of English. In addition, they were required to state the hours per week they could access the computers.

There was need to find out the **number of hours** staff and students were able to access the computer. The more time allowed the better the exposure and experience. In turn it could affect positively the adoption rate of ICT in the schools. Most of the students (52.73%), just like the teachers (56.3%) access computers for less than one hour per week, i.e. during one of the 40 minutes English language lessons. In addition, 33.3% and 32.47% of teachers and students respectively have no access to the few computers available. This clearly indicated that a serious challenge existed, that could affect ICT uptake in schools. According to Sicilia (2005), teachers take much more time to design projects that include the use of ICT technology, than when they prepare traditional lessons. Probably, the extra effort required to integrate technology in teaching had acted as a hindrance in having many more teachers embrace use of technology.

A previous survey was carried out from 1998 to 1999, which assessed the World Links schools' programme. The biggest barriers to the use of computers identified by teachers participating in the survey were: lack of time in their classes, and in their own schedules for planning (Kozma et al., 2004). A sizeable proportion (33%) of the teachers hardly accessed computers.

This means, either they were not interested or the schools had not put in place mechanisms to mainstream ICT integration in teaching and learning.

In this study, it was found out that there was inadequate equipment for each individual. For example, the ratio at which students shared computers was 1:3. This meant it was difficult for the teacher to give student's individual attention to address personal challenges. Other challenges were: inadequate ICT accompanying tools like printers. There was also slow internet access, which was found in designated hot spots.

The study also revealed that the majority of the teachers (95.8%) teach between 20 and 24 lessons per week. This is below the 27 lessons per week recommended by their employer: Teachers Service Commission (TSC). This work load was considered moderate according to Kenyan standards. Teachers would, therefore, be expected to take advantage of a lighter workload to learn ICT skills and plan for integration. However, this was not the case, which may be attributed to lack of interest or inadequate ICT facilities or lack of skills to integrate ICT in the teaching among other reasons.

Information on **support** given to teachers and students by school principals in their endeavor to use ICT, was obtained through face-to-face interviews. A total of eleven (11) school principals were interviewed. The results showed that all the school principals (100%) had made an effort to provide ICT resources although the facilities were still inadequate. A sizeable proportion of school principals (46%) have put mechanisms in place to allow teachers and students who are not taking computer studies as a subject, to access ICT facilities. The majority of the school principals (91%) had computer teachers employed by either TSC or Board of the school management. Computer teachers come in handy in assisting other teachers on technical issues. Only 18% of the school principals had personally taken some initiative to have their teachers trained on how to integrate ICT in teaching. From these findings, one can conclude that the principals are making quite an effort to promote ICT in general and its integration in the teaching of English language, despite the challenges schools experience.

## CONCLUSIONS

Alfred Mercier said, "What we learn with pleasure, we never forget," when he was giving a lecture at the British school in Tokyo in November 2011. Using ICTs is expected to be pleasurable, which means what is learnt has a higher chance of retention. In today's world of emerging trends in technology, everything is flexible, especially the teaching of English language. Methods of teaching English have developed rapidly over the past thirty years. So it is important that language teachers and learners adopt and understand the various current techniques of language teaching and upgrade themselves of the same. Teachers of English at various grade levels must also be able to adapt themselves to the needs of the young minds and how this in turn will help to bring about drastic changes in the society.

This study revealed the following: ICT was mainly used for producing lesson planning tools such as lesson plans and schemes of work. ICT use during lesson delivery was minimal, partly due to lack of ICT skills since most teachers had no or minimal knowledge on how to integrate ICT in teaching and learning. Use of technology has been seen to be more beneficial to both the learners and teachers, when it is made use of during lesson planning, lesson delivery and in assessment. School's management support to the teachers and students in use of ICT was moderate. Most school principals made an effort of acquiring some ICT tools. However, it turned out that they were inadequate and their usage was limited. Others like video and digital cameras were missing in some cases. Internet access was missing in some cases and where available, access was sometimes intermittent, and yet, all these are important in facilitating ICT



integration. For ICT to be successfully integrated in teaching/learning, there should be total support by the school principal and the entire administration (Yee, 2000).

The findings of this study are significant as they inform education stakeholders the status of ICT integration in schools, which is a recommendation by the government. With such information, they would be able to make informed decisions on provision and maintenance of such facilities. The findings would also help schools management to formulate policies to address the challenges.

### RECOMMENDATIONS

This study recommends that school managers and other stakeholders should provide more facilities especially computers, Internet, LCD projectors, digital and video cameras that are key in successful implementation of technology-based lessons. Internet access is vital in this endeavor. There should be structured continuous professional development programs to build capacity of teachers of English in ICT integration into their teaching. Feasible ICT school policies should be put in place to spearhead ICT uptake into classroom instruction. The Ministry of Education should step in and ensure the required equipment, facilities and skills are present in the schools.

### References

- British Educational Communications and Technology Agency (Becta) (2004). "Vision for e-Learning", Ferl Offline, Vol. 17, Autumn, page 4.
- M. Drent, and M. Meelissen, (2007). "Which factors obstruct or stimulate teacher educators to use ICT innovatively?" in *Journal of Computers and Education*. Springer Berlin Heidelberg. ISSN: 2197-9987
- EmPirica (2009). Benchmarking access and use of ICT in European schools 2006: Final report from Head-teacher and Classroom Teacher surveys in 27 European countries. Germany: European Commission
- A. Gathumbi, S. Masembe (2008). "Principles and techniques in language teaching: A text for teacher educators, teachers and pre-service teachers". Jomo Kenyatta Foundation Publishers, Nairobi.
- Kenya National Examinations Council (2010). Kenya Certificate of Secondary Education Examinations Report- KNEC, Nairobi.
- Kenya National Examinations Council. (2012). Kenya Certificate of Secondary Education examinations report. KNEC, Nairobi
- J.N. Kimemia, (2002). "Language, curriculum, processes, and emergency issues in education". New Era International Publishers. Nairobi.
- R. Kozma, R. McGhee, E. Quellmalz and D. Zalles (2004). Closing the digital divide: evaluation of the world links program, in *International Journal of Education*. Elsevier Ltd. USA
- R.Laura, (2000) "Digital language laboratories: What and Why?" Goldsmiths' College Language Resources Center, United Kingdom,
- R. Maithya, and S. Ndebu, (2011). Factors influencing effective use of ICT in teacher education: A case of Kenya Technical Teachers College; a paper presented to the international conference on education at Kenyatta University, Unpublished.
- Ministry of Information and Communication, (2006) – "National ICT policy". Retrieved on 4<sup>th</sup> February, 2017, from <http://www.information.go.ke/doc.ict20policy.pdf>.
- C. Mukwa, M. S. Wanjala, N. E. Khaemba, (2011). "Curriculum, instruction and educational media" in *International Journal of Curriculum and Instruction* Vol. 1(1) pp. 30-42, April. Retrieved on 1<sup>st</sup> February 2017 from <http://www.muk.ac.ke/ijci/>
- P. Newhouse, (2002). "The impact of ICT on teaching and learning". Perth, Western Australia: Department of Education.. Newton, (2003). *ICT for Managing Student learning*: Kluwer Academic Publishers, 101 Philip Drive, Assinippi Park, Norwell, Massachusetts 02061
- J. Orodho, (2003). "Essentials of educational and social science research methods". Nairobi, Masola Publishers.

W. J. Pelgrum, (2001). "Obstacles to integration of ICT in education: Results from worldwide educational assessment" in *Computers and Education*, 163-178.

L. Popoola, (2014). "Relationship between teacher attributes and the use of ICT facilities in the language classrooms in Osun State, Nigeria," in *African Journal of Sustainable Development*. Vol. 4, pg 45-59.

J. Ratemo, (2009, Doing away with books in the classroom. Standard newspaper: Online Edition. 10th October. Retrieved from <https://www.google.co.ke>

E. M. Rogers (1995). *Diffusion of innovations*. 6<sup>th</sup> edition. NY Press, New York.

S. Samuel, M. Hyderabad, & R. Mehdipatnam (2014). "Role of ICT in English language teaching", in *International Journal of Innovative Research & Development*. Vol. 3, Issue 12, Page 282

E. C. Sharndama (2013) "Application of ICTs in teaching and learning English (ELT) in large classes", in *Journal of Arts and Humanities (JAH)*, Volume -2, No.-6, July,

C. Sicilia, (2005). "The challenges and benefits to teachers' practices in constructivist learning environments supported by technology". Unpublished Master's thesis, McGill University, Montreal.

N. Twoli, J. Maundu., D. Muindi, M. Kiio, and C. Kithinji. (2007). *Instructional methods in education*. Kenya Institute of Education, Nairobi.

D. L. Yee, (2000). "Images of school principals' information and communication technology leadership". *Technology. PeCLTogy and Education*, 9(3), 287-302.