VLIR-IUC-UoN INTERNATIONAL CONFERENCE:ICT and Education

☐**BREAKING NEW FRONTIERS? SUCCESSES, CHALLENGES AND IMPACT OF ICT IN KENYAN SCHOOLS.**

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PRESENTATION OUTLINE

- Background

- Methodology

- Results

- Discussion

- Implications for policy and practice

- Conclusions

Background

☐ Kenya has placed emphasis on the importance of ICT in its Education Sector Support Program

☐ National ICT Strategy for Education and Training.

☐ Support by Ministries of Education and Higher Education and Technology by implementation of the strategy through institutions and agencies with which it works.

☐ NEPAD e-schools, Computer for Schools, Kenya, Cyber schools etc. are involved in implementing ICT in education.

Background……

- ICTs have found their way into Kenyan Schools
- Diffusion of ICT has changed teaching and learning approaches. Continuing advances in ICT available at increasingly low cost have opened new frontiers in teaching since the end of the 20th century.
- Their usage, successes, challenges and impact are not clear, hence this study.

Methodology

- Study is part of a research involving 12 countries in Africa under the Panafrican Research Agenda (Panaf) on the Pedagogical Integration of ICT.
- The objective of this research is to better understand how the pedagogical integration of ICT can improve quality of teaching and learning in Africa.
- The mixed methods approach which is a mix of both the traditional quantitative and qualitative methods was used.
- This approach borrows from diverse methodologies and facilitated the triangulation of data.

Methodology....

- A multi-case approach was used as opposed to a single case study.

- This meant selecting ten institutions where similar procedures were applied thus enabling comparison between the cases.

- For every indicator , triangulation was employed hence views were sought from the managers, educators and learners on the same indicator.

Methodology…….

The following qualitative and quantitative data collection instruments
were used:

- semi directed interviews with school directors, administrators, pedagogical advisors, and parents;
- focus group discussions with pupils and teachers;
- audiotapes of discussions, videotaped classroom observations and photographs of school environments;
- review of school documents on ICT and teacher and student productions;
- questionnaires for quantitative data from pupils and teachers on access, usage and training.

Methodology.....

- Ten educational institutions were selected for study. Selection was not based on a statistical model, but on the significance of the case for the objectives of the study , which in this case was the presence of computers in the institution.
- Diversity factors taken into consideration for the selection of schools included gender, type of institution, geographical location and ownership.

SCHOOL	TYPE	LOCATION	GENDER	OWNERSHIP
Aga Khan High School	Secondary	Urban	Mixed	Private
Enna Girls School	Secondary	Semi-Urban	Girls	Private
Kenya Technical Teachers College	Teacher Training	Urban	Mixed	Public
Musa Gitau Primary School	Primary	Semi-urban	Mixed	Public
Musa Gitau Secondary School	Secondary	Semi-urban	Mixed	Public
Ruraka Academy	primary	Urban	Mixed	Private
St, Joseph's Githunguri High School	Secondary	Rural	Boys	Public
Green Garden School	Primary	Rural	Mixed	Private
Tigoni Primary School	Primary	Rural	Mixed	Public
Uthiru Girls High school	Secondary	Urban	Girls	Public

Methodology….

- Data collection involved four visits to each institution.
- Pre-selection visit by one researcher whose aim was to ascertain if the school had computers.
- Collection of quantitative data from the school manager and educators. This involved completing survey questionnaires.
- The last visit was made by all researchers. It involved focus group discussions with teachers and learners.
- The sessions were tape recorded and videotaped and later transcribed.
- Data collected finally entered into the Observatory on ICT in Education in Africa

Results and Discussion

☐ Schools are at different stages in the integration of ICT in the teaching and learning process.

☐ Differences between private and public schools , rural and urban schools and school managers ICT skills.

☐ Private schools have a deliberate policy for integration of ICT in teaching and learning.

☐ Inclusion of ICT in the teaching process is a means for attracting and retaining learners as it is considered an added value.

Results and Discussion……

- Public schools where the School Principal offers clear leadership in use and investment in ICT skills and infrastructure, have greater integration of ICT.
- Urban based schools integrate ICT more than rural based schools. This is due to better infrastructure and training facilities.
- The lack of integration, despite having equipment, suggests a lack of clear policy or will to integrate ICT.
- The differences observed, therefore, appear to revolve around ownership of the school, location of the school, professional training of the teachers that included ICT and ICT skills of the school manager.

Results and Discussion………

- 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.

Challenges

- The lack of a unifying National ICT Curriculum –no commitment to integrate
- Lack of ICT infrastructure – computers, internet connectivity,
- Attitude/resistance to change – older teachers suffer from technophobia
- Lack of ICT skills by educators and school managers
- Government has not employed ICT technicians for the schools – most are BOG
- Converting manual teaching notes to ICT format requires both time and skill.
- Teachers feel that this is also an added load - there is no special reward and it is not part of the school curriculum, there is no motivation.
- Secondly, the scarce number of computers, f
- Frequent power black outs,
- Computer viruses,
- Lack of reference materials especially at primary level are major challenges faced by schools.
- Old, slow computers - donations

Successes

- Availability of basic ICT equipment – computers, printers, photocopiers, LCD projectors, smart boards and Internet connectivity. They all have computer laboratories with five (50%) of them networked.
- Management support in all the schools
- Provision of literacy skills to learners- timetabled 40 – 100 hrs per week
- Investment in educational resources – Encyclopaedias, CD – ROMs
- A relationship between the ICT skills of the school manager and ICT awareness and usage among teachers and learners was observed as a major success.

Impact on teaching and learning

- ICT has made the preparation of lesson planning easy
- Improved the storage and retrieval, enhancing efficiency in teaching.
- More interesting presentations to the learners
- Improved the formatting, editing, storing and retrieval of information
- Enabled teaching notes to be keyed in, stored and retrieved for future use.

Impact on teaching and learning

- Information search from the Internet enables teachers to get more teaching materials
- Analysis of students' marks on the worksheets has become easy and therefore the teacher can see the performance trends and undertake the necessary remedial actions.
- Enabled the teacher to have confidence in lesson delivery because a teacher can get information from many authors (sources)
- Benefit from others have done in the same area to improve classroom teaching.
- Learning is more interesting and has motivated the learners to learn.

Impact on teaching and learning

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- Students access learning materials installed from CDs such as Encarta encyclopaedia.
- Students seem to enjoy the teaching of the lessons
- The teacher enjoys teaching more than when they were not using ICT.
- Improved grammar and spelling through the use of the in-built dictionary and thesaurus
- Clarified concepts in the sciences and mathematics through the use of installed Encyclopaedias

Impact on teaching and learning ....

- Students reported that the use of computer has had a positive impact on their learning. They felt they were more knowledgeable and better prepared to do academic work. They were able to read more detailed researched information as well as see good illustrations provided on computer resources.
- This gave them long lasting memories. Computer studies assist students in studying all the other subjects whose information can be obtained from the Internet.
- An example was given as Home Science subject where information on recipes can easily be obtained from the Internet.

Implications for policy and practice

For the schools:

☐ **Effective leadership.** The school administrator must facilitate access to ICT by teachers, students, and the administrative staff.

☐ **Building renovation.** Most school classrooms in Kenya were built without ICT use in mind. Most classrooms do not have electrical installations, air conditioners, window protectors and solid doors. It is therefore difficult to use electrical installations in such spaces.

Implications for policy and practice….

- **Teacher training.** Once teachers have access to ICT they are more likely to learn on their own and to put into practice knowledge and skills gained through formal training or informal inquiries from colleagues.
- Students get more benefits from ICT when teachers use them for pedagogical purposes and such practice thrives best in an environment conducive to learning and innovation.
- **Equipment maintenance.** Some equipment is supposed to be changed at specific times . The school should train their personnel to do the maintenance rather than depend on commercial technicians.

Implications for policy and practice….

- **Effective supervision of computer labs.** The school administrators should make an inventory of the equipment in the labs and inspect the state of the labs and the equipment on a regular basis.

- They should provide optimum access to the labs and its resources through careful scheduling, including training opportunities for teachers.

Implications for policy and practice…..

For teachers: Teachers use technology to access information, model problem solving, and develop simulations that provide greater understanding of how technology is used in the work world.

- **Appropriate match** - Teachers should continue to use technology to guide and engage students in self-directed and group learning activities. There has to be an appropriate matching of teachers' knowledge of content, appropriate uses of technology, and the desired learning objectives.
- **Find time** - Increase the number of hours they go to the internet to search for information to update their teaching. Through internet, they will have access to resources that even a few years ago would have been impossible even for university researchers.

Implications for policy and practice.....

- **Professional development -** Teachers' active participation in seminars and workshops - include just-in-time study groups, online seminars, action research, and collaboration with colleagues.
- **Administrative efficiency -** The teacher is also an administrator at a lower level in the classroom. Classroom teachers should improve their skills in simple programs like Excel, for calculating marks and storing important data for the school. Electronic messaging can be used to encourage sharing and collaboration among students.
- **Learn by practice** - a teacher may have the best computer, the most sophisticated curriculum software, and the fastest internet connection, but skills are a must.
- Teachers must have opportunities to familiarize themselves with hardware and software and to learn through example and practice how to use ICT to deepen their teaching and the learning of their students.

Conclusion

☐ The selected schools studied are responding timidly to ICT integration in teaching and learning. Action plans related to the use of ICT in schools are not clearly articulated. The use of ICT in educational settings is marginal and in many instances perceived as an "add on" to regular schoolwork. These findings indicate that while ICT integration has been adopted it is still at an elementary form and schools in Kenya are yet to use it as a tool that can be used for more in depth and interactive teaching and learning.

Conclusion……

- Integration of ICT into schools appears to be an important value component of government rhetoric to modernize the country and open future citizens to the knowledge economy.
- Similar perspectives were voiced by teachers and students in focus group discussions who addressed the value that access to computer and internet has brought to learning and to school administration.
- Challenges relate to policy, skills of teachers , access to equipment and training opportunities, and attitude concerns. From all indications it was clear that there is absence of clear policies guiding core issues such as program design, teacher training and sustainability.

-End-

Thank you for listening.