

**REPORT OF THE SCHOOLNET UGANDA – CLOSE THE GAP
ICT4E TRAINING WORKSHOP
FOR
SCHOOL ADMINISTRATORS
HELD
(16TH -20TH) AUGUST 2010 AT GAYAZA HIGH SCHOOL**



Fig.1 : School administrators at the ICT4E Training Workshop

INTRODUCTION

SchoolNet Uganda-Close the Gap ICT4E pilot project is a 2 year project implemented by SchoolNet Uganda (<http://schoolnetuganda.sc.ug>), in partnership with Close the Gap (<http://www.close-the-gap.org>) and the beneficiary schools. The pilot project involves 20 secondary schools namely: St. Mary's Girls Secondary School Ediofe (Arua), Muni Girls Secondary School (Arua), Arua Public Girls Secondary School (Arua), Transform Education Centre Kasangati (Wakiso), Gulu College (Gulu), Gulu Secondary School (Gulu), Awere Secondary School (Gulu), Kitara Secondary School (Hoima), Karambi Secondary School (Kasese), Mt. Rwenzori Girls Secondary School (Kasese), Bwera Secondary School, Bukomero Secondary School (Kiboga), High Standard Secondary School Kateera (Kiboga), Gayaza High School (Wakiso), Masheruka Girls Secondary School (Bushenyi), Masindi Secondary School (Masindi), Iganga Secondary School (Iganga), Trinity High School–Kawempe (Kampala), Aringa Secondary School (Yumbe) and Kapchorwa Senior Secondary School (Kapchorwa).

The 5-day school administrator's ICT4E workshop is the 3rd among the ICT4E capacity building workshops to be conducted by SchoolNet Uganda aimed at building the technical and pedagogical capacities of the project schools to use ICT to enhance teaching and learning.

	Activity	Date
1 st	1- Day Sensitization for Head teachers	Jan 2010
2 nd	5- Day ICT4E Training for 2 teachers from each of the project schools	(17-21) May 2010
3 rd	5- Day ICT4E Training for school administrators from each of the project schools	(16-20) August 2010
4 th	5- Day Technical training for one teacher and one student (preferably a girl) from each of the project schools	Dec 2010

WORKSHOP LEARNING OUTCOMES

The workshop was conducted in such a way as to achieve the following learning outcomes:

- To enhance participants' positive attitude towards the use of ICT in teaching and learning.

- To improve participants' awareness of the potential of ICT to enhance teaching and learning across the curriculum.
- To build participant's skills in using Bestgrade software (<http://bestgrade.org/>) to produce computerized student academic reports.
- To build participants' knowledge and skills of integrating ICT in different subjects across the curriculum.
- To enhance participants' information literacy, Internet research skills and presentation skills.
- To improve participants' awareness of the challenges of implementing ICT4E projects and how these challenges can be addressed.
- To build participants' capacity to implement project-based learning in their schools.

DAY 1 – WORKSHOP PROGRAMME

DAY 1- Mon 16 th August 2010 Programme		
Time	Activity	By Whom
8:30- 9:30 AM	<p>Introductions: Names, subjects, expectations and fears for the workshop.</p> <p>Official opening:</p> <ul style="list-style-type: none"> - Welcome remarks by Host Head teacher. - Opening remarks by SchoolNet Uganda and introduction of facilitators. - House keeping 	<p>Participants</p> <p>Host Head teacher</p> <p>SNU Director</p>
9:30- 11:00AM	<p>Plenary Session: Learning from Peers</p> <p>Participants shared what they are doing with the Close the Gap project computers.</p> <ul style="list-style-type: none"> - Training to teachers and usage by teachers - Training to students and usage by students - Key successes - Key challenges 	<p>Participants</p>

11:00-11:30 AM	HEALTH BREAK & BREAK TEA	
11:30-1:00PM	Plenary Session: Introduction of study cases on Curriculum-Technology Integration based on Bloom's Higher Order Thinking Skills (HOTS)	Kakinda Daniel
1:00-2:00 PM	LUNCH BREAK & LUNCH	
2:00-5:00PM	Hands-On & Minds-On Activity: In small - groups, participants analyzed the given study cases, completed both the minds-on and the hands-on activities and put their presentations together using guiding questions. Facilitators gave help and guidance on needs-basis	Participants. Facilitators
	END OF DAY 1	

(8:30 -9:30) AM: INTRODUCTIONS, EXPECTATIONS, FEARS AND OPENING REMARKS

Participants introduced themselves mentioning their names, schools, expectations and fears for the workshop.

Participants' expectations for the workshop

Participants' expectations for the workshop included:

- To have knowledge about the workshop that would be useful to the teachers and to the students.
- To get exposed to computer skills and knowledge to enable me promote change in my school.
- To have a presentation that would help me reach the global competition.
- To acquire more knowledge at the end of the workshop to add onto what I already have.
- As a Director of Studies (DOS), I want to get more knowledge and skills that will help me ease my work in computing school results.
- To get knowledge and be able to link up with fellow teachers.
- To acquire knowledge and skills of handling computers.
- To get skills in record keeping for example of school files, reports etc.

- To get knowledge of encouraging teachers and students in using computer software, emails, and the Internet for education.
- To get more information that will enable me help both the teachers and the students e.g. computerized testing, how ICT infrastructure can be put in place.
- To hear experiences of fellow schools and also be able to join hands.

Participants' fears for the workshop

The participants' fears for the workshop included:

- Since the workshop is non- residential, participants are likely to arrive late for the workshop since they come from far and traffic might interfere with their movement.
- Some of the participants are fasting and fear that there might be no arrangements for those fasting.
- In the past residential workshops, participants were allowed to use the computers to do Internet research till late at night but this might not happen since this is a non-residential workshop.
- The fact that school starts next week on Monday, we might not be able to prepare well for the beginning of term as we will be in the workshop for the five days.
- Failure to keep time for the workshop activities; on day 1, the workshop started a bit late so some feared that this might go on as the workshop progresses.

Reactions to participants' expectations and fears

- Participants coming from Kampala were advised to board old taxi vehicles because they get full quickly and the drivers know the traffic free routes along Gayaza road. Alternatively participants could think of staying at affordable Guest Houses in Kasangati town (1 km from the workshop venue).
- The computer laboratory was to be left open for the participants to carry out their activities as long as they wanted. The participants were however cautioned to move very late at night.
- Meals were to be provided in time to allow the workshop activities carry on as per the allocated time.

Participants were reminded that the reasons why they were at the workshop was to try and change the way of doing things in their schools and also learn how to build capacity in their schools of how to use ICT to enhance teaching and learning. It was important for the participants to open up, share knowledge and content, map out opportunities for networking and collaboration among schools while at the workshop.

Opening Remarks

(a) Opening remarks by the host Headteacher.

Ronald Ddungu, a Deputy Head teacher of Gayaza High School welcomed the participants on behalf of the Head teacher who was attending another workshop at King's College Budo. He informed the participants that Gayaza High School was always ready and happy to host similar workshops. He assured the participants that the school would do its best to ensure meals are served on time and all logical issues are dealt with professionally and in time.

(b) Opening remarks by SchoolNet Uganda (SNU)

Kakinda Daniel, SchoolNet Uganda Executive Director and Training Director welcomed participants on behalf of SchoolNet Uganda. He thanked the participants for sparing time to attend the 5-day ICT4E workshop for School administrators. He reminded participants that the workshop was non-residential and was organized as a partnership arrangement between the schools and SchoolNet Uganda. The schools were responsible for transport to and from the workshop and for accommodation of the participants. SchoolNet Uganda was responsible for meals, facilitator payments and for workshop materials.

Kakinda introduced the school administrators to three websites run by SchoolNet Uganda.

- 1) The SchoolNet Uganda main website (<http://www.schoolnetuganda.sc.ug>) where participants can obtain detailed information about SchoolNet Uganda, past and present projects, news, testimonies of impact of SchoolNet Uganda on teachers and students, contact information, past and upcoming workshops. He demonstrated how participants can download reports of past workshops.
- 2) The Uganda Digital Education Resource Bank (UDERB) (<http://www.uderb.org>), an online digital library where schools can download past papers and also get links to websites other Ugandan teachers have found useful and relevant to the Ugandan curriculum.
- 3) The World Starts With Me (WSWM) Online Support Centre (<http://www.schoolnetuganda.sc.ug/wswmonlinesupport>) where teachers and students can get answers to commonly asked sexuality questions. He demonstrated how students can submit in their questions to the online support centre.

Kakinda Daniel then took the participants through the Workshop learning outcomes, the workshop programme for the 5 days and introduced the workshop facilitators.

“The workshop has a combination of hands-on and minds-on activities and the facilitators are committed to making your workshop a worthwhile experience for you” Kakinda concluded.

(9:30 -11:00) AM: LEARNING FROM PEERS

(Session was led by Kakinda Daniel)

This was a plenary session where the participants shared what they were doing with the SNU-Close the Gap Project computers indicating the successes achieved in their schools, challenges faced in using these computers, the level of training and usage by the teachers and students.

Sharing by participants

School 1: *“Most of the computers were put in a room for use by the students. A few were put in the staffroom for teachers to use. The separation was done to avoid teachers competing with students for computers in the same room. A generator is used at school in case of power shortage though it doesn’t work for long hours. This becomes a challenge as it limits the time of use by teachers and students who were willing to learn how to use the computer”.*

School 2: *“The computers were put to use. The School Director has provided an Internet modem for connection to the Internet. All teachers have email addresses and the computers are also used by the students and the teachers”.*

School 3: *“The computers were allocated to different places i.e. the staffroom, head teacher’s office and the rest used by the students. The school has Internet and the teachers have picked interest in buying modems and using computers”*

School 4: *“The school installed 9 computers in a small room and one in the head teacher’s office. The school kept the software CDs for further use. The computers in the small room are not yet networked but the school plans to doing so the next term i.e. 3rd term 2010. Some of the teachers type their exams however there are still some teachers who don’t know how to use the computers. Training of students will start soon”*

School 5: *Before the school had 10 computers in one big room but then realized the room was not maximally utilized and thus had to make that room a reading room for students. The 20 computers were allocated to another smaller room. Two of the 10 project computers from have a mechanical problem. The school uses a generator in case of power shortages. One of the students club is making a school magazine using the computers. The teachers are now typing their exams since they claim the secretary makes mistakes when given exams to type.*

School 6: *“The school now has 22 computers in total. One of the 10 project computers was put in the head teacher’s office, one in the bursar’s office to enable her do use computerized services. The school uses a very big generator. The school is planning to install an automatic switch so that the generator goes on automatically when the major grid goes off. The students of S.1 - S.3 have started studying computer lessons and hope to sit the first UNEB computer exam next year. The teachers’ computer literacy rate is about 60% i.e. both the science and arts teachers though a few of them teach from the computer laboratory.*

The big power bills that arise from the computer lab scare the members responsible and claim they are over spending on electricity bills thus a major challenge. The teachers and students use the computers for personal use and not for education purposes yet the head teacher expects them to use them for academic purposes”

School 7: *“The school has now 38 computers. Some are from SchoolNet and others are from other sources. The World Starts With Me program is run using computers by the students in the school. The Arts teachers have still failed to use ICT during their lessons despite the training that they got. The biggest challenge is the very large number of teachers and students compared to the number of computers. The school had recent student unrest because some of the students in big streams of (60-80) students were not getting access to the 26 computers. The teachers have now resorted to allowing about 20-40 students at the time to use the computers”*

School 8: *“The school received 10 computers from SchoolNet Uganda, 4 computers from Cyber, and 8 computers were bought by the school. The school also bought a projector to help out in sharing and communicating information. It also bought a generator but is currently used only during the night by the students of S.1 and S.2 from 7:00pm to 9:00pm. A few teachers use computers”*

School 9: *“The school receives power from 11am -1pm during day and from 7pm throughout the night which makes the computers to be used for basic computer skills teaching to the students in the boarding section and the day scholars miss out on these lessons and use of computers. The school will present for the 1st time students for UNEB computer studies exams this year. The school also plans to extend power in the staffroom and also install computers there. The teachers are willing to learn but have to compete with the students in using the computers. However some teachers bought themselves laptops and also the administrators have a positive attitude on computer usage”.*

School 10: *“The computers were received at the school, before the computer laboratory was set up and thus had to be kept in their boxes. The head teacher put*

some computers in the head teacher's office, the bursar's office, the school Director's office and the Director of Studies' office and the rest remained in the boxes. The school has a challenge of collecting funds to build up a fully established computer lab since the school depends on fees from students which students don't have the money to pay in time. Once the computer lab is set up, the computers will be put in the computer lab for use by the teachers and students. The school also intends to network all the computers"

School 11: *"The computers were received by the school and the school set up a digital library in which all useful content is stored e.g. teaching notes, tests, and was to be used by the online readers. The school employed an old girl of the school to manage the library and guide the students on how to use the digital library. The challenge was that she had a lot of interest in Facebook which also turned the students' interest from academics to using the library for social networking on Facebook. Nevertheless, the idea of the digital library is slowly moving at a gradual level into the school system because the students and teachers do welcome it during their academic lesson".*

As a way of harmonizing, Daniel thanked the participants for sharing what is happening at their schools. He noted that most of the schools in the project are challenged schools with very little financial resources but the participating schools together with the other project partners are committed to working together to make the project a success.

"Indeed, Close the Gap is about bridging the digital gap between the well-to-do schools and the challenged schools" Kakinda added.

Kakinda noted that from the school presentations, the challenges faced by the schools could be categorized as:

- Lack of school policy on access to the computers by both teachers and students.
- Teacher's negative attitude towards the use of computers in teaching and learning.
- Lack of skills on the part of teachers to integrate the use of computers in teaching and learning.
- Moving teachers from personal use of computers to using computers to enhance teaching and learning across the curriculum.
- Lack of networking of computers for resource sharing.
- Lack of digital educational content.
- Misconception among Arts teachers that ICT is only for Sciences.

- Availability of electricity and high cost of using generators.
- Availability of enough space to accommodate the computers or having a room dedicated as a computer laboratory.

“It is important to note that these are just challenges and not problems. Challenges should not paralyze us but should only make us think more creatively and innovatively. Throughout the workshop, there will be opportunity to brainstorm and share how the challenges can be addressed” Kakinda concluded.

(11:30-1:00)PM: INTRODUCTION OF THE STUDY CASES

(Session was led by Kakinda Daniel)

Kakinda Daniel introduced participants to the study cases involving Integration of ICT in the teaching and learning process. Participants were asked to form small groups of 2-3 participants. Each group was required to choose one of the study cases for analysis. The groups were encouraged to try other study cases in case time allowed.

Study case 1: Digitizing School Educational Content.

The Head teacher of one of the Uganda schools was unhappy with the way the school educational resources like past papers, schemes of work etc. were archived. Storage and retrieval of information from the archive had a number of challenges.

Fortunately the school received 10 computers from SchoolNet at the beginning of 2010. The Head teacher bought a Scanner for the school which was used to digitize the school educational materials in an effort to convert the print library to a digital library.

The Head teacher also solicited for exam papers from other schools to enrich the school digital library.

The computers were networked and then connected to the school digital library. This solved most of the challenges of storage and access by teachers and students.

(a) Hands-On Activity

- 1) *Use a scanner to digitize the UNEB past paper provided so that it is converted into a Word document.*
- 2) *Access the Uganda Digital Education Resource Bank (UDERB) (<http://www.uderb.org>) and download one subject paper of your choice. UDERB is an online digital library run by SchoolNet Uganda.*

- 3) Access the ELATE (<http://elateafrica.org>)- (E-learning and Teacher Education) materials to support secondary teachers run by school of Education, Makerere University. Download the UNEB O'level syllabi for Biology and Geography.

(b) Minds-On Activity

- 1) What challenges was the school facing which the Head teacher wanted to address by digitizing the content?
- 2) What equipment/materials did the Head teacher need to buy in order to network the ten computers received from SchoolNet Uganda? (Hint. You may visit the Gayaza High School Digital Library).
- 3) What ICTs could the Head teacher have used to solicit digital materials from other schools and other sources?
- 4) What are the advantages and disadvantages of a digital library over a traditional print library?
- 5) What was your experience with the hands-on activity?

(c) Hands-On Activity

As a group, prepare a 10 min PowerPoint Presentation to be presented at the plenary session of your responses to the minds-on activity and your experience with the hands-on activity. Also be prepared to make a collaborative presentation at the plenary session.

Study case 2: Integration of ICT in English Language. & Literature

A fresh graduate English language & literature teacher was posted to an under-resourced school. The teacher realized that the students perform badly not only in English but in also other subjects because of their poor linguistic abilities.

The teacher talked to the school Head teacher about the possibility of the school buying readers and novels for the students. The Head teacher explained to the teacher that due to the financial constraints of the school, it was not possible for the school to buy novels for students.

The school however had just got 10 computers from SchoolNet Uganda which were currently used for computer literacy and for playing games.

The teacher visited a nearby Internet Café and first searched the Internet for Animal Farm by George Orwell and its study guides.

The teacher found the following Internet website links.

(i) Animal Farm by George Orwell (the novel)

[\(http://www.george-orwell.org/Animal_Farm/](http://www.george-orwell.org/Animal_Farm/)

(ii) . A Study Guide to Animal Farm

http://www.cliffsnotes.com/study_guide/literature/Animal-Farm.id-12.html

(iii) . A Study Guide to Animal Farm

<http://www.sparknotes.com/lit/animalfarm/>

SparkNotes are study guides that include summaries of literature written by graduate students or teachers who are experts on a specific subject matter.

The teacher saved the information on a flash disk.

The teacher searched for other useful websites and found one where there were a number of novels (<http://www.literature.org>) which the teacher shared with other language teachers in other schools by email.

As the teacher was returning to school, he bought an Animal Farm DVD from a hawker which he showed to his students.

In addition to using the resources in class, the teacher shared the resources on the school computers and made arrangements for the English language and Literature students to use the computers for reading the novels and study guides.

(a) Hands-On Activity

- 1) Read through the study guides for Animal farm and comment on the quality of the quality of the study guides the teacher found on the Internet.
- 2) Visit the literature website (<http://www.literature.org>). Browse through the novels available. Which of the novels available do you use or would like to use at your school?

(b) Minds-On Activity

- 1) *Which of the challenges faced by schools in providing quality education did the teacher try to address?*
- 2) *What ICTs did the teacher use and for what teaching & learning activity (e.g. research, preparation, lesson delivery, student assignment, etc.).*
- 3) *What was the added value of using ICT in each of the activities you have identified?*
- 4) *Would you recommend teachers in the English language Dept. in your school to use Internet to supplement the available teaching and learning resources?*
- 5) *What support would be needed from the school administration and what skills would the teachers need to use Internet as a teaching and learning resource?*

(c) Hands-On Activity

As a group, prepare a 10 min PowerPoint Presentation of your minds-on and hands-on activities to be presented at the plenary session. Also be prepared to make a collaborative presentation at the plenary session.

Study case 3: Using Photos and video to enhance teaching and learning in Geography.

A Geography teacher after realizing that a number of students were losing interest in Geography and were complaining about him to the school administration and to their parents decided to try using videos and photos in his lessons.

He decided to try out his new teaching strategy with the topic of Mountain Vegetation Zones for mountains around the equator like Mt. Kilimanjaro, Mt. Kenya & Mt. Rwenzori. The students had particularly found this topic abstract.

He searched the Internet for photos of the different vegetation zones (Savanna grassland, Savanna woodland, tropical rain forest, temperate forest, bamboo forest, heath zone, moorland, bare rock and snow cap) of Mt. Rwenzori which he composed into a PowerPoint presentation which he used for the remedial class.

The teacher also borrowed a video showing people climbing Mt. Kilimanjaro which he showed to his students. The photos and the video did the magic for the teacher.

Minds-On and Hands-On Activity

- 1) *What was the added value of using photos and the video which made the magic for the teacher?*
- 2) *Use the Internet to get photos of coastal features and put together a PowerPoint Presentation to be used by the teacher for the topic on coastal features.*
- 3) *As a group, prepare a 10 min PowerPoint Presentation to be presented at the plenary session of your responses to the minds-on activity and your experience with the hands-on activity. Also be prepared to make a collaborative presentation at the plenary session.*

Study Case 4: Using the world as a learning resource through tele-collaboration (inter-disciplinary).

A Geography teacher after realizing that a number of his students had lost interest in geography because a number of geography concepts were abstract and alien to the students, he decided to join iEARN (International Education and Resource Network) – an international network of educators for the purpose of knowledge sharing and peer learning.

One day he sent an email to the network requesting for some Visual Aids for his Geography lesson.

Below is the email the teacher sent out:

Request for some Winter Pictures

Dear All,

Merry Christmas and happy New Year. Greetings from Uganda. After the festive session, I will be teaching a Geography lesson on seasons of the year. Unfortunately my students have no sense of what winter looks like because Uganda is found around the equator so basically the weather is almost the same throughout the year.

Kindly send me some high resolution pictures showing how winter looks like. Send them directly to my email address; dkakinda@yahoo.com

Also indicate the country where the picture has been taken. Thanks for contributing to the improvement of the quality of my lesson.

*Kakinda Daniel
iEARN-Uganda Coordinator*

The teacher was astonished and overwhelmed by the very quick and rich response from members of the network. Within one day, the teacher had got winter pictures from France, the Netherlands, Belarus, Russia and Siberia.

This later developed into a tele-collaborative project between his students and of a school in Belarus where students continued discussing different aspects of their lives.

(a) Hands-On and Minds-On Activity

- 1) Go through the PowerPoint presentation of the winter pictures the geography teacher received from the iEARN network and the discussions that went on.*
- 2) What is tele-collaboration?*
- 3) What is needed to participate in a tele-collaborative activity or project?*
- 4) What ICTs did the geography teacher use in the tele-collaborative activity and what was the added-value of using each of the ICTs you have identified?*

(b) Exercise: Benefits of tele-collaboration

Either:

Share any telecollaborative activity/project you have been involved in.

- 1) What did you benefit as a teacher?*
- 2) What did your students benefit?*

OR:

Study the two telecollaborative activities below

- (i) "A day in the life of me"*
- (ii) "Traditional dress"*

- 1) What did the teachers benefit in each case?*

2) *What did your students benefit in each case?*

(c) Hands-On Activity

As a group, prepare a 10 min PowerPoint Presentation of your hands-on & minds-on activity and exercise to be presented at the plenary session. Also be prepared to make a collaborative presentation at the plenary session.

Study Case 5: Lesson Preparation- Biology: Mendel's Genetics & Inheritance

Last term, the S4 Biology teacher of a certain school left for greener pastures. Attempts by the school to get a replacement were fruitless. The school administration asked one of the Physics teachers who had done PCB at A' Level to assist the S4 students complete the remaining topic of the Biology syllabus – Genetics.

Faced with this new challenge, the Physics teacher did research on the Internet for notes, diagrams, photos and animations covering the following areas.

- 1) *What is genetics and Mendel's genetics?*
- 2) *Mendel's experiments with pea plants.*
- 3) *Walk through Mendel's genetic garden.*
- 4) *Results of Mendel's experiments.*
- 5) *Phenotype and Genotype.*
- 6) *Mendel's laws or principles of inheritance.*
- 7) *Mendel's genetic disorders.*
- 8) *Human Autosomal Recessive Disorders.*
- 9) *Albinism*
- 10) *Sickle Cell Anemia*
- 11) *X-Linked Recessive Disorders*
- 12) *Hemophilia*
- 13) *Green-red colour blindness*
- 14) *Importance of studying Mendel's Genetic Disorders*

The teacher also recorded some educational content related to Genetics and Genetic Disorders from NTV and WBS. The teacher then put together a Multimedia PowerPoint presentation which he used to teach the lesson.

Minds-On and Hands-On Activity

- 1) Go through the notes, the animations and the lessons the teachers recorded from the TVs and evaluate the quality and relevance of the lesson preparation.
- 2) What ICTs did the teacher use in the lesson preparations and what was the value added in using the identified ICTs?
- 3) Do an Internet research and obtain two Internet resources which the students can use for reference.
- 4) What skills do the teachers need for them to be able to use the Internet as a teaching and learning resource?
- 5) As a group, prepare a 10 min PowerPoint Presentation to be presented at the plenary session of your responses to the minds-on activity and your experience with the hands-on activity. Also be prepared to make a collaborative presentation at the plenary session.

Study Case 6: The Cold war – The Cuban Missiles Crisis.

A history teacher interested in making History a lively subject used the following lesson plan for her double lesson of 80 minutes on the Cuban missiles crisis under the topic of Cold War. The Cuban missiles crisis was the peak of the Cold War when the world came nearest to the blink of a nuclear war.

Time (min)	Activity
10 min	The teacher made a recap on the causes of the Cuba Missiles Crisis. This was discussed in the previous lesson
40 min	The teacher showed the students a documentary video on the Cuba Missiles Crisis that he had on a DVD
25 min	The teacher harmonized the key events of the of the crisis at the end of the video with lesson notes

5 min	<p>The teacher gave the students a take home exercise in which the students were to do an Internet research about:</p> <p>a) The consequences /Results of the Cuban Missile Crisis.</p> <p>b) The possible consequences of a nuclear war?</p>
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Minds-On and Hands-On Activity

- 1) Read through the teacher's notes and watch the documentary on the Cuban Missile crisis.
- 2) What challenges of providing quality education did the teacher try to address by using the documentary?
- 3) What ICTs did the teacher use and for what teaching & learning activity (e.g. research, preparation, lesson delivery, student assignment, etc.)?
- 4) What was the added value of using ICT in each of the activities you have identified?
- 5) Do an Internet research to find:
 - (i) The consequences /Results of the Cuban Missile Crisis.
 - (ii) The possible consequences of a nuclear war
- 6) What was your experience with the hands-on Internet research activity?
- 7) Would you recommend teachers in your school to ask students to use Internet for research?
- 8) What skills would you need to impart to your teachers and students for them to be able to use Internet for research and reference.
- 9) As a group, prepare a 10 min PowerPoint Presentation of your hands-on and minds-on activity to be presented at the plenary session. Also be prepared to make a collaborative presentation at the plenary session.

Study Case 7: Modern Physics- Uses of X-rays, Healthy Hazards and Safety Precautions

A Physics teacher used the following lesson plan (80 min)

Time (Min)	Activity
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20 min	Learners share experiences with X-ray photography and X-ray radio therapy.
10 min	Teacher shows a video clip of X-ray Radio therapy
30 min	Guided discussion arising from the video clip and harmonization
20 min	Notes to the students and Internet reference for further reading. http://ww5.komen.org/BreastCancer/BreastSelfAwareness.html http://www.thebostonchannel.com/2007/0925/14199814.swf

Minds-On and Hands-On Activity

- (i) Watch the video clip on X-ray radio therapy. What was the added value of using the video in the lesson?
- (ii) Visit and read through the Internet references, the teacher gave to the students. What was the added value of using the Internet for reference?

(2:00 – 5:00)PM: Minds-On and Hands-On Activities

In small - groups, participants analyzed the given study cases, completed both the minds-on and the hands-on activities and put their presentations together using guiding questions.

Facilitators gave help and guidance on needs-basis

-----END OF DAY 1-----

DAY 2 WORKSHOP PROGRAMME

DAY 2- Tues 17 th August 2010 Programme		
Time	Activity	By Whom
8:30-8:50AM	Hands-On Activity: Completion of group presentations	Participants
8:50-9:00AM	Plenary Session: Process Journal (10 min) Participants make entries in their process Journals related to experiences, learning points etc. related to Day 1	Participants
9:00-10:00AM	Plenary Session: Discussion of two of the study cases	Participants
10:00-11:00AM	Plenary Session: Small group presentations of study cases	Participants
11:00-1:30AM	HEALTH BREAK & BREAK TEA	
11:30 -1:00PM	Plenary Session: Small group presentations of study cases.	Participants
1:00-2:00 PM	LUNCH BREAK & LUNCH	
2:00-3:00PM	Guided Hands-On Activity: Introduction to Bestgrade software for computerized students' reports.	Ronald Ddungu
3:00-5:00PM	Hands-On Activity: Participants produce computerized reports for one class using the mark sheet provided. Facilitators to provide help and guidance on a needs-basis	Participants
	END OF DAY 2	

(9:00 -10:00) AM: PLENARY SESSION: DISCUSSION OF TWO STUDY CASES

(Session was facilitated by Kakinda Daniel)

At a plenary session the participants together went through two study cases; Study Case 7 (page 18) and Study Case 4 (page 14).

1) Study Case 7: Modern Physics – Uses of X-rays, Health hazards and Safety Precautions.

Participants watched the video clip on X-ray radio therapy.

Minds-On Activity

What was the added value of using the video in the lesson?

Responses:

The added value of using the video included:

- Bringing the environment into the classroom i.e. bring real life situations into the classrooms. This helped the students to relate what they learn in class to what is happening in daily life, something which can happen to anyone.
- The teacher was also able to bring an expert (doctor) into the classroom to talk about how cancer is treated in hospitals rather than the teacher trying explaining something of which the teacher is not an expert. This attracted students' attention and enabled easy understanding of the topic by the students.
- The fact that the people in the video (the doctor, the patient etc.) were Ugandans, students easily related with the video and easily realized that what they were learning about happens in their communities.
- The video brought out clearly the health hazards and the safety precautions needed to be taken when dealing with ionizing radiations.

What was the added value of using the Internet for reference?

Responses:

The Internet websites provided a lot of information about breast cancer including self-awareness tests which the students could carry out. This greatly supplemented the teacher's notes.

2) Study Case 4: Using the world as a learning resource through tele-collaboration (inter-disciplinary) (Page 14)

Minds-On Activity

(i) What is tele-collaboration?

Participants' responses:

Tele-collaboration refers to working together on projects over a distance but using technology like emails.

Facilitator's harmonization

Tele-collaboration is an educational activity that involves students in different locations using Internet tools and resources to work together.

(ii) What is needed to participate in a tele-collaborative activity or project?

Participants' responses:

Internet and email

Facilitator's harmonization

- Knowledge about the subject or topic and willingness to learn.
- Technology like computers, digital and video camera, scanners, Internet etc.
- Skills such as technology literacy, information literacy, creativity, research, communication and team work.
- People to communicate to (schools, teachers, experts etc.)

(iii) What are the benefits of participating in tele-collaborative projects for students and teachers?

Participants' responses

- Students get to acquire skills of communication.
- It stimulates students' interest in the teacher's subject.

Facilitator's harmonization

By participating in global telecollaborative projects, students:

- Develop social skills like team work, collaboration, communication, cross-cultural understanding and sensitivity.
- Develop technology, information literacy, research and analytical skills.
- Are motivated to become involved in authentic projects and to write for a real audience of their peers instead of merely composing for the teacher.

- Develop critical thinking because they move from being passive learners to participants and collaborators in the creation of knowledge and meaning.
- Develop real world skills and learn best by doing.

By participating in global telecollaborative projects teachers:

- Network with educators around the world beyond their classroom.
- Share best practices and become part of a greater community of educators.
- Facilitate rather than teach and learn side by side with their students.
- Get an opportunity for professional development
- Use the world as a teaching and learning resource.

(10:00 -1:00)PM: PLENARY SESSION – GROUP PRESENTATION OF STUDY CASES.

(a) Study Case 1: Digitizing School Educational Content (Page 10) Presentations

There were two groups which had analyzed this study case.

Group 1: Minds-On Activity Presentation

1) *What challenges was the school facing which the Head teacher wanted to address by digitizing the content?*

- Difficulties in accessing stored information e.g. looking for information of 1998 thus digitizing the content would save time and energy which would be required looking through piles of papers.
- Poor storage of information. These papers were exposed to dirt and tear and wear.
- Wastage of space. Keeping these papers in the office was reducing the office space which can be increased when the data is stored in a digital library

2) *What equipment/materials did the Head teacher need to buy in order to network the ten computers received from SchoolNet Uganda? (Hint. You may visit the Gayaza High School Digital Library).*

- D-link switch- where all cables from computers are linked
- Network cables
- RJ45 Connectors placed at the end of the Network cables

- Router and a modem in case the Internet is needed.

3) *What ICTs could the Head teacher have used to solicit digital materials from other schools and other sources?*

- A Scanner to digitize the documents from hard copy to soft copy.
- DVDs/CDs.
- Flash disks for collecting data of more than 1GB from one place to the digital library.
- Digital Cameras to take useful pictures which were added into the digital library.

4) *What are the advantages and disadvantages of a digital library over a traditional print library?*

Advantages:

- Convenient to use.
- Easy access & retrieval of information.
- Easy sharing of information.
- Occupy little space compared with the traditional library

Disadvantages:

- Loss of information due to power surge, theft, virus attacks or any other malicious damage.
- Inaccessibility of information when there is no power or there is computer break down.

5. *What was your experience with the hands-on activity?*

- Learnt how to use a scanner to digitize past papers or any other useful information for the school and even for personal uses.
- Learnt how to download content from websites.
- Noted that, a digital library is the most convenient method for information and knowledge storage and sharing.
- Noted that, so long as security is not compromised, having a digital library is the only way forward for schools.

Group 2: Minds-On Activity Presentation

1) *What challenges was the school facing which the Head teacher wanted to address by digitizing the content?*

- Space was limited
- Manpower was needed for filing the data.
- Documents were dusty.
- Retrieving information was difficult.
- Documents could be easily destroyed by termites and rats.

2) *What equipment/materials did the Head teacher need to buy in order to network the ten computers received from SchoolNet Uganda? (Hint. You may visit the Gayaza High School Digital Library).*

- Content server acting as the central storage unit.
- D-link switch- where all cables from computers are linked.
- UTP Network cables that connect computers to the server.
- RJ45 Connectors- connect cables to the switch.
- Router in case the internet is needed.

3) *What ICTs could the Head teacher have used to solicit digital materials from other schools and other sources?*

- E-mails from/to other schools aimed at exchanging information.
- From the Internet café information can be got.
- Visit to different educational websites e.g. Uganda Digital Education Resource Bank
- Flash discs.
- Scanner.
- Educative programs on television

4) *What are the advantages and disadvantages of a digital library over a traditional print library?*

Advantages:

- Less space is required to store a lot of information.
- Less bulky i.e. it saves one from the burden of carrying a pile of many files from one place to another.
- Many people can access the information which may be stored on one server.
- Information lasts for a longer time i.e. information on paper can fade off at some time in the later date and thus becomes hard for one to read the information on it.
- Information can be shared.

Disadvantages:

- It is expensive in terms acquiring the equipment.
- Requires skills to operate.
- Requires power which is not available in some areas.
- It can't be easily moved/may not be accessible beyond the library in case it is a day school and students want to use the service at home.
- It is delicate since information can be lost if deleted.
- In case of power failure there is no access and information can be lost. Information may be lost in case virus attacks.

5) *What was your experience with the hands-on activity?*

- Learnt how to make a PowerPoint presentation.
- Learnt how to scan documents.
- Found scanning documents and using Internet for research very interesting.
- Were now able to look for and download materials from the Internet.

Facilitator's Harmonization

As a way of harmonization, Kakinda Daniel informed the participants that:

- Setting up a digital library is not very expensive, the cost of switches is coming down every day, a Scanner may cost around 180,000/=, DVDs cost 1,000/= each and the school can use a modem for Internet.

- When buying a scanner, they should ensure it has an OCR (Optical Character Recognition) feature which enables it to change printed words into text just like the scanner they had used at the workshop (HP Scanjet G2410 Flatbed Scanner).
- Should always have a backup of the digital content on another computer or an external hard disk.
- Should install anti-virus software on all computers and should scan the computers regularly for viruses.
- Should store their files as PDFs since PDFs are not easily affected by viruses.
- Should have a budget for computer repair and maintenance.
- Can use wireless connections instead to network cables to reduce cost, congestion in the computer lab and to increase the access coverage of the digital library.
- Should use SMART UPS to protect the computers against unstable power and power surges.
- Should remember to send teacher and a student (preferably a girl) to the Technical Capacity Building workshop to be conducted by SchoolNet Uganda in Dec 2010.

Action Points Regarding the Digital Library

The School administrators agreed on the following action points:

- All computers at school have to be networked so that one can easily access information on one computer from another computer.
- Each school will collect all the past papers, digitize them and store each of them on subject based folders, in class level basis.
- These should be stored on all the computers and this was to be done before the end of the year.
- For the next ICT4E workshop, each representative of a school should come with a CD containing past papers to be shared with different schools.
- In every school, the head teacher should have his own digital library having duty reports, schemes of work, exam papers and reports from the teachers etc.

(b) Study Case 2: Integration of ICT in English Language and Literature

Minds-On Activity Presentation

- 1) *Which of the challenges faced by schools in providing quality education did the teacher try to address?*
 - Shortage of teaching and learning resources in schools.
 - Loss of interest in English literature lessons by students as a result of failure to interpret the literature novels.
 - Limited resources available to the teachers especially study guides.
- 2) & 3) *What ICTs did the teacher use and for what teaching & learning activity (e.g. research, preparation, lesson delivery, student assignment, etc.) and what was the added value of using ICT in each of the activities you have identified?*
 - The teacher used the Internet for lesson preparation which greatly improved the quality of the teaching resources and eased the teachers' work. The use of Internet also broadened the teacher's thinking.
 - The use of the DVD in the lesson delivery made the lesson more interesting and easy to understand
- 3) *Would you recommend teachers in the English language Dept. in your school to use Internet to supplement the available teaching and learning resources?*
 - The material is highly recommended for the schools because it enhances students' interest in the subject , empowers the students d with reading, writing, listening and oral skills as well as study skills as well as broadening the teacher's thinking.
- 4) *What support would be needed from the school administration and what skills would the teachers need to use Internet as a teaching and learning resource?*
 - Budget for ICT equipment maintenance, repair and purchase and for Internet connectivity.
 - Budget and organize ICT4E capacity building workshops for all teachers and school administrators.
 - Send and support teachers and school administrators to national ICT4E workshops.
 - Encourage and support networking and collaboration between differences schools across the country and globally.

Study Case 3: Using photos and video to enhance teaching and learning in Geography.

Minds-On Activity Presentation

- (i) *What was the added value of using photos and the video which made the magic for the teacher?*

The use of the photos and the video:

- Makes understanding of the vegetation zones much easier as it helps both the teacher and the student to visualize abstract concepts.
- Increases students' interest in learning.
- Saves the teacher from the burden of explaining.

Hands-on activity Presentation

The group made a PowerPoint presentation having photographs showing the following features: blowhole, cave, lagoon, estuary, bay, stacks, fiord, sand bars, tombolo, cliff, sand dunes and coral reefs.

Study Case 5: Lesson Preparation – Mendel's Genetics and Inheritance (Biology)

Minds-On Activity Presentation

- (i) *What ICTs did the teacher use in the lesson preparation and what was the value added using the mentioned ICTs?*

- The teacher used a number of ICTs in the lesson preparation:
- TV sets i.e. biology lessons conducted from NTV.
- Computer which was used to make the PowerPoint presentation.
- Video recorder was used to get a clip from the TV.
- Scanner was used to scan the pictures to be used for the lesson.
- CDs, DVDs, Flash were used to store the information for the lesson.

- (ii) *What was the value added of using the identified ICTs?*

- The lesson was more practical i.e. the learners observed the movement of pollen grains from the anthers to the stigma. Thus the students could easily understand what the teacher was talking about since it is seen physically.
- The teacher noted that students love innovativeness thus by using these gadgets, one can reduce absenteeism of students, since they like the subject and the teacher too.
- The lesson becomes more attractive and enjoyable i.e. when one practically uses or applies ICT equipment in teaching/learning process.
- The use of images i.e. the different colors, sizes and shapes make learners to be more attentive and follow the lesson in progress.
- Interactive nature i.e. at the end of the lesson, there were question for learners and this made it more interactive.
- The teacher was also saved from the burden of over explaining, drawing many diagrams for the students to understand what he is talking about because they can easily see everything from the video. This also prevents the teacher from getting a headache.

(iii) Comment on the quality of the materials of the lesson

The presentation was generally good because of the following:

- Use of Video clips adds an added motivation to the learners.
- Use of animations made the learners to see how the whole process went about.
- Proper use of teaching/learning aids.
- Use of various methods of teaching e.g. observation, chalk and talk, demonstrations.

(iv) What was your experience with the hands-on activity?

- Learned how to search and get information in a faster way from the Internet.
- Learned that it is possible to download content from an Internet café to be used by the students.
- Noticed that materials can also be shared inter-departmentally e.g. geography and biology.
- Before the Hands-on activity didn't know how to create slides both for words and pictures and make PowerPoint presentations but they learnt while doing the activity.

Study Case 6: The Cold War – The Cuban Missiles Crisis

Minds-On Activity Presentation

(i) *What challenges faced by schools in providing quality education did the teacher try to address?*

- The misconception among most Arts teachers that ICT is only for science subjects.
- The misconception among teachers and students that history is a dead subject which can only be taught by lecturing and learnt by cramming.
- The boring lecture methods which are used by most History teachers.

(ii) *What ICTs did the teacher use?*

- Computers and video

(iii) *What was the added value of using the ICTs you have identified?*

- The use of the documentary made the history lesson practical i.e. the students were able to see and follow the Cuban missile crisis.
- The documentary provided authentic information because it involved real people who were involved in the crisis.
- Students developed a variety of skills like observation, listening, interpretation and documentary analysis.

(iv) *What was your experience with the Hands-on activity?*

- It was not easy to move from one stage to another, as it was a first experience
- The audio was not clear since the documentary involved two languages

Action Points:

After the group presentations the school administrators agreed on the following action points.

- 1) School should pay a membership subscription of 150,000/= to British Council so that they can borrow videos different subject videos.
- 2) The Geography department of each school should take geographical pictures of physical features near the school and share them with other schools.
- 3) Schools should share photographs and videos they take on Field work trips with other schools.

- 4) Schools should share website links they have found useful with other schools.
- 5) Schools should buy scanners and scan the geography maps for their digital libraries and for sharing with other schools.
- 6) Schools should organize ICT4E professional development workshops for their teachers so that can use the Internet and other ICT to improve teaching and learning.

(2:00 -3:00) PM: GUIDED HANDS-ON ACTIVITY- INTRODUCTION TO BESTGRADE SOFTWARE FOR COMPUTERIZED STUDENTS' REPORTS

(Session was facilitated by Ronald Ddungu)

Ronald started the session by asking the participants the advantages of having a computerized report making system compared to the manual system of making reports.

Participants' responses were:

- Computerized reports are neat.
- They can be filled in by different people at the same time other than having one report book which has to move from one person to another.
- Information can easily be retrieved.

Ronald Ddungu assisted by Chole Richard and Ronald Kasendwa introduced participants to Bestgrade software (<http://bestgrade.org>) for computerizing students' reports. Best Grade is a free school management program designed for use by schools in sub-Saharan Africa and pioneered in Senegal but has now been customized for Uganda schools.

In pairs, participants completed reports for at least one class including 1st term, 2nd Term and 3rd Term marks and filled in remarks.



Figure 2 : School administrators doing hands-on activities with Bestgrade software

(3:00 -5:00) PM: HANDS-ON ACTIVITY – PRODUCTION OF COMPUTERIZED REPORT

Participants produced computerized reports for one class using the mark sheet provided.

Facilitators provided help and guidance on a needs-basis.

----- **END OF DAY 2** -----

DAY 3 WORKSHOP PROGRAMME

DAY 3- Wed 18 th August 2010 Programme		
Time	Activity	By Whom
8:30-9:00AM	Hands-On Activity: Participants complete their work with using Bestgrade for computerized reports.	Participants
9:00-10:00AM	Plenary Minds-On Activity: Reflection and discussions on using Bestgrade for computerized students' reports.	Participants
10:00-11:00AM	Plenary Brainstorming: Innovation and Creativity	Kakinda Daniel
11:00-1:30AM	HEALTH BREAK & BREAK TEA	
11:30 - 12:00PM	Plenary Brainstorming: Innovation and Creativity	Kakinda Daniel
12:00PM-1:00PM	Plenary Session: Presentation by Second Life Company.	Robert-Jan Nieuwpoort
1:00-2:00 PM	LUNCH BREAK & LUNCH	
2:00-2:30PM	Plenary Presentation: Introduction to the Innovative Teachers, Forum	Ronald Ddungu
2:30-3:20 PM	Project Exhibition: Uganda Innovative Teachers Forum projects to be presented at the Pan-African Innovative Teacher's Forum to be held in Mombasa, Kenya (24-28) Aug 2010. Each exhibitor has 15 mins. All participants visit one stand at a time.	Jonathan Serunkuma Elizabeth Rwabu Solomon Asea
3:20-4:00PM	Plenary Session: Participant's Input Participants advise the Uganda Innovative teachers how they can improve their projects.	Participants

4:00 -5:00PM	Plenary Session: Benefits of participating in projects- A student perspective	Bukirwa R. Kasendwa R.
END OF DAY 3		

(9:00 -10:00) AM: Plenary Minds-On Activity: Reflection and discussions on using Bestgrade for computerized students' reports.

Participants were asked to share their reflections on using Bestgrade to computerize students' reports, the challenges they anticipated in implementing Bestgrade in their schools and possible ways of mitigating the challenges.

Participants' Reflections

a) The good things with Bestgrade Software

"Bestgrade is easy to learn, saves time and space, is highly flexible and caters for all levels (Primary, Secondary both O' level and A' level)"

..... Magabi Stephen, Iganga SS, Uganda.

"Bestgrade is wonderful software that eases the processing of report cards. It is an exciting innovation that encourages me as a teacher to apply ICT in implementing my roles and responsibilities. I have got to implement it in our school after acquiring the necessary training. I wish all schools in Uganda are trained on how to use Bestgrade for processing reports"

..... Achaye Innocent, Gulu College, Uganda.

"Bestgrade is timesaving and the neatness of the product is ensured. The softcopy can be used to produce a report for a particular student when need arise"

..... Kumakeck Godfrey Ovona, Gulu S.S, Uganda

"Bestgrade is good, accurate with limited mistakes and makes report making easier and encourages many teachers to access the computer to feed in their marks and remarks"

..... Baduru Florence, Bukomero SS, Uganda

“Bestgrade is easy to operate and reduces problems of keeping bulk printed reports”

..... Adrole Abdalatif Moses, DOS Aringa SS, Uganda

“The reports produced by Bestgrade are pretty good. Marks can be entered easily so long as the names are arranged properly. Comments regarding the marks can be altered according to the school’s needs”

.....Abwola Mono James, Headteacher Gulu College, Uganda

“Bestgrade gives accurate and neat work. It makes making reports faster and easy since all the calculations are automatically made. It makes forgery difficult by students since the report have the student’s photograph”

..... Adman Sarah, Arunga SS, Uganda

“Reports produced by Bestgrade are standardized, mistakes are easy to correct, grading is automatic and errors and omissions are easily identified”

..... Ndungo- Muhindo Jonathan, Bwera SS

(b) Suggestions for areas of improvement

- 1) Include provision for when the new term (following term) will open and end.
- 2) Include a provision for position of student in each subject.
- 3) For S1 and S2, base the overall positioning on the total mark.
- 4) Could the signatures for the teachers, Head teacher and all those involved in processing reports be uploaded into the system so that they are automatically appended to the reports to ease the work?
- 5) On the student’s information, it would be better if there is a provision for the student to sign as the student picks the report to ascertain the correctness of the information therein.

- 6) There should be two report options –one for Boarding and one for Day schools. The Boarding schools need remarks for the Class teacher, Warden and Headteacher whereas the Day schools need comments only from class teacher and Headteacher since the Day schools don't have wardens.
- 7) Some teachers, who are not computer literate, can easily delete all the marks from the system. There is need to put safely precautions against this.
- 8) In some schools, promotion to the next class is based on cumulative marks. The 3rd Term report card should be designed as:

subject	1 st Term Marks	2 nd Term Marks	3 rd Term Marks	Average	Grade	Remarks

- 9) The comments for specific subjects need to be adjusted based on the performance in that particular subject.
- 10)The ranking needs to be adjusted to conform to the UNEB ranking system.
- 11) Include a provision for the fees to be paid the following term and the balance for that particular term. This will be filled in by the school Bursar.
- 12)Include space for comments from the school nurse.

(c) Anticipated challenges of implementing Bestgrade Software in schools

The school administrators mentioned the following as the challenges they anticipated in the implementation of Bestgrade Software in their schools and suggested ways of mitigating these challenges.

Anticipated Challenge	Suggested Mitigation factor
Resistance from teachers to adapt the	<ul style="list-style-type: none"> • Ensure the program is put on all the school computers • Get some teachers to pilot the program starting with one or

computerized reports.	<p>two classes.</p> <ul style="list-style-type: none"> • Involve the Director of • Studies (DOS) to drive the process and to ensure success. • Train the teachers in Computer literacy and on the Bestgrade program. • Demonstrate that Bestgrade actually simplifies teachers' work.
The low attitude of teachers towards ICT and the computer illiteracy of teachers in the field are likely to delay the successful implementation of the program	<ul style="list-style-type: none"> • Conduct sensitization workshops for teachers on the benefits of ICT4E. Invite SchoolNet Uganda to participate in the sensitization workshops. • Train teachers in basic ICT skills • Conduct short workshops on using Bestgrade for computerizing reports.
Motivation for the teachers	Show that Bestgrade is easy to learn, produces accurate and more professional work and simplifies processing reports.
Failure to train all teachers because of lack of power	<ul style="list-style-type: none"> • Use generators • Train teachers in phases. • Encourage peer-to-peer teaching and learning among teachers.
Skills of using Bestgrade remain among a few trained teachers	<ul style="list-style-type: none"> • Always organize school-based workshops to cascade the training acquired at national workshops. • Send different teachers/administrators for the different national workshops so that the skills are not monopolized by a few people.

(10:00 -12:00) AM: Plenary Brainstorming: Innovation and Creativity
(Session was led by Kakinda Daniel)

The brainstorming engaged participants in a discussion involving four questions:

- 1) What is Innovation?
- 2) Why do we need to innovate?
- 3) What is the difference between Innovation and Creativity?
- 4) What are the examples of Innovation and creativity?

Q1: What is innovation?

Responses:

- Innovation refers to creating change within existing infrastructure to get better results.
- Innovation refers to creating new and simpler ways of doing daily things but in a new way e.g. valuation of students in the educational system.

Harmonization:

Innovation is “**thinking out of the box**” as opposed to doing things “**business as usual**”.

Q2. Why Innovate?

Kakinda asked the participants whether it was right for him to teach his students the way he was taught 30 years ago at school.

Response:

Participants replied that it wouldn't be right because the generation of students has changed i.e. today the number of students in a class has increased to over 100 students different from over 30 students per class back then, students life styles today have also changed and their interests have changed thus the teaching methods should also change. The teacher today has to constantly come up with new methods of teaching to address the emerging challenges i.e. has to “think out of the box’ or innovate.

Harmonization:

Below are some of the reasons why innovation is needed:

- To make a positive change or do something better.
- To increase productivity and efficiency.
- To reduce labour costs.

- To Increase benefits of doing a task.
- To lower costs (time, money, difficulty, required skill level, physical pain, harm or risk, inconvenience, embarrassment).

Daniel illustrated the reasons for innovation using the SchoolNet Uganda WSWM Online line support (<http://www.schoolnetuganda.sc.ug/wswmonlinesupport/>) which was set up to provide online sexuality counseling to students and teachers at low cost but on a 24X 7 basis.

Q3. *What is the difference between innovation and creativity?*

Responses:

Creativity refers to thinking of a way how one can create something from the environment or trying to improve on something especially when what you want is not available at the moment. E.g. A chemistry teacher, who has no PH indicators to be used during Chemistry practical lessons, can extract indicators from flowers around the school to use in the chemistry practicals.

Innovativeness refers to trying to use something already available but in a different way. E.g. a teacher using a mobile phone to take photos of the environment to aid in teacher's lessons rather than just making calls and sending SMS to friends..

Harmonization:

Daniel showed the participants photos he had taken with his phone at the recently concluded Agricultural show in Jinja and a video on the Dissection of a cow's eye made by students of Gayaza High school as examples of innovation and creativity respectively.

"Producing educational materials requires creativity but using what is already available materials in ways that increase students' interest and easiness of understanding requires innovativeness. Though not all of us can be creative, we can all be innovative" Kakinda added.

Participants were told that as educators they need to be both innovative and creative so as to produce visual materials which would enhance the teaching and learning process in their schools.

The Head teacher of Masindi SS shared how the school had got an offer from MTN for Internet connection free for 1 year under the company's Corporate Social Responsibility program.

Schools participating in the SchoolNet – Close the Gap ICT4E project were urged to be innovative in bringing on board different partners who can help them expand and optimally utilize their ICT resources.

(12:00-1:00) PM: Plenary Presentation by Mr. Robert-Jan Nieuwpoort of Second Life Company.

Second Life Company started in 2009 with a few members located at UMA show grounds Lugogo. It has now expanded and they have set up branches in Mbarara and Fort Portal.

In addition to selling refurbished computers, Second Life Company deals in recycling old computers. The company collects these old computers from the many organizations that are no longer finding them useful. Second Life Company in partnership with NEMA to ensure the computer e-waste are handled and disposed in an environmentally accepted way.

Second life company objectives include;

- To supply refurbished branded computers.
- To offer computer networking.
- To supply new products e.g. computers, printers, copiers. Laptops etc.
- To carry out computer training services.

Robert-Jan said that they have worked with many organizations which give away their old used ICTs and they plan on getting involved in dealing with more schools because they believe schools have many unused/ damaged computers they have put aside but their major challenge is how to get these unused computers from the schools. The schools involved in this program of preventing old computers from damaging the environment, would be awarded a certificate in appreciation of environment conservation.

During the discussion on the e-waste in schools, two issues came out:

- 1) Unlike in developed countries, where people pay recycling companies to take away the e-waste, in Uganda people still have emotional attachment to their used ICT equipment and would expect the recycling company to pay them something in return for their e-waste. A lot of sensitization is still needed in this direction.

2) Whereas the schools are very willing to dispose of their old computers, they must go through all the bureaucracy laid out in the Ministry of Education guidelines of how school property is disposed off. The school administrators advised Second Life company to work with the Ministry of Education and Sports especially the Department of secondary Education to get a an introductory letter to the schools to allow the schools dispose off their old computers to the company.

(2:00 -2:30) PM: Plenary- Introduction to the Innovative Teachers' Forum

(Session led by Ronald Ddungu)

Ronald talked of innovation in the classroom as a means of getting ways of how to changing the way lessons being conducted in the normal classrooms for better educational outcomes. He said teachers should be interested in sharing, should use the information acquired to develop the school, and should be people who can inspire others through their innovativeness.

Ronald introduced to the participants, the Innovative Teachers Forum which brings together teachers worldwide to celebrate, share and learn from each other the good innovative work they are doing in their schools.

By joining the Innovative Teachers Network, educators:

- Create or join communities & discussions.
- Find lesson plans and activities, as well as share their own resources.
- Access free tools and learning programs for their classroom and school.
- Collaborate with like-minded colleagues, improve education in their own classroom and community, and ultimately help improve the quality of education globally.

Ronald informed participants that every year, there are Uganda Innovative Teachers competition were three winners are chosen to represent the country at the Pan-African competitions. The winners at the Pan-African event represent Africa and the World-Wide Innovative Teachers' event.

In 2008, Ronald Ddungu was one of the innovative teachers who represented Africa at the World-Wide event which was held in Hong Kong and became second runner-up.

Last year, Milton Chebet, a biology teacher at Gayaza High School was one of the innovative teachers who represented Africa at the World-Wide Innovative Teachers event which was held in Brazil.

Ronald outlined some of the criteria used in judging innovative projects which included:

- Does the project have any community involvement and if so, at what level?
- Does the project help to solve community problems?
- Does the project link up with other schools elsewhere?
- Is the developed project content useful to other schools?
- Does the project use ICTs and what is the value added in using the ICTs?
- Does the project make the teacher and the students agents of change?

Ronald introduced the three teachers who had gone through a very competitive Uganda Innovative Teachers' competition and had been selected to represent Uganda at the Pan-African Innovative Teachers' event which was to be held (24-26) August in Mombasa, Kenya.

The three teachers were: Elizabeth Rwabu (A Geography and IT teacher at Iganga SS), Solomon Asea (a Geography teacher at Gayaza High School) and Jonathan Serunkuma (a Fine Art teacher at Transform Educational Centre, Kasangati).

The winners at the Pan-Africa Innovative Teachers event will represent Africa and the World-Wide Innovative Teachers event to be held in Oct 2010 in Cape Town, South Africa.

The school administrators were each provided with the judging criteria and invited at the mini- exhibition which had been set up by the three Uganda Innovative Teachers Forum winners. The exhibition was set up to provide the 3 teachers who were to represent Uganda get feedback from the school administrators which they would use to improve the presentation of their projects at the Pan-African event. Additionally the exhibition was aimed at showing the school administrators what innovative projects look like.

Each of the Innovative teachers was given 15 minutes to showcase their work and answer the questions from the participants.

- 1) Jonathan Serunkuma, a Fine Art teacher, at Transform Educational Centre, Kasangati, presented his project "**Art for a Better Environment**" – A project to help learners use the acquired knowledge and skills from the classroom to clean the environment of waste and use the waste in a beneficial way to create money generating ventures for themselves and their communities hence building a healthy environment for the community. The students collect drinking straws and bottle tops from the environment. They produce art pieces like handbags and sitting mats from the drinking straws and produce earrings and bangles from the bottle tops and sell

them to the community. The students use the money they get to buy basic school needs since most of them are orphans.

- 2) Elizabeth Rwabu, a geography and Computer studies teacher at Iganga SS , presented her project “ **Enabling the Blind enjoy School using Computers**” – A project involving blind students using computers for communication and compiling digital content for use by other blind students across the country in improve learning in the classroom.



Figure 3 : Elizabeth Rwabu presenting her project

- 3) Asea Solomon, a geography teacher at Gayaza High School with his project “**Tackling Climate Change**” – A project to sensitize the community about climate change as a global environmental challenge and to provide opportunity for learners to contribute positively towards the adaptation to climate change and mitigation of the associated effects.

Suggestions for Improvement

After the min-exhibition, participants made the following observations/suggestions to the exhibitors aimed at helping them improve the presentation of their projects:

1) To Jonathan Serunkuma

- The stages involved in producing the products are lacking. One can't be easily convinced that it's the students who produced the final products. Include pictures of students in action in some stages of production.
- Try to explain why you picked on the use of that particular waste i.e. straws and not any other.
- What particular communities you are targeting for this project because the materials used are not widely spread throughout the country?
- Is it possible for you to also use Kavera that has been widely spread in the country as one of the materials?
- Would you consider using use natural colors for the environment on your chart and not school colors since your project is connected to the environment.

2) To Elizabeth Rwabu

- You didn't not feature anywhere in the process of helping out these students. One can think that you got somebody's pictures and presented them as your own project. Include pictures showing your involvement.
- Try to show that you made an effort to think about the software the blind students were using and also have it installed on the computer you are using for the presentation.
- This project will attract an international innovative audience since it is for the blind that are everywhere.
- Explain how you came up with the idea of involving the blind into use of ICT.
- Include pictures where the blind students and the normal students are working together as they carry on their ICT activities.

3) To Solomon Asea

- Put a background of a threat that will arise when the community doesn't plant trees. Or use the mitigation programs.
- It would be better if students were involved in use of more technology e.g. being seen using the camera.
- Put some photos to highlight the different climate issues e.g. bush burning, swamp degradation etc.
- Clearly highlight the collaboration and linking with students of other schools.

Ronald Ddungu thanked the school administrators for the advice and suggestions they had given to the three innovative teachers who were to represent Uganda at the Pan-African event the following week. He urged the innovative teachers to put into

considerations the comments and the suggestions they had received in order to make the value added by their project stand out during the competitions.

He urged the school administrators to encourage their teachers do innovative projects, join educators' networks for the purpose of knowledge sharing and peer learning.

(4:00 -5:00)PM: Plenary – Benefits of participating in projects (A student perspective) by Rhamulah Bukirwa and Ronald Kasendwa.

a) Personal Testimony by Rhamulah Bukirwa

Rhamulah Bukirwa is an S.3 student at PMM Girls School, Jinja. She is a member of Adobe Youth Voices (AYV). Before joining AYV she participated in a New Vision project called JAZZ Peace where she was a member of the PMM Peer Mediation Committee. She went through the WSWM training in 2009 and is also a member of The Literature Writers' Club.

She was motivated to join and participate in the AYV was the opportunity to use computers, making of digital media and opportunity of travelling since the AYV members had to move out of school to shoot videos and take pictures for the media production, and also the opportunity to meet new people.

In Jan 2010, Rhamulah attended a 5-day training of Adobe Youth Voices conducted by SchoolNet Uganda and trained as an AYV student Peer Educator. As a student peer educator, Rhamulah:

- Sensitizes fellow students about adobe youth voices (AYV).
- Mobilizes students for Adobe Youth Voices (AYV) meetings and other activities.
- Raises issues of concern among other peers e.g. through media making.

Rhamulah also produced her own media on called “**A Fact file of Child Abuse**” which she showed to the participants. This media raised many issues e.g. parental neglect of disabled children, ritual child sacrifice, defilement, early pregnancy, unwanted pregnancy, lack of parenthood by children and its challenges, child kidnapping etc.

As AYV members, students face a number of challenges:

- Getting enough time to meet as the AYV group in school and discuss issues since most members are from different classes.
- Lack of support from fellow students. Some students don't support what they do and they keep calling them names.
- Balancing academics and AYV activities.

- Media production is sometimes delayed due to power shortage especially during the time of video editing.
- The slow Internet slows down the media production especially when searching for information from the Internet.

They have to remain patient throughout the whole process. They were able to sensitize some peers about AYV for example during the science fair at their school when they were given a chance to talk about the AYV project.

Rhamulah got the following benefits from participating in the Adobe Youth Voices (AYV) project:

- Improved her technical skills of using the Adobe software e.g. Adobe Premier Elements and Adobe Photoshop.
- Learnt how to get information from the internet e.g. getting news from the Internet for the media production.
- Improved in her summary making skills and her communication skills.
- Leant to collaborate with other groups e.g. collaboration with the Uganda Young Positives to get information on the life of a young positives for one of the media productions they were doing.
- Got more skills in storyboarding.
- Leant how to look at the many issues and think deeper about them and try to find useful information from them.
- Leant how to be tolerant towards people who are criticized and stigmatized
- Learnt how to work as a team. She used to have a negative attitude on some issues but she realized it was a waste of time and so developed a positive attitude after passing through the AYV project.
- Learnt more English language during the media making process.
- Learnt more about what was taking place in the world.
- Participated in two face-to-face AYV workshops.
- Produced a personal media.

Rhamulah intends to use the skills and knowledge gained from the AYV project for:

- Making more media that raise burning concerns in society that are not much considered or not considered at all.
- Teach other peers who may take interest in learning how to use the adobe software and the digital tools.
- Holding AYV exhibitions at various forums: Board of governors' meeting, Rotary Club of Jinja/Source of the Nile fellowships, visiting schools.

b) Personal Testimony of Ronald Kasendwa

Ronald Kasendwa is a 2nd year student of Makerere University offering Bachelor of Computer Science. He has participated in a number of projects while at secondary school. These projects included:

(i) Mtandao Afrika contest

Mtandao Afrika is a Pan-African contest where African learners from different African countries collaboratively produce educational website.

Ronald was inspired to join Mtandao Afrika by a friend who had won in the previous contest and he wanted to travel outside the country. His team developed a website on Prostitution in Africa.

Mtandao Afrika helped Ronald develop team work skills, self-expression, and collaboration skills and opened his career in website development. He now develops professional websites for a cost.

(ii) Adobe Youth Voices

Adobe Youth Voices (AYV) is an international project where youth produce media on issues which concerns them in their communities.

Ronald joined the AYV project because he wanted to know what really happens behind the movies he always watches. He wanted to be involved in the creation of media and to have his name scroll among the credits at the end of the media.

His AYV team produced a media of the gender disparity in science education. They unveiled the hidden reasons for the low participation, performance and retention of girls in sciences as compared to the boys. The media produced for this project was used and shared at the various career guidance days in schools. It was also presented at the AYV international summit which was held in San Francisco, California, USA.

While participating in the AYV project, Ronald Kasendwa:

- Got an opportunity to facilitate in some SchoolNet Uganda workshops.
- Met a number of big people during the interviews for the media production.
- Developed graphic design and animation skills that have continuously boosted his work in web design.
- Documented a number of SNU's workshops and earned money that he used to buy a laptop which he is using in his course.
- Travelled to San Francisco, USA for the AYV summit.

When Ronald returned to Uganda from the AYV Summit, he felt the need to give back to the community for he attributed his success to the SchoolNet network by sharing his knowledge, skills and testimony with educators and students in the SchoolNet Network.

- He helped the students of Gayaza High School create science educational content i.e. produced the dissection of a cow's eye.
- He facilitated as an educator in the Global Virtual Classroom project where students of Gayaza High School were working with a school in Canada and another school in USA.
- He was a lead-facilitator at the 5 day AYV face-to-face workshop held in Jan 2010.

Ronald Kasendwa applied for the AYV online course and he qualified as an iEARN Master teacher. Using his portfolio, he got a short term contract with the World Bank Institute as the EVOKE game runner. EVOKE is a crash course in changing the world. Evoke is designed to empower young people all over the world, and especially in Africa, to start solving urgent social problems like hunger, poverty, disease, conflict, climate change, sustainable energy, health care, education, and human rights.; to collaborate with others globally; and to develop real world ideas to address these challenges.

“ I attribute all what I have achieved to my participation in projects. I argue all of you to encourage your children and students to participate in projects “Ronald concluded.

----- **END OF DAY 3**-----

DAY 4 WORKSHOP PROGRAMME

DAY 4- Thurs. 19 th August 2010 Programme		
Time	Activity	By Whom
9:00-9:30AM	Plenary : Personal testimony about my life –Special guest speaker (on video)	Nick Vijicic
9:30-11:00AM	Plenary Presentation: Adobe Youth Voices Project	Kakinda Daniel
11:00-1:30AM	HEALTH BREAK & BREAK TEA	
11:30 -1:00PM	Plenary Brainstorming: Introduction to Project-based Learning	Kakinda Daniel
1:00-2:00 PM	LUNCH BREAK & LUNCH	
2:00-5:00PM	Plenary Discussion: Planning for ICT4E implementation in our schools	Kakinda Daniel
	END OF DAY 4	

(9:00 – 9:30) AM: Plenary - Personal testimony about my life- special guest speaker *(Personal video of Nick Vijicic)*



Participants watched a video clip about the life of Nick Vijicic.

Nick Vijicic was born Dec 4 1982 in Melbourne, Australia with a rare physical disability: limbless, missing both arms at shoulder level and legless but with two small feet, one of which has two toes.

His life was filled with difficulties and hardships. Being bullied at his school, Nick grew extremely depressed and by the age of 8, started contemplating suicide.

After begging God to grow arms and legs, Nick eventually began to realize that his accomplishments were inspirational to many and began to thank God for being alive. Nick changed his attitude towards himself to wanting to become of God's love and hope.

Nick learnt to write using the two toes on his left foot and a special device that slides onto his big toe which he uses to grip. He also learned to use a computer and types using the “heel and the toe” method at a speed of about 40 words per minute. At home, he takes care of his personal hygiene like shaving, brushing his teeth. He moves around the house by jumping or moving in an electric chair and also swims.

Nick graduated from college at the age of 21 with a double major in Accounting and Financial Planning. He is a preacher, a motivational speaker and director of ***Life Without Limbs***, a Not-For-Profit organization for the physically disabled. He has travelled to a number of countries including Uganda as a motivational speaker focusing on the topics that today’s teenagers face.

“No matter whom you are, no matter what you are going through, God knows it. He is with you. He is going to pull you through. If you have a desire and passion to do something and it is within God’s will, you will achieve it in good time. Our attitude determines our altitude” says Nick Vijicic.

Daniel Kakinda testified that Nick Vijicic his role model and he watches this video over and over especially when he is faced with challenges or whenever he feels stressed with too much work. He gets inspired the fact that there’s someone out there without limbs who can do all his activities without support and yet he has both limbs. He promised to share the video with the participants so that they show it to their teachers and students.

He urged the school administrators always to try inspiring their teachers and students other than motivating them because when you motivate someone, she/he does work for that day but when you inspire someone, she/he does work for ever.

(9:30 -11:00) AM: Plenary Presentation: Introduction to Adobe Youth Voices Project *(Session facilitated by Kakinda Daniel – AYV-Uganda Project Coordinator)*

Adobe Youth Voices (AYV) Project.

Adobe Youth Voices (AYV) is Adobe Foundation’s global program designed to provide youth in underserved communities with the critical skills they need to become active and engaged members of their communities and the world at large.

There are over 7 education networks implementing the AYV program. The one to which SchoolNet Uganda belongs is iEARN (International Education and Resource Network).

iEARN is a non-profit global network of over 20,000 teachers, 3 million students, 120 countries, 30 languages that empowers teachers and youth to collaborate through a global telecommunications network on academic, social and environmental action projects designed to make a difference in the world.

There are currently 20 countries within the iEARN Network currently implementing the AYV program namely: Uganda, Belarus, Romania, Oman, Brazil, Japan, Turkey, United Arab Emirates, South Africa, Poland, Russia, Argentina, USA, Slovenia, Botswana, Egypt, China, Mexico, Bahrain and Israel.

In Uganda, Adobe Youth Voices (AYV) is implemented by SchoolNet Uganda and is coordinated by Kakinda Daniel. There are currently 13 sites in Uganda implementing the AYV project namely: SNU, 3Rs SS, Jinja SS, Gayaza High School, PMM Girls, St. Peters Nkokonjeru, Arua Public School, Mt. Rwenzori Girls, Kings College Budo, Kakira SS, Revival Grammar Secondary & Primary School and Omwichewamba Primary School.

Goals of Adobe Youth Voices (AYV) Project

The Adobe Youth Voices (AYV) aims to:

- Provide opportunities for youth to explore their world, comment on what they see, and take positive action.
- Help youth develop the ability to think creatively, communicate effectively and work collaboratively.
- Prepare youth with critical skills needed for school, career and life in the 21st century.
- Help the youth engage with their communities by sharing their ideas, concerns and aspirations (voice).
- Help the youth develop media literacy skills. Information literacy skills is the ability to realize the need for certain information, identify possible sources of information, analyze it for authenticity, correct and show its relevance, and repackage it in the most appropriate format and share it with others.

Critical Skills needed for 21st century

One of the aims of the Adobe Youth Voices (AYV) program is to provide the participating teachers and students with critical skills which they need to be competitive in the 21st century. These skills include:

- Cross-cultural understanding and sensitivity.
- Team-work and collaboration.
- Oral & written communication and listening skills.
- Creativity and innovation.
- Comfort with digital technologies including media literacy.
- Problem-solving skills.
- Long-life learning
- Social responsibility – take on civic and global issues
- Working for long hours unsupervised.
- Critical thinking – taking on complex problems.
- Information literacy.
- Networking and Knowledge sharing
- Negotiation skills

School and teacher participating in the Adobe Youth Voices Project

For a school to participate in the AYV project, it must complete the AYV site application form giving the names and emails of two teachers to coordinate the project. The application form must be signed and stamped by the Head teacher as a way of showing the Head teacher's support.

The two teachers must be computer and Internet literate, youth friendly, interested in media production and ready to commit themselves for a 9 week online course.

The teachers undergo a 9-week online training with teachers from other countries and a 5-day face-to-face training. The 5 day face-to-face training is attended by one of the teachers and a student peer educator.

Each of the trained teachers is expected to work with students so that they at least produce one social media on issues which concern them in their communities.

The participating schools will be provided with licensed Adobe Photoshop and Adobe Premier Elements software, a 9-week online training for two teachers and a 5-day face-to-face training to one teacher and a student peer educator.

Student participation in Adobe Youth Voices

Students are recruited by the teacher and work under the guidance of the teacher.

Students start by brainstorming the social issues in their communities which they are concerned about.

Examples of social issues include: education for the girl-child, child abuse and neglect, early pregnancies and early marriages, young positives (children who were born HIV+), human sacrifice, domestic violence, environmental degradation, poor sanitation in the community, drug abuse, negative peer pressure, school drop-out, gender disparity in science education, prostitution etc.

The students need to agree on the issues to be considered in their media. It is important for the teacher not to impose his/her ideas on the students.

The students shouldn't create just a media just for the sake of creating media but should have a purpose i.e. create youth media with a purpose. The media should have a purpose of causing a positive change in the community.

In order for the students to “**create youth media with a purpose**”:

- The youth media production should be a link between the world the youth see and the world the youth want to create.
- The media must be on an issue you are really concerned with and must communicate the issue from a youth perspective.
- The media production must be purposeful, targeting an identified audience and designed to have impact and effect change.
- The youth must ask themselves some key questions for the media production:
 - What is the issue? Why is it important? What would be the problem of doing nothing about it?
 - Who is the audience for the media production? What is the message for the audience? What impact do we want? What positive social change are we interested in making?
 - What is the best source of our information? Is the information authentic?
 - What would be the best format for our media and why is it the best?
 - How is the media going to reach the targeted audience? What is the best format for the audience?

In case the students want to do more than one media, each media group should present what they want to do to the rest of the group for critical feedback and suggestions.

Training for the students

The AYV teachers are responsible for providing the following training to the students:

- How to draw up an Action Plan
- Making the web and the storyboard for their media production.
- Using equipment like digital cameras, scanners and video cameras.
- Using Adobe Photoshop and Adobe Premier Elements.
- Interviewing skills
- Video and photo editing and digital story making.

Interviewing Hints.

- The students need to prepare the questions before, send the questions to the interviewee before the interview so that he or she can prepare and always have a motivation for your interviewee.
- Students need to put together some introductory note (who they are, a brief about the project, what do they want to do and why, what are they going to do with the output, what is the motivation for the interviewee).

Media Production

The media the students produce should have a youth perspective and should be relevant to the young people themselves and also to their community at large. The production process should be student driven and teacher guided with the students in the driver's seat and the teacher as a facilitator on the sides.

Students need to keep in mind their target audience as they produce their media. The media should have a purpose so they should keep reflecting on what message are they giving to the audience through their media. The age and level of education of the target audience should determine the format of the media.

Output from each school

Each participating school is expected to:

- Provide the necessary support for the two teachers to complete the 9-week online course e.g. Internet connection.
- Send one of the teachers and a student to the 5-day face-to-face training.
- Submit two youth media to Adobe Foundation in June of the project year. The project cycle starts in Sept and ends in June.
- Provide an opportunity for the AVY students to exhibit their media to the rest of the students, parents and the community.

(11:30AM-1:00PM): Plenary Minds-on Activity: Introduction to Project-based Learning *(Session was led by Kakinda Daniel)*

a) What is Project-based Learning?

Question: *Reflecting on the students' testimonies of Day 3 and the discussions we have had since day 3, what do you understand by project based learning?*

Participants' responses:

Learning by doing but there must be self-motivation so that the learners in the project love and own what they are doing.

Facilitator harmonization:

Project-based learning combines learner-centered approach & Inquiry-based learning but with the following essential components:

- A “driving question” that is anchored in a real-world problem and is multi-disciplinary.
- Where the community becomes the classroom & a learning resource.
- Collaboration among students, teachers and others in the community.
- Cognitive tools like ICTs are used in a meaningful and innovative ways.
- Culminates into a product or artifact (website, documentary, poster, etc.) that meaningfully addresses the driving question.

b) What are the elements of a good project-Learning experience?

Question: *Does any of your schools have experience with Project-based learning?*

Participants' responses:

- Masindi SS is working on a solar powered vehicle project with a school in UK. Also the UK students want to know about the life in Uganda.
- Gayaza High School worked with a school in Canada and another school in California under the Global virtual Classroom project. The Gayaza students wanted to discuss sexual and domestic violence, the California students wanted to discuss climatic change whereas the students from Canada wanted to discuss drug abuse and violence. After two months of discussion, the students settled on producing a website on violence in general.

Harmonization

A good project-learning experience should:

- Be driven by an open-ended question or issue that is real and relevant to the students' lives and of social importance.
- Involve real world use of technology.
- Involve student –centered learning and/or deliberate engagement of students' voice.
- Facilitate collaboration and team-work among students towards a common goal.
- Have multi-disciplinary components.
- Be outcome-based, with an artifact/product, presentation or action as a result of the inquiry.

c) What is the role of the teacher in Project-based learning?

Question: What is the role of the teacher in project-based learning?

Participants' response:

The teacher's role is to introduce the subject to learners i.e. give an overview of the process that will be used. The teacher can also link up with SchoolNet Uganda to provide inspiration to their students from people who passed through the project.

Harmonization

A teacher facilitating project-based learning needs to:

- Model interest in the project and to show enthusiasm for learning by students i.e. when students ask for help, the teacher should be able to help the students on that issue, he or she should also make sure he or she is always available to hear the students' views e.g. during brainstorming.

- Provide students with the resources (contact information of people, equipment, transport, equipment, administrative support). This gives the students confidence in what they are doing.
- Nurture an environment that supports open inquiry.
- Discuss with students the difficulties they encountered and offer appropriate guidance.
- Identify training needs e.g. provide equipment to be used, provide skills e.g. interview skills, collaborative skills to the students. This training can be done at the site (school) and also by SNU during its workshops.
- Judge morale of the team and decide on motivating measures needed.

d) Steps involved in project-based learning?

Project-based learning involves a number of steps which include:

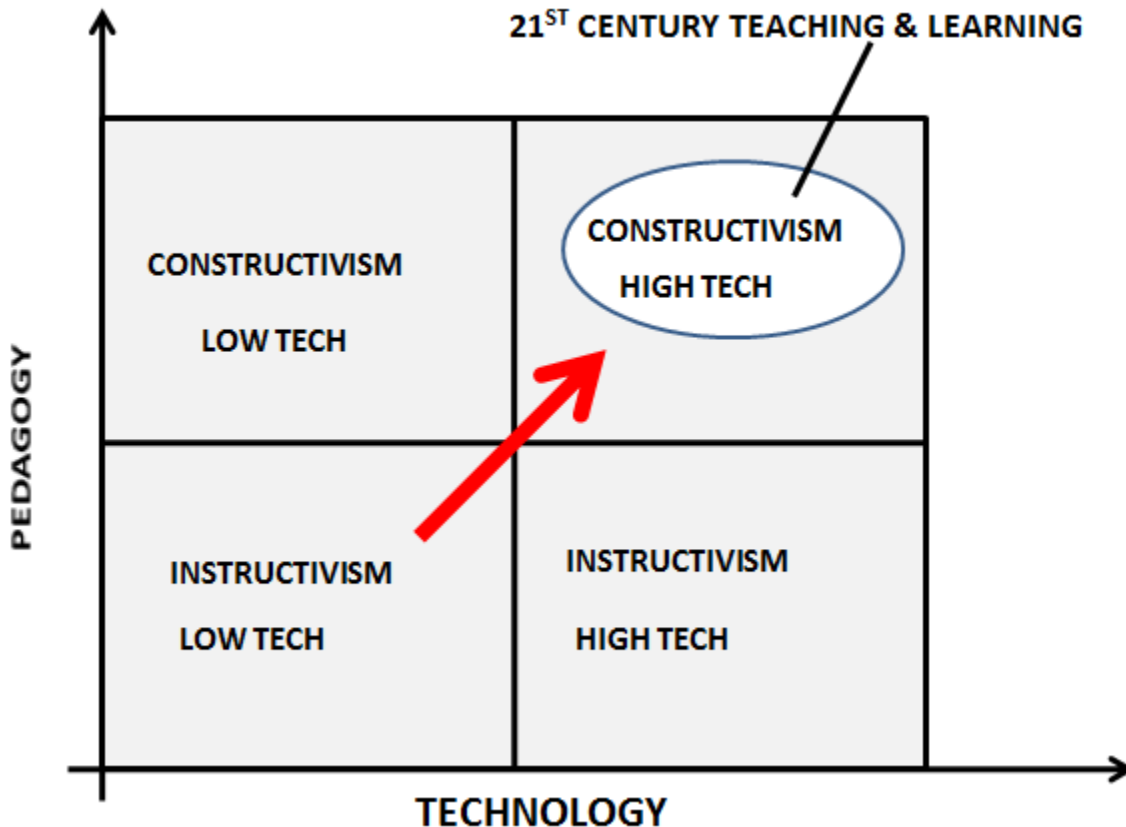
- Debating/brainstorming to identify a real-world issue or problem.
- Designing plans/experiments/questions for inquiry.
- Collecting and analyzing data.
- Drawing conclusions from data and reflecting on experience.
- Communicating ideas and findings to others.
- Asking new questions and re-designing plans,
- Creating artifacts.
- Exhibition of artifacts to the community and taking action.

It is important to note that in project-based learning, the process is more important than the product because the learning is in the process.

Richard Chole advised the Head teachers to always should think about the teacher who is more suitable for a particular project because head teachers tend to have a tendency of picking on people who even don't have a spirit in something they are told to do.

(2:00 – 5:00) PM: Brainstorming: Moving Our Schools into the 21st Century
(Session was led by Kakinda Daniel)

Daniel noted that it's possible for one to be in the 21st century but acting like one in the 19th century. Though we are living in the 21st century most of the Uganda schools still provide 19th century education characterized by instructivism and low or no technology.



For Uganda schools to provide 21st century teaching and learning there is need to improve both the pedagogy and the technology use in the schools. Schools need to move to constructivism and high technology use in their teaching and learning.

Challenges of being Innovative

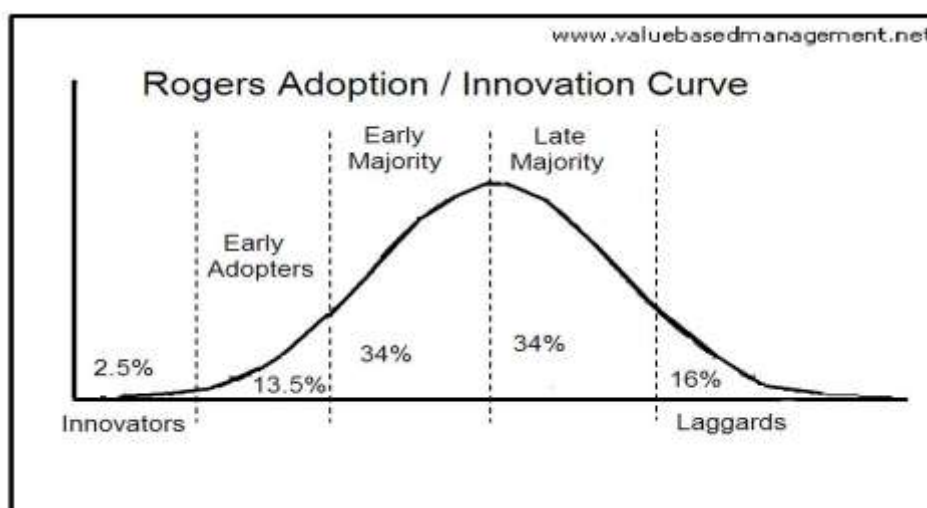
Daniel noted that moving schools into the 21st century will require a lot of innovation from the school administrators in order to overcome the challenges schools are facing. There is no single-size fit all solution because each school faces different challenges. What works for one school may not work for another school.

Question: What are the challenges of being Innovative?

Participants' responses:

- Usually people are conservative and want to do the things the way they have been doing them. They always resist from change.
- Some people can misunderstand the message forwarded to them i.e. they can take it in a negative way.

Daniel showed the participants the **Rogers Innovative/Adoption Curve** which they always need to put into consideration whenever they are introducing an innovative in their schools.



- Innovators (2.5%): Brave people, pulling the change and are driven by passion. Innovators don't need any external motivation and can use their resources (money, equipment, time) to get the innovation going.
- Early Adopters (13.5%): Respectable people, opinion leaders, try out new ideas but in a careful way. They ask questions about the costs involved, the benefits, the sustainability of the innovation etc.
- Early Majority (34%): Thoughtful people, careful but accepting change more quickly than the average.
- Late Majority (34%): Skeptic people will use a new idea /product only when the majority is using it and when the innovation has been successful.
- Laggards (16%): Traditional people, caring for the "old ways", are critical towards new ideas and will only accept it if the new idea becomes mainstreamed or a tradition. These are only forced to do something when it becomes policy.

Daniel noted that when introducing a new innovation, it is better to initially work with the innovators and early adapters only until the innovation is successful thereafter bring the other teachers on board.

He then gave an example of the Head teacher of Kitara SS whose idea of using Bestgrade software to computerize school reports was first opposed by some of the teachers. The Head teacher decided to concentrate on one class and computerized its reports and the process was very successful. The same teachers who had initially opposed the computerization process started complaining why only one class reports had been computerized after seeing the neatness and accuracy of the computerized reports. They now wanted the reports of all classes to be computerized.

Kakinda cautioned the school administrators that putting computers and Internet in schools is expensive but is the easiest part of the whole process of integrating ICT in the teaching and learning process. The most difficult is the sociology of the technology i.e. the human issues which must be dealt with in bringing the teachers on board.

- Attitude to change-use of ICT may require teachers to assume a new role & relinquish more control than they feel comfortable doing.
- Fear of change – some teachers may think ICT is going to replace them.
- Fear of commitment – learning how to use ICT in the classroom would require time from the teachers against their already very tight time schedules.
- Fear of appearing incompetent – how about if students know more than I do?
- Fear of technical aspects.
- Fear of having to acquire so much before.

- Fear of change of power structures- how can I learn from the students or learn with the students.

Considerations for successful implementation of ICT4E in Schools

Successful implementation of ICT4E in schools requires a holistic approach involving School ICT policy, ICT infrastructure, teacher professional capacity building and digital educational content.

(a) Strategies for ICT Infrastructure

Question: What strategies do you hope to use to ensure acquisition and maintenance of ICT facilities?

Participants' responses:

- In some schools, there's always a vote in the school budget for ICT. Though it is not enough, the Ministry accepted and allowed the schools to charge students

money for ICT development which money is added onto the computer budget whenever it is received.

- Lobby members of the Board of Governors and PTA to buy some ICT equipment. E.g. By conducting BoG and PTA meetings using some ICT equipment e.g. a projector, computer demonstrating their importance.
- Write letters to the community members inviting them to come and assist including an amount of money they should contribute the development of the ICT in the school.
- Put up some rules for how to use the computers to be followed by the whole school community when using them.
- Approach the CSR (Corporate Social Responsibility) Departments of companies for assistance e.g. Masindi S.S got free Internet for the whole year from MTN.

Harmonization

There is need to ensure that:

- All teachers have adequate access to ICT facilities before, during and after school hours.
- Technical support is available on a timely basis.
- Time taken setting up an ICT-enhanced lesson is minimized.
- There are a reasonable number of ICT resources for the students e.g. a small student to computer ratio.

Some possible strategies:

- A school policy of buying some ICT facilities every term.
- A budget line for hardware and software maintenance and servicing including anti-virus upgrade.
- A school policy on access for teachers and students.
- A maintenance contract with an external organization or company. Servicing of computers must be done on a regular basis e.g. once a term not just when the computers breakdown.
- Technical capacity building for the teachers. SchoolNet Uganda will be conducting a 5-day technical training workshop for the project schools in Dec 2010. The schools are requested to send one teacher and a student (preferably a girl) for the training.
- Employing an in-house computer lab technician.
- Install anti-virus software on the computers regularly scan the computers for viruses and regularly update the anti-virus software since new viruses come out everyday.
- Buy SMART UPS to protect the computers against unstable power and power surges.

Daniel encouraged the school administrators to network the computers in their schools. Networking computers has a number of advantages like ability to share resources:

- One computer can easily read information on another computer.
- All computers can be able to access the same printer i.e. one can print from anywhere using the printer as long its networked.
- Internet services can also be shared by all the networked computers e.g. those in the computer lab, head teacher's office, staff room etc. this can be done through wireless or wired connectivity or both. This enables many people to access data on the same computer from different places.

(b) Strategies for Teacher Professional Development

Question: What strategies do you hope to use in order to develop the teachers' professional capacity to integrate ICT across the curriculum?

- Teachers must be trained in information literacy so as to be able to look for the useful information i.e. "teach them how to fish rather than give them a fish"
- Use a self-learning program to teach the teachers on how to use the computers but it should be friendly to everyone to encourage them come back the next day.

Harmonization

Possible strategies:

- Encourage teachers to share and network for the purpose of learning from each other. There is more to benefit from sharing than competing for example if two people both with an idea share their ideas with each other, they will end up having two or more ideas at the end of the day.
- Encourage teachers to attend ICT related school-based workshops organized with the purpose creating awareness of the potential of ICT in education, building ICT skills and pedagogical skills for integrating ICT in education.
- Encourage teachers to liaise with other schools to learn collaboratively and share ideas with regard to ICT use in the classroom.
- Encourage teachers to join national and international ICT in education professional networks like the Microsoft Innovative Teachers Network, iEARN (International Education and Resource Network).
- Encourage teachers to attend national & international ICT4E conference and experience.
- Encourage teachers to use online resources and to attend online professional development courses. Teachers must be long-life learners, multi-skilled and multi-disciplinary to remain relevant.

- Have a budget line for professional development (school, individual).
- Set ICT in Education competency levels to be achieved by teachers.

(c) Strategies for Digital Education Content

Question: What strategies do you hope to use to ensure acquisition of ICT based digital content?

Participants' responses:

- Collaboration/networking with other schools so that they share tests, marking schemes, which they said might be difficult because some teachers don't have them.
- Teachers should take educational photos and videos when they go field work and put them on a DVD then use them to enhance their lessons and share them with other schools.

Harmonization

Possible strategies:

- Digitize the content already available at the school (Teachers' notes, question bank, schemes of work, lesson plans, marking schemes etc.).
- Search for available for open educational content from other schools and on the Internet. Share the web links or download the content and make it available on the school computers.
- Buy off-shore digital content from content re-sellers.
- Record educational content from the TVs e.g. from the Geographical/History channel on DSTV, on tapes, DVDs etc.
- Build teachers' capacity to create Digital Content by organizing workshops.

Daniel encouraged the school administrators to work with as many ICT4E partners as possible in order to successfully and sustainably implement ICT4E in their schools.

----- **END OF DAY 4** -----

DAY 5 WORKSHOP PROGRAMME

DAY 5- Frid. 20 th August 2010 Programme		
Time	Activity	By Whom
9:00-9:30AM	Plenary: Sharing experience on the implementation of Bestgrade at school level.	Jjemba N.
9:30-11:00AM	Hands-On Activity: Experience with Computerized Testing	Kakinda Daniel
11:00-1:30AM	HEALTH BREAK & BREAK TEA	
11:30 - 12:00PM	Plenary : Sharing reflections on computerized testing	Kakinda Daniel
12:00-12:30 PM	Minds-On Activity : Workshop Evaluation	
12:30-1:00PM	Plenary: Closing remarks and award of certificates	
	LUNCH	
	END OF WORKSHOP	

(9:00 -9:30)AM: Plenary- Sharing experience on the implementation of Bestgrade Software at school level (By Jjemba N, Head teacher, Kitara SS)

The Headteacher of Kitara SS shared the experience of implementing computerized reports using Bestgrade software at his school, Kitara SS.

The teacher who attended the ICT4E workshop in May 2010 gave the Bestgrade software to a student to try it out. After trying it out, the student went to the Head teacher's office and showed him his work on the computerized report. They discussed how to make the program work. The teachers were not easy to bring on board so he picked on one of the teachers of one of the S1 classes and asked the teacher to work with the student to make computerized reports for that class. On a weekly basis, the teacher would report to the Headteacher on the progress.

One major challenge they faced was to get students' marks from the teachers. The Headteacher had to ask the Deputy Headteacher and the Director of Studies to collect the students' marks forcefully from the teachers.

After they had successfully produced the computerized reports, the teachers came to realize that computerization makes report making easier, faster and more accurate. The same teachers who had opposed the program started complaining why the Head teacher had decided to make computerized reports for only that class giving reasons that if a parent had two students one in that class and another in another class, what would the parent say when the parent sees the reports are different?

The Head teacher plans to add another class next term so that the program moves slowly till it covers the whole school.

He urged headteachers of other schools to use Bestgrade software to computerize students' reports starting with a few classes and gradually taking up more classes though they may experience resistance from some teachers.

(9:30 -11:00)AM: Hands-On Activity with computerized testing

Participants had a hands-on experience with an objective type of computerized Geography test which was administered over a computer network. The test was automatically marked, their marks immediately ready and performance analysis automatically made. Participants were asked to reflect on computerized testing at the end of the test.



Figure 4: School administrators having a hands-on experience with a computerized exam.

Reflections on computerized testing made by the participants at the end of the test.

As a way of guiding participants' reflections on computerized testing and marking, participants were given three questions to which they had to respond on at the end of the computerized test.

Q1. What do you see as the advantage of using computerized testing as compared to the current manual testing especially for the objective type of questions?

Responses to Question 1

- It saves time that would be used processing question papers.
- It clear to students and will be interesting for students to do a test using the computer.
- It saves stationary that would costly to the school since the test is digital
- It reduces the burden of marking on the side of teacher as results are immediately released.
- It is time saving, cheap, environmental friendly, motivating to the learners and teachers, work is neat and clear and gives immediate feedback.
- It is quick to mark, limits cheating, limits errors and time management is easy.
- The cost of running the exams is low and minimizes leakage of exams.
- Fewer errors in processing and analysis.
- It is easy to manage and control and storage is easy.
- It can be accessed by many at any time and is a modern way of doing things.
- The teacher does not spend time marking the test since the marking is automated.
- Saves time - a lot can be done in a short time.
- Accuracy in marking.
- Saves paper and encourages environment conservation.
- Teacher communication to student does not disturb other students.
- Uses less man power, copying is minimized, less time is taken to prepare the exam and to administer it, marking is easy and results are immediate.
- Limits cheating and impersonation by students.
- Less costly and time saving for the school and the already overloaded teachers.
- Proper records of marks are maintained.

Q2. What do you see as the biggest challenge in implementing computerized testing in your school and how would you address these challenges?

Responses to Question 2

(a) Challenges

Below are some of the challenges of implementing computerized testing and marking mentioned by the school administrators:

- It requires many computers which may not be affordable by many schools.
- It requires computer illiterate teachers who are not readily available in many schools.
- It is not convenient for essay writing questions since essays cannot be automatically marked and some students have a slow typing speed.
- There is low innovation and creativity among teachers.
- The schools don't have software for setting up computerized tests.
- Computers are not networked in most schools.
- The number of computers is low compared to the large number of students in a class.
- Computer literacy of both the teachers and students in most schools is still very low.
- The inconsistency of power supply from main power grid.
- Negative attitude of the teachers towards the use of computers.
- Limited access to computers by students and teachers.
- Requires high proficiency of computer use by the instructor/teacher.
- When it comes to student revision, students will not be able to get the information about that test since everything remains on the teacher's computer.

Addressing the challenges:

Below are some of the solutions to the challenges of implementing computerized testing and marking mentioned by the school administrators:

- Having a budget line for acquiring more computers yearly.
- Training of teachers and students so that both the teachers and the learners are conversant with computer.
- Acquiring a generator or solar as alternative source.
- Having a positive policy of accessibility of computers by all stakeholders.
- Need for more space for the computers and need to network the computers.
- Plan to acquire enough computers, through budgeting, soliciting donations, writing project proposals, encouraging parents to contribute, etc.

- Put in place a plan and budget to have computers regularly serviced and maintained.
- As schools plan to purchase more computers, they can be spread them in different places e.g. offices, staffroom, etc.
- Network all the computers. The costs to network may be high at the initial stages however the head teacher should have a budget line for it.
- The teachers may not be computer literate however the head teacher has to set a programme to equip his teachers with such skills.
- The school has to encourage teachers who have a negative attitude towards the use of computers by inviting resource persons to sensitize them on the importance of using computers for examinations.
- Constant sensitization by the school administration of both the teachers and students about the benefits of computerized testing.
- Choosing committed and enthusiastic teachers to champion the computerized testing system.
- Solicit for support from BOG/PTA Members and other organizations.
- Encourage networking and collaboration with other schools nationally and internationally.
- Ministry of Education and Sports should supply ICT tools to Schools to handle increasing numbers under the USE program
- Ministry should also include compulsory ICT lesson on the Curriculum of teacher training Institutions at all levels.
- Buy inverters for the computer lab.
- Provide vote in budget for computer maintenance and train or employ a technical support person to maintain the computers.
- The head teachers should get involved in demonstrating to the teachers how it can work so as to change their attitude and adopt to use it.

Q3. What support would the teachers at your school need from the school administration in order to implement computerized testing in your school?

Responses to Question 3

The school administrators mentioned the following types of support they needed to provide to their teachers for the successful implementation of computerized testing and marking in their schools:

- The schools need to budget for computers in order to increase their numbers.

- The schools need to lobby other organisations for computer donations.
- The schools should have programmes to train teachers in computer literacy using the available computers.
- The school should employ computer instructor to facilitate computer training and management.
- Teachers need to be sensitized, exposed to the software and to participate in exchange programs with other schools that have already taken off.
- School should employ a trained ICT teacher for proper management of the ICT tools. Administration should solicit support of the PTA, BOG and other Donor Agencies for funding.
- Organizing school based workshops for computerized testing systems.
- Headteachers' moral support.
- Acquisition of standby generator to minimize the problem of power problems.
- To continuously budget for acquisition and maintenance of computers.
- Proper training in the use of technology for example providing chances to go to workshops.
- Provision of opportunity for personal computers to allow teachers prepare the work adequately at time and place of convenience.
- Encourage the teachers to collaborate and network with others teachers to obtain as many tests as possible.
- Provide as much opportunity as possible to the teachers to access the computer laboratories.
- Ensure that there is follow up on what is done at all stages.
- Students should be given chance to learn computers skills.
- Install Internet and network the computers.
- Head teacher should encourage regular teachers' professional development and continuous in-service ICT training.
- Invite role models to share their personal testimonies.
- Train committed teachers in technical handling and maintenance of computers and ICT.

(11:30 -12:00)PM: Plenary – Presentation on Computerized Testing

(Session led by Kakinda Daniel)

Daniel gave showed the participants their results and the analysis of the results. It was possible to see exactly the response per question for each student and the number of attempts each student made. Graphical analysis for each question showed the

percentage of students who choose each option which information would be very useful for arranging remedial measures.

(12:00 -12:30)PM: Workshop Evaluation

Participants were asked to evaluate the workshop in terms of their learning outcomes (what impact the workshop had had on them in terms of attitude change and knowledge and skills acquisition). Participants were asked to write their workshop evaluation of paper without including their names.

Below are some of the extracts from the participants' workshop evaluation.

a) Workshop impact of participants' attitude

"My interest in using ICT has been improved upon therefore I will be using ICT more often than ever"

"I will use ICT to share information with others in my school and in other schools nearby".

"I used to think that students cannot do anything on their own, I now know students can do a lot independently"

"I have developed a positive attitude towards ICT in teaching and learning and intend to share my ICT knowledge and skills with other teachers and students".

"The workshop has changed my perspective on classroom teaching. One can do the same thing in different ways to make students interested in his/her lesson. The workshop has improved my ability to innovate with the exciting resources"

"At first I thought, it was going to be impossible for me to start using ICT in the classroom but now I am ready to be a pioneer and champion of ICT4E"

"I have developed a positive attitude of using ICT to enhance teaching and learning"

"Previously I thought it was only our school where it was difficult to change teachers' negative attitude to change their methods of teaching. I have learnt from colleagues that it requires much persuasion and patience to get things done, I have also learnt that to reduce resistance you have to start small and be seen as an example"

"The exposure I have got has removed from me the fears of handling software. I am going to share the experience with my fellow staff"

"I have developed a positive attitude towards information sharing with colleagues"

“I now have a positive attitude towards ICT4E and must cause an impact in my school”

“Use of computers has not been so much in me for lesson teaching. This will change”

“I am going back home to improve on my computer skills to enable me start using computers in my lessons. I am also going to sensitize other teachers and indeed we shall have computerized reports and use computers in all lessons”

“At first I was hesitant to come to the workshop because of having little computer knowledge. The workshop has completely changed my attitude towards ICT4E. The workshop has also changed my attitude towards learning computer as I found it was easy to learn a few things in a very short time”

“I had a negative attitude towards report writing and evaluation as I used to think they were very tedious. I now have a positive attitude because computerization makes assessment and report writing very easy.

“At least the workshop has helped me obtain some good skills of ICT which I never had before. Given the computers supplied by SchoolNet Uganda, I believe I will improve those skills through continuous practice”

“The presentations by various facilitators gave me confidence to organize similar workshops at school for the teachers”

“I have gained skills that will make me fit in the global village and which will have a positive bearing on my teaching methods”

“I have gained skills of how to download photographs from the digital camera to the computer and to use the photos in PowerPoint Presentations”.

“I have acquired new skills of using ICT that I had no ideas about. I can make computerized reports, I can use the Internet for research and I am able to sharing with other teachers across the country through email”

“my first day, I did not know how to use PowerPoint and the Internet but out of the workshop, I have developed skills of using PowerPoint and the skills of using the Internet for research and for collaboration with other teachers globally”

“I have learnt partly how to use PowerPoint but only with text on the slides. Have not learnt how to include animations and graphics on the slides”

“I have improved my typing skills, learnt how to use a scanner and how to search and download information from the Internet”

“The workshop has given me knowledge and skills which I can use to implement project-based learning in my school”

“I have shared with fellow participants the challenges of introducing computer programs in schools and learn from them the strategies for successful implementation ICT4E in schools”

(b) Workshop impact of participants’ knowledge and skills

“I have learnt the different ways in which ICT can be used to enhance teaching and learning”

“I have been receiving computerized reports from my children and was wondering what software was being used to produce them. Now I know how these computerized reports are generated and I am ready to implement this in my school”

“I am now in position to scan a document and to digitize a library. I can also use Bestgrade to computerize students’ reports”

“I now know how to prepare and use PowerPoint Presentations.

“I have learnt that most schools which are using computers are faced with challenges which are similar but to different degrees. By collaborating and sharing, the schools can address their challenges”

“I have learnt that they are other ways of teaching like Project-based learning as opposed to the traditional teacher-centred methods”

“I have been exposed to computerized testing and it is very wonderful”

“I have learnt how computerization of multiple choice examinations and student reports can greatly simplify the teacher’s work”

“I have learnt that report cards for students can be generated by the use of computers and that a teacher can simplify the work of marking by using a computerized testing system”

(12:30-1:00)PM: Closing Remarks and Award of certificates of completion

Kakinda Daniel, the Training Director of SchoolNet Uganda, on behalf of the workshop facilitators, the SchoolNet Uganda-Close the Gap ICT4E project partners thanked the participants so sparing time to attend the workshop and for the commitment to the workshop they had exhibited for the 5 days of the workshop. He thanked the project schools for meeting the cost of travel to and from the workshop and for accommodation

of the participants. He informed those participants from the non- project schools who had been earlier told that they would have to contribute UGX 100,000/= towards meals and training costs in the invitation letters that SchoolNet Uganda had taken care of those costs so they were not to pay anything to SchoolNet Uganda.

Daniel gave the participants an overview of what had been included on the Workshop CD and DVD which included among other materials; Bestgrade software and the computerized reports they had produced at the workshop, case studies they had used at the workshop, facilitators' presentations, science virtual labs and simulations, open content from Commonwealth of Learning, reports of the WSWM and the ICT4E workshop for teachers, the WSWM anthem, WSWM evaluation 2008, educational videos, photos of the workshop and past papers from different schools.

He urged all the participants to share the workshop materials with teachers and students at their schools and also to use the materials to cascade training at their schools. He thereafter distributed the workshop CD and DVD to the participants.

Vote of Thanks

On behalf of the participants, Mugabi Stephen-the DOS of Iganga SS passed a vote of thanks to the facilitators and all the project partners. He in particular noted that Daniel is a different quality of a person, so generous, lives in the collaboration world and urged the other participants to also live in that world.

“As participants we are so grateful for the wonderful workshop which has equipped us with the necessary attitude, knowledge and skills to implement the ICT4E project in our schools. We commit ourselves to the project success“ Stephen concluded.

Award of certificates

Participants were awarded certificates of completion and the workshop officially closed.

----- **END OF WORKSHOP** -----

Report compiled by:

- 1) Vivian Namazzi - Workshop Rapporteur**
- 2) Kakinda Daniel, SchoolNet Uganda Training Director**

Appendix 1: List of participants and their contact information

No.	Names	School	Responsibility
1	Adrole Abdulatif Moses	Aringa S.S	Director of Studies
2	Acheye Innocent	Gulu College	Director of studies
3	Mupaghasya T. Abisayah	Bwera S.S Kasese	Agriculture Biology
4	Mukasa Aminah	Masindi SS	Headteacher
5.	Kumakech Godfrey Ovona	Gulu S.S	Deputy Headteacher
6.	Badara Florence	Bukomero S.S	Director of Studies
7.	Acellam Boniface J.	Awere S.S Gulu	
8.	Tino Stella (SR)	Dabani Girls S.S	Deputy Headteacher
9	Mugabi Stephen	Iganga SS	Director of Studies
10	Rugongeza Ruth	Masindi SS	Deputy Headteacher
11	Tumwebaze Geofrey	Masheruka Girls S.S	Deputy Headteacher
12	Muhindo Josephine	Mt. Rwenzori Girls S.S	Deputy Headteacher
13	Ndungo Muhindo J.	Bwera SS	Deputy Headteacher
14.	Kironde Grace Namubiru	Ndejje S.S.S	Deputy Headteacher
15	Rugangwa Gerald	Bukomero SS	Deputy Headteacher
17	Adinan Sarah	Aringa S.S	Senior Woman Teacher
18	Abwola Morro James	Gulu College	Headteacher
19	Sendikadiwa Noah	Transform Educational	Headteacher

		Centre	
20	Muserero Musubaho Augustine	Karambi S.S	Headteacher
21	Jjemba Noordin Wootoyitidde	Kitara SS	Headteacher
22	Ronald Ddungu	Gayaza High School	Deputy Headteacher Co-facilitator
23	Chole Richard	PMM Girls	Co-facilitator
24	Kakinda Daniel	SchoolNet Uganda	Training Director Lead-facilitator
24	Ronald Kasendwa	Makerere University	Co-facilitator
25	Vivian Namazzi	MUBS	Rapporteur
26	Jonathan Serunkuma	Transform Educational Centre	Fine Art
27	Rwabu Elizabeth	Iganga SS	Computer Studies, Geog, CRE
28	Solomon Asea	Gayaza High School	Geography