

ICT Headteachers Sensitization Workshop Mbale District At Mbale S. S 16th – 17th June, 2005

The Headteachers' ICT sensitization workshop was organized by the Ministry of Education and Sports and conducted by SchoolNet Uganda.

Participants in the Workshop

The workshop was attended by 20 Headteachers (See participant List: Appendix 1) from selected schools in Mbale and surrounding districts.

The four districts represented were:

- Mbale
- Pallisa
- Kumi and
- Tororo

Program

The workshop lasted two days (16th – 17th June), 2005

Please see attached program (Appendix 2).

Objectives of the Workshop

1. To sensitize Head teachers about the importance of ICT in Education through demonstration of the innovative ways of using ICT to enhance teaching and learning in different subjects across the curriculum.
2. To equip the Head teachers with basic skills of electronic communication and Internet research.
3. To provide Head teachers an opportunity to learn from each other and to share experiences regarding the implementation of ICT in schools.

Participant expectations

Participants expressed the following expectations for the workshop:

1. To acquire skills in how to operate a computer.
2. To learn how ICT can improve teaching and learning in schools.
3. To learn how to acquire ICT equipment for Schools.
4. To learn how to implement ICT programs in schools.
5. To share experiences with fellow Headteachers about how they are using ICT in their schools, challenges and solutions.

Official Opening Ceremony

The Headteacher of Mbale S.S welcomed participants to the workshop. She said 18 of twenty participants had turned up for the workshop. She invited the Guest of Honor, Mr. Nsumba- Lyazi – Assistant Commissioner Secondary Education

(comprehensive), Ministry of Education and Sports to officially open the workshop.

Highlights of the Guest of Honor's Speech

The Guest of Honour, Mr. Nsumba-Lyazi

- Thanked Mbale SS Headteacher for coordinating the workshop, and the others head-teachers for turning up for the workshop.
- Mentioned the objectives of the workshop.
- Drew the attention of the participants to Uganda's national vision – 2025. He pointed out Uganda seeks to develop through the application of Science and Technology. Science and Technology are the drivers of development
- The Government policy has shifted to emphasize the Science and technology
- Teachers and Head-teachers in particular are the custodians of the education system and need to be empowered with ICT skills.
- Schools need to start now with existing resources. Schools should not wait for computers from the Ministry of Education and Sports.
- The Ministry is sensitizing Headteachers about the potential of ICT.
- The Vision of the Ministry of Education and Sports is that all teachers should be ICT enabled within the next 5 years.
- ICT facilities in schools need to be accessed by neighboring, less resourced schools and the community
- The Government is establishing School Based Telecenters in partnership with SchoolNet Uganda and Uganda Communication Commission (UCC) and one case and with NEPAD e-schools initiative in another case..
- MOES is trying to reduce the Digital Divide that exists between Rural and Urban areas. The Rural Energy Project is exploring new power sources for rural areas in Uganda.
- Teachers and Headteachers may not be ICT Experts but they need to be aware of the potentials of ICT in education and how to give students an opportunity to learn. *“You may not be an expert on Computers but you should at least be know the power of the computer...what it can do and what it cannot do”*
- Education is no longer a monopoly of a few. Access to information is a human right now. Teachers need ICT skills to access the international global library.
- Some students are much more advanced in ICT than the teachers, adding. ***“We are trying to avoid Shocks. The teacher should at least be able to use Internet and E-mail”***.
- Once teachers are given the initial training, many of them continue on their own initiative. It is therefore important to give teachers a chance to train and improve in ICT.

- The Ministry of Education and Sports runs ICT training programs for teachers at selected schools during the holidays. Headteachers need to release teachers for such trainings. Sometimes, schools may need to meet the costs of the training.
- ***This is the New Direction of the MOES and it is consistent with Uganda's national Vision***

Presentation#1: Ensuring School Internet Connectivity with Limited Resources (Sharing Experiences)

This presentation was made by Mr. J.W Ganatusanga, Chairman Mukono Headteachers' Association and Head teacher – Bishops' SS Mukono. Mr. Ganatusanga used several approaches to highlight the lessons he had learnt over time. He shared some of the lessons he has learned as a school Head-teacher.

Lesson#1: To use ICT effectively, you need hands on experience, so do your teachers.

He used the concept of the mobile phone arguing that the participants used mobile phones with or without manuals. He said a mobile phone does many things a computer does such as delete, send, save etc.

Lesson#2: Learning ICT on-a-need basis is effective.

'He said when he was challenged to make a presentation; he learnt how to use PowerPoint. He also learnt to use e-mail because he belonged to a group that shared minutes of meetings using e-mail.

Lesson#3: Even when someone can donate computer equipment to your school, you must have capacity to own it.

He said that he was posted to Mengo Senior School which had received computer donations, but the computers had broken down.

Lesson#4: Not all Schools need the same technology solution.

He said he installed Wireless Internet Connectivity at Mengo Senior School in 1998. When he went to Bishop School, Mukono, that solution could not work but there was no line of sight. He had had to install a KU-Band VSAT.

Lesson#5: Put a saving Line in place for purchasing computers over a period of time.

He said that he is in a school with a small budget but he has been able to acquire a VSAT satellite costing over 9 million shillings through savings over a period of three years.

Overview of SchoolNet Uganda

He gave a historical background of SchoolNet Uganda saying it was started by Headteachers Association as local organization to foster the installation and use of ICT in schools. He pointed the activities of SchoolNet Uganda included:

- Providing advisory services such as where to get computers, which type of computers to buy?
- Coordinates Telecollaborative projects in collaboration with the International Education and Resource Network (IERN – www.learn.org)
- Conducts In-Service Training in ICT for teachers.
- Carries out Research studies on Technology use, challenges etc.

Mr. Ganatusanga's main presentation covered the following aspects.

- What is Internet connectivity?
- Why install Internet connectivity?
- Advantages of Internet Connectivity
- Types, costs and comparisons of Internet Connections.
- Impact of Internet Connectivity at a school.

He suggested the following as a way forward

- Schools need versatile computers for efficient connectivity to the internet. Slows computers may deter the use of computers in a school.
- Schools need accessories such as Floppy Diskettes, CDs, and Printers etc to use computers comfortably.
- Regular servicing of computers is necessary.
- Headteachers, Teachers and students should use Internet and E-mail. This use should be guided and supervised. For example, there should not be careless downloading of files because currently Internet costs are based on traffic.
- Ensure that the school is involved in Telecollaborative projects
- Schools need to create websites and establish a web presence.

Mr. Ganatusanga said his expectation for the workshop was to demystify the use of ICT in Education.

Reactions to Presentation

1. Sustainability and Maintenance of ICT equipment
 - In purchasing computers, care must be taken and issues of sustainability must be thought of in advance.
 - Schools need to be aware of computer viruses and acquire anti-virus software
 - Explore different technology options.

2. ICT Budget

- The Ministry of Education and Sports sent out a circular to the schools requiring the schools to have a budget line for ICT. Part of that budget could be used to finance the training of teachers in ICT.

3. ICT and Project Based Learning

Schools can participate in Project Based Learning with very limited resources. Where there no Internet connection, schools can type out the work, save on a diskette of flash disk and then go to another center with Internet connectivity to post the work.

4. Getting ICT Resources Into Schools

- There is need to network with other organizations. An example was given of St. Henry's College, Kitovu which acquired over 120 computers through its partnership with Computer Aid International

5. There is need to start and start now. The start could be small, beginning with the Headteacher being connected to the Internet.

Presentation #3: Integrating ICT in the teaching of Music

This presentation was made by Nathan Zaake. (2nd year student of Bachelor of Music, Makerere University)

Highlights of the Presentation:

The presentation covered the following components:

- Challenges and limitations of studying Music.
- Why is it advisable to use ICT in teaching and Learning Music?
- The advantages of using ICT in the Music.
- How can ICT be used in each paper of Music?

He pointed out challenges in studying music such

- Practice time is limited.
- Boys cannot sing through female voices.

He said ICT could be used to:

- Access libraries of Music and online glossaries.
- Research on traditional instruments.
- Publish students' works.
- Compose music while listening to it
- Help in correcting mistakes made in composing music.

ICT leads to breaking away from the one way traffic model of teaching from the teacher to the learner.

Reactions and Lessons from the Presentation

Mr. Ganatusanga moderated the discussion of the presentation. Below are the lessons from and reactions to the presentation.

- You can create educational content/materials using graphics/pictures in many subjects.
- You will not maximize the use of computers unless you can invest time to learn the skills.
- You can use the computer as a research tool to access global libraries and glossaries.
- You can use the computer to collaborate with colleagues in other countries.
- You can use the computer as a visual aid in teaching.
- You can use pictures to describe the appearance of objects, features, etc. Digital cameras are useful equipments for schools.
- Computers can be used to make teaching and learning more interesting.
- Computers can allow a teacher prepare exercises that can be accessed by the learner at a later date.
- The learner may be able to get immediate feedback about his/her performance.
- Computers allow students compose music easily and rival internationally recognized composers. Computers demystify composing music.
- You need money to start computer programs. You need money for the appropriate hardware, software and human ware.
- Computers check on accuracy.
- Using ICT can lead to improved school performance. At one of the schools, Makerere College School where students use ICT in Music, 8 of 9 Students scored “A”s in the final UACE UNEB Examination. The presenter who was himself a former student of Makerere College School and had scored A(1,1,1,1) in the final UACE UNEB music examinations testified that using ICT had helped him a lot in making up his scores.

Presentatio#4 Integrating ICT in the Teaching of Sciences

Presenter: Daniel Kakinda, Executive Director of SchoolNet Uganda and Former teacher of Physics.

Discussant: Mr. Werike Stephen
(2:30 – 4:00 PM)

Mr. Kakinda’s presentation covered the following aspects

- What are ICTs and the different components of ICTs?
- Elements of Good teaching.
- Using ICT to enhance the available resources to the teachers
(Demonstrations)

(See main presentation)

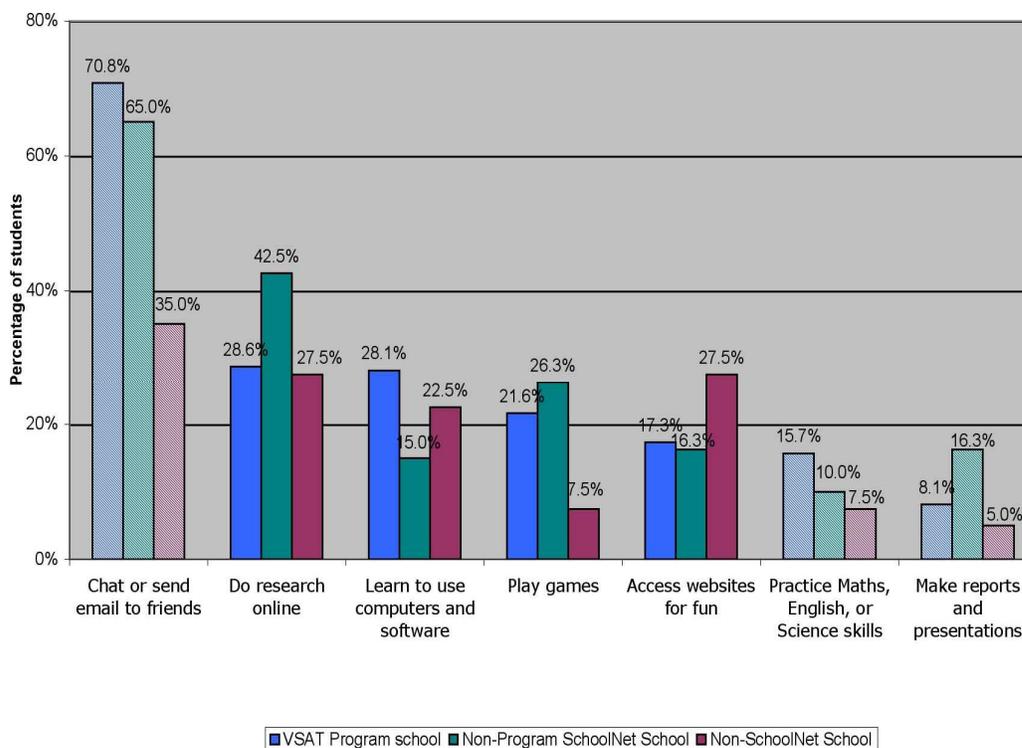
Mr. Kakinda said that ICT is part of our daily life

Elements of Good teaching

- i) *Teaching should make learning more fun and interesting.*
 - Used an interactive animation showing the changes of state of matter. The animation illustrated the differences between solids, liquids and gases in terms of the separation and motion of its molecules.
- ii) *Vary the type of Content delivered (text, video, audio etc)*
 - Used the example of the human brain and showed the more senses that a teaching method engages, the higher the retention level.
 - Used a Virtual Reality Model of a music instrument (Endingidi) which he played on a computer
- iii) *Create materials that engage the learners*
 - Used a number of interactive materials which make abstract concepts easily understandable.
- iv) Provide immediate feedback to learners. He used the Africa map puzzle to illustrate his point.

Using ICT to Enhance the Science resources in the School

Kakinda drew the attention of the participants to the 2004 World Bank evaluation (shown below) of the use of ICT facilities in Uganda Secondary schools.



- Students' favorite computer activities were chatting with friends.
- Few students use computers for researching and study.

He said there is need to structure good learning activities that maximally exploit the educational value of computers.

Kakinda demonstrated how ICT can be used in the classroom using:

- The Online Digital Library can enhance learning resources in the schools beyond the textbooks. He used an online biology book to illustrate his point.
- Interactive Physics: (Used a simulation model of a Generator)
- Interactive Chemistry (Guided participants through a virtual chemistry experiment)
- Interactive Physics: Conducted two virtual experiments to determine the spring constant

Discussion of the Presentation: Issues and Lessons

- Virtual Laboratories enable students time to conduct otherwise expensive chemistry practical at a low cost.
- Though virtual practicals are very useful, they should never replace completely the real experiments. They must only be used to complement real experiments.

- Even when you have technology available, you need structured exercises to maximize learning. Technology should only be used to support good pedagogy.
- Teachers who teach poorly should never use technology.
- The humanware (capacity to use ICT) must be addressed to have maximum impact. It should be looked at even before technology issues.
- New teachers need orientation in the schools and should be guided in how to use ICT for teaching and learning.
- For teaching to be good, it should have good content.
- In schools with limited resources, computer simulations such as virtual labs could help to reduce the cost of the conducting science practicals.
- ICT can help in designing, creating and improving quality content and this should be encouraged.

Quotes from the Participants

“This is the correct approach [Sensitizing Headteachers about ICT]. We should tele-collaborate in order to move forward. ...We should share facilities in order to break the digital divide”

..... Head Teacher in the training

Challenges that might militate against achievement of goals in curriculum-technology Integration:

- Limited expertise in using ICT.
- Resources are limited. There are constant power cuts.
- Lack off access to practical materials.
- Lack of trained teachers.
- Inadequate lab equipment.

Session #4: Evaluation of Day One

Evaluation Question: What One thing have you learnt today?

The following are some of the responses of participants:

I have learnt.....

- There is need to organize information.
- ICT is not a mystery. It is a necessary tool.
- ICT simplifies teaching and motivates learners.
- ICT can arouse and maintain interest of learners.
- ICT has not come to replace teachers but to make their work easier.
- Even in schools where there are many resources, ICT is still very useful in improving the teaching and learning processes.

- You can sit on a computer and learn. What you need is to sit and practice. The computer itself can actually teach you how to use it.
- ICT may seem expensive in the beginning but in the long run, it may save a lot of money and time.
- There is need to use ICT- enabled teachers more in the sensitization workshop.
- Through telecollaboration, students can exchange information with students in other schools in Uganda and in other countries.
- There is need for every teacher to use ICT in teaching.
- Every Headteacher should use ICT else he/she will be left behind.
- Tele-collaboration is necessary for all teachers.
- There is a global library where you can get lot information.
- To distinguish between a laptop and the desktop computer.
- It is important to start small and then grow.

Day#2: Friday 17th June, 2005

Presentation#1: Integrating ICT in the teaching of Geography

Presenter: Kalema Golooba Ayub (Teacher of Geography, Mengo SS)

Mr. Kalema highlighted the various ways in which ICT could be used in geography. These include

- Photo interpretation.
- Tele collaborative projects.
- Electronic Publishing of Student works.
- Research on any area.
- Question Bank.
- Ready lessons on Continental drift and Plate tectonics.
- Fieldwork and sharing of field reports.

Mr. Kalema explained why there is a need to use IT the teaching of Fieldwork pointing out that:

- Students go for fieldwork every year, write reports and throw them way!!
- There is no sharing of field reports across classes.
- There is shortage of local content on Uganda.
- While in the field, time spent on actual study is very limited.
- Follow up is difficult. Students do not remember what was observed in the field.
- Students fail fieldwork at both O and A' level, contributing to the poor performance of geography.
- Fieldwork is expensive.
- Some schools dodge fieldwork.

He guided participants through a virtual field excursion of Kasenyi fish landing site. During this, he covered

- Objectives of the study.
- Methods of study.

- Key findings related to the study.

Discussions and Issues Arising from Presentation

- ICT can be used to make abstract concepts in geography easier, such as drawing panoramic diagrams.
- Schools can use may use normal cameras to take photographs and use them to teach fieldwork.
- ICT makes the follow-up stage in fieldwork very easy.

Presentation#3: Project Based Learning (PBL)

Presenter: Ms Carol Namatovu (2nd year Business Computing student, Makerere business School).

Ms. Namatovu presentation covered the following aspects:

- Definition of Project Based Learning.
- Dimensions of Project Based Learning.
- Experiences with Project Based Learning (She shared a case study of her involvement a Telecollaborative project on “Women around the world”).
- Benefits and results of telecollaborative projects.

Discussion of Presentation: Moderated by Mr. Kakinda Daniel Questions for Participants and their responses.

Mr. Kakinda asked some probing questions based on Ms. Namatovu’s presentation as a way of checking participant’s understanding of Project Based Learning. Below were some of the participant’s responses.

a) In your view, what do you think is Project Based Learning?

- Self drive exploration.
- Ability to look for information using ICT and take your time when to do it.
- Self- Fact finding method of learning.
- An attempt to venture into the unknown using your own motivation.

b) What do you need to participate in Project-based learning?

- Human ware.
- Identification of target groups.
- Skill of observation, listening, reading, typing, communication etc.

c) What do you think students benefit from Project Based Learning?

- Exposure, networking and confidence-building.
- Increase in self esteem.

- Learn research skills.
- Learn how to organize information logically.
- Become innovative. They learn to think about other alternatives and view issues from different perspectives.
- International Exposure

Presentation#3: Implementing ICT in Schools – A Roadmap

Presenter: Mr. Kizza Vincent, (ICT Coordinator, Makerere College School)

Mr. Kizza presentation covered the following aspects:

- The Rationale of using ICT in Schools.
- The stakeholders and management team of the ICT programs in a School.
- The 4 Phases of ICT implementation in Schools (from basic to most advanced).
- The various uses to which ICT can be put at different stages.
- The comparative prices of ICT equipment that may be needed at each stage of Development.

Lessons and Discussions after the Presentation

- Headteachers need flash disks.
- There is need to build the capacity of teachers to use ICT in teaching.
- Start small and grow.
- Administrative support for computer activities is very important.

Critical Success Factors in capacity building for ICT in Education

- There must be capacity building for the project team. The Headteachers need capacity building as well.
- It is very difficult to convince teachers to be trained. They always complain that they have no time.
- Before training, the potential trainees need to be sensitized why they need training and the benefits of the training.
- Teachers need to develop some technical skills to troubleshoot some technical problems. For those they cannot troubleshoot, they should be able to identify the problem and report them correctly.
- There is need to create a network of teachers and Headteachers who can support each other.
- There are many non monetary motivations schools can use to foster increased involvement and commitment of teachers. Schools can reward teachers who integrate ICT in their teaching with additional training.
- Walk the talk. Do as you want the other people to do.
- School- based training is very effective. Training for teachers should be done in their environment similar to theirs.

- When training, start with what is immediately useful to teachers. Start with administrative use of ICT and then move to curriculum-technology integration.
- In the beginning, try to use the limited resources you have to market your activities
- Schools need to draw a vision and plan of action in ICT development.

Practical Session:

Participants were guided through hands-on practical session on the computers which covered:

- How to find information on the Internet
- How to save information

Closing Session

Mr. Wamala Mafabi Sam (the Head-teacher Nabumali High School and chair person, Mbale Headteachers' Association) presided over the closing ceremony. He was also one of the workshop participants.

In his closing remarks, Mr. Mafabi noted that:

- Participants had all got the flu of ICT and should all sneeze ICT.
- Headteachers should network their schools with other schools across the globe so as to engage their students in collaborative projects.
- Headteachers need to acquire flash disks, and put one computer at their office which they can use to learn ICT.
- Schools need to keep servicing their computers so as to optimize on their usage.
- Headteachers need to budget and plan for their training and that of the teachers so that ICT can effectively be used to enhance the teaching and learning in schools.
- There is need to visit other schools which are a bit ahead in ICT to learn and borrow ideas for successful ICT implementation.

Suggestion and Recommendations of Participants

The Head-teachers who participated in the workshop made the following recommendations to the Ministry of Education and Sports.

1. There is need for the Ministry of Education and Sports to include ICT training in the training of Teachers while still in National Teacher Training Colleges.
2. Ministry of Education and Sports should set up a special fund specifically geared toward the construction of computer labs in Schools.
3. There is a very urgent for the National Curriculum Development Centre (NCDC) to produce an ICT Curriculum for A' Level.

4. The Holiday ICT Training program for teachers should be spread to other centers across the country.
5. Training of Trainers should be encouraged and continued. These will then be responsible for cascading the training.
6. Instead of sending books to schools, the Ministry of Education and Sports should consider sending computers to give them a starting point.
7. The Sensitization program needs to be longer than two days so that participants acquire more skills about how to use ICT equipment.
8. SchoolNet Uganda should consider supporting more schools to participate in Telecollaborative projects.
9. Government should send out a circular to the schools requiring PTAs and BOGs to participate in ICT programs and sensitization.
10. The appointment and deployment of ICT teachers in whom the school had heavily invested should be done in consultation with the school. This will ensure that the schools invest in training teachers without fear that they would be transferred.
11. If the school has a proper plan for ICT and wishes to make an additional fees charge, the Ministry of Education and Sports should be considerate and allow it to proceed.
12. SchoolNet and the Ministry of Education and Sports should liaise with the suppliers of alternative power sources such as solar to ensure schools can access them at a lower rate.

Appendix 1: Attendance and contact information

Head Teacher ICT Sensitization Workshop -Mbale				
16th / 17th June 2005				
	Name	School	Telephone	E-mail
1	Bwere Florence	Musese S.S	077-566337	
2	Ebiru Nathan	Buhugu S.S	077-564389	
3	Ennu Moses	Ngora H.S	077-317880/077-488472	
4	Kamulegeya Farida	Hamdan G.H.S	045534710/077651747	
5	Khaitisa H Wamema	Atiri S.S	078653263/077-875519	
6	Kogo Sam **Iloho**	Iki- Iki S.S	077-824436	
7	Mpaata Ali	Nkoma S.S	077-435538	
8	Mugweri Phillip	Bubulo G.H.S		
9	Namboozo Stella	Buhugu S.S		
10	Nyote Susan	Nabumali S.S	077-948607	
11	Owor Jag Adrian	Bukedea S.S	078-804613	
12	Sabakaki N.P.J	Bubulo S.S	071/077-483020	
13	Sr. Mary Lunyolo	Nyondo S.S	077-368607	
14	Wakuuli Catherine	Mbale S.S		
15	Walimbwa Johnson	Bududa S.S	077-555647	
16	Wamala Mafabi Sam	Nabumali High Sch.	075-622871	
17	Wanjala William	Bushika S.S	077-364452	
18	Washirekaha Moses Sali	Busir S.S.S	077-871288	
19	Wajaba Helen	Tororo Girls	075-888287	hwataka@yahoo.com
20	Werikhe Steven	Bulucheke S S	078-677528	
21	Musana Francis	Bugobero High	077-858201	
7	Mango Henry Wataka	WOUGNET/CAI	075-627828	

Appendix 2. Workshop Programme

Day 1- Thursday 16 th June 2005		
Time	Item	Facilitator
8.00- 8.30 AM	Arrival and Registration	Sam Kuloba
8.30 - 9.30 AM	Opening of the Workshop	Nsumba Lyazi – Assistant Commissioner Secondary (Comprehensive)
9.30-10.30 AM	Ensuring School Internet Connectivity with limited resources- Sharing of experience	Joseph Ganatusanga- Head teacher Mukono Bishops' SS and Chairperson Mukono Headteacher's Association.
10.30 -11.00 AM	BREAK	
11.30-12.30 PM	Integrating Information Communication Technology (ICT) in the teaching of Science	Kakinda Daniel
12.30 -1.00PM	Discussions and reactions related to the morning presentations.	Moderator – Kakinda Daniel
1.00 -2.00 PM	LUNCH	
2.00 – 3.30 PM	Practical Session – Email (signing, replying, sending & downloading attachments)	Charles Mubiru & Sam Kuloba
3.30 – 4.00 PM	BREAK	
4.00 -5.00 PM	Integrating Information Communication Technology (ICT) in the teaching of Music	Nathan Zaake
Day 2 – Friday 17 th June 2005		
Time	Item	Facilitator
8.00 -8.30 AM	Arrival	
8.30 -9.45 AM	Integrating Information Communication Technology (ICT) in the teaching of Geography	Ayub Kalema Golooba
9.45 -10.30 AM	Project-based Learning- A student perspective	Carol Namatovu
10.30-11.00 AM	BREAK	
11.00 -12.30PM	Implementing ICT in Schools – Road Map.	Vicent Kizza
12.30- 1.00 PM	Discussions and reactions related to the morning presentations.	Moderator – Kakinda Daniel
1.00 – 2.00 PM	LUNCH	
2.00 – 3.30 PM	Practical Session – Email (signing, replying, sending & downloading attachments)	Charles Mubiru & Sam Kuloba
3.30 – 4.00 PM	BREAK	
4.00 -5.00 PM	Closing Ceremony	Guest of Honour