Connectivity for Educator Development

(ConnectED)

FINAL REPORT
June 2003

Summary

The United States Agency for International Development (USAID) Uganda has worked in conjunction with the White House Education for Democracy and Development Initiative (EDDI) in Africa since September 1999. On request from USAID/Uganda, the USAID Africa Bureau Leland Initiative and the USAID Global Bureau LearnLink Project produced the Connect-ED activity. (USAID #: HNE-I-00-96-00018-00 T.O. 809)

Connect-ED falls under USAID/Uganda's Strategic Objective No. 3: Quality Basic Education for an Increased Percentage of Ugandan Children. Connect-ED builds on USAID's investment in the primary education sector by aiming to improve rural students' basic literacy, improve school administration, reduce the inequities persistent among different groups of children, and to further enhance and support the Universal Primary Education (UPE) policy in Uganda focusing on delivering services in rural areas.

Increasing the use of information technology for education and to promoting strategic partnerships on behalf of education, democracy, and development in Africa, are key elements, which characterize Connect-ED.

Connect-ED works in conjunction with the Kyambogo University (Former Institute of Teacher Education Kyambogo) in creating computer-assisted, multimedia, teacher-training resources

for utilization in eight selected Primary Teacher Colleges (PTCs) and Kyambogo University in Kampala. By providing professional development in a democratic setting for primary-school teachers' education through the introduction of educational technology, Connect-ED seeks to meet Uganda's goal of improving telecommunication services and quality.

Major Events September 2000 – June 2003

The LearnLink Uganda, Connect-ED Task Order began April 25, 2000 and went on up to June 30th 2003.

Among the activities undertaken were:

1. Training the three Kyambogo University (then ITEK) core staff
2. Computer-assisted Teacher Training Course Development
3. Local Office and multimedia development lab set up
4. User Lab / Training lab set up
5. Refurbishment and equipping of Computer Labs in PTCs
6. Internet connectivity
7. Public and private sector participation
8. Professional Development Computer Training
9. End User Training
10. Project Staff Hires
11. Identification of Connect-ED Project Interns and Volunteers (counterparts)
12. Setting up of ITEK and PTC web sites
13. Events and Activities
14. Staff Travels and Short Term Technical Assistants
15. Challenges met
16. The way Forward

1.   Training the three ITEK core staff

Three Kyambogo University (KYU) lectures (then Institute of Teacher Education Kyambogo-ITEK) were asked to participate in "train-the-trainer" sessions so that they may assist on occasion with student orientation and training at KYU and the PTCs. The "train-the-trainer" session started in September 2000 and continued until June 2002. This training was done during the project life by project staff and short-term technical assistants (Gini Wilderson and Wendy Kohn). By March 2002, these individuals were sharing knowledge through training with KYU students, lecturers and administrators from the Ministry of Education and Sports.

These individuals received basic computer orientation and Microsoft office applications training, basic website design and were introduced to the multimedia development that was used in the development of computer assisted materials being shared by tutors and students at the PTCs.

2. Computer-assisted Teacher Training Course Development

One of the principal results of the Connect-ED activity was the production of low-end multimedia teacher-training courses that could be used by tutors and students at the pilot PTCs. In order to produce these materials, an assessment of priority teacher training needs was carried out in October 2000.   This assessment reviewed the existing teacher-training syllabus (curriculum) and defined "modules" as units that exist in each of the six subjects taught at the teacher training colleges. The assessment also reviewed traditional teacher training methods, including the existing curriculum distributed by KYU (then ITEK) to the PTCs. The objective of the assessment was to compile a list of possible multimedia teacher training course topics. The list of the units was prepared and by the end of July 2002, the following units were developed and shared by the eight PTCs:

Subject	Unit	Topics
Language Education	Literature in English Language Teaching	♣ Oral literature ♣ Written literature ♣ Children's literature
Foundations of Education	Human Growth and development	♣ Principles of human development ♣ Aspects of growth and development ♣ Personality development ♣ Classroom application
Social Studies Education:	The World	♣ Location of continents, oceans and seas. ♣ The climatic zones of the world. ♣ The world vegetation. ♣ The world population. ♣ Forms of Governments.
Mathematics Education (with 20 units)	Organizing Mathematics Classrooms	♣ Stages in Learning of Mathematics Concepts ♣ Instructional Objectives and Planning for teaching. ♣ Methods of Teaching Mathematics ♣ Teaching Aids
Science with Health Education	Bones, muscle and blood systems	♣ The skeletal system ♣ The muscular system ♣ The circulatory system
Cultural Education	Background to the study of morals	♣ Introduction to Morality ♣ Sources of Morality ♣ Human beings and other creations.

The list of course units above was presented to KYU University Secretary (then ITEK academic registrar) and the Head of Department Teacher Education and Extension for review before development begun. Project staff and selected KYU staff who had received training in multimedia development participated in multimedia development to form a team of three educational content design specialists and three-technology specialist that developed the materials. The enhanced curriculum was first published online (http://www.itek.ac.ug/curriculum) in October 2001 and was continuously updated until the final version that was also made available on CD ROM at the end of July 2002.

During the assessment, it was also discovered that reference materials were lacking. Digital content in form of digital resource libraries (DRLs) were developed. These digital resource libraries integrate text, graphics, audio and video segments to demonstrate best practices, where appropriate. The videos demonstrate lessons by lecturers at KYU (then ITEK) and tutors from selected PTCs. Where appropriate, the products present different interactive activities and quizzes that are based on the curriculum. One volume of each subject containing one unit was produced and made available on CD ROM by the end of July 2002.

3.   Local office set up & set up of multimedia development lab

Office space was provided by KYU (then ITEK) for the project office. Security was installed in the form of reinforced doors and bars on windows by the project. The office is equipped with four multimedia development workstations and peripherals. The peripherals include two printers, a scanner, CD-R and/or DVD-R drives, audio and video input devices and UPS devices, a phone line, air conditioning. The office/multimedia development lab was refurbished by the end of December 2000 and equipment was delivered and installed in February 2001.

4.   Set up of User and Training lab

Since there wasn't room to be used as the training lab, KYU (then ITEK) constructed a room as an extension to the already existing computer center. The project provided funding for the refurbishment of the room. The refurbishment included installing secure doors and windows, rewiring, installing adequate lighting, repairing interior walls and ceiling, painting, providing floor tiles and air conditioning. All the refurbishment works were completed by the end of December 2000. The equipment including 20 computers, scanner, color printer, B/W printer, digital copier machine, CD Writer and CD server were delivered in February 2001 and installation and networking took place thereafter. The first group of trainees underwent training in February 2001.

5. Refurbishment and equipping of Computer Labs in PTCs

USAID together with the Ministry of Education and LearnLink Connect-ED finalized the selection ofPTCs at the end of February 2002. The last PTCs selected were Soroti Primary Teachers' College in Soroti and Lodonga Core PTC in the new Yumbe district.

Hawa Nyende, the Connect-ED Assistant Coordinator and the Kyambogo University Estates Manager visited the proposed sites for all the "new" and originally selected PTCs in March 2002. After visitation and assessment was done, Ladonga was deselected due to the lack of basic infrastructure requirements resulting in the selection of Canon Lawrence Non Core PTC. The eight PTCs that were finally selected and the project has been working with include:

Name of College	Location of the College
Gulu Core PTC	Gulu (Northern Uganda)
Canon Lawrence PTC Boroboro	Lira (Northern Uganda)
Soroti Core PTC	Soroti (Eastern Uganda)
Mukuju Core PTC	Tororo (Eastern Uganda)
Shimoni Core PTC	Kampala (Central Uganda)
Kibuli Core PTC	Kampala (Central Uganda)
Ndegeya Core PTC	Masaka (Western Uganda)
Bushenyi Core PTC	Bushenyi (Western Uganda)

All the colleges identified rooms that the project helped refurbish.
Refurbishment to the newly selected colleges (Canon Lawrence, Soroti, Kibuli an Ndegeya) included installing secure doors and windows, rewiring, installing adequate lighting, repairing interior walls and ceiling, painting, provision of fire extinguishers, floor tiles and air conditioning. Extra works were also done such as block off ceiling/wall for security and lightening protection.

Once the refurbishment was completed, the equipment procured by AED was delivered to the four newly selected PTCs. The equipment includes ten computers, a server, UPS systems, two printers, a scanner, print server, digital camera, CD Writer, photocopier and projector. The

equipment was installed in all centers by the end of August 2002 and networking was completed around the same time.

The project also made minor refurbishment works to the originally selected colleges (Bushenyi, Shimoni, Gulu and Mukuju) that included reinforcing burglar proofs to secure doors and windows, rewiring, installing adequate lighting, repairing interior walls and/or ceiling, painting, provision of fire extinguishers and servicing of existing air conditioning.

Original implementing partners earlier purchased the equipment for these colleges. It was obtained from USAID warehouse and delivered to the colleges. The equipment includes ten computers, a server, UPS systems, two printers, a scanner, print server, digital camera, CD Writer and projector.

A local (Ugandan) person who were hired in May 2002 and undergone training for one month at Kyambogo were deployed at each of the colleges to carry out the training development and implementation.

All the colleges were fully operational and open for training by September 2002.

6.   Internet connectivity

A Short Term Technical Assistant (Glenn Strachan) selected Bushnet (a local ISP) to offer a connectivity solution to Connect-ED centres in April 2002. All of the sites connect back to Kyambogo where they share 2mb of connectivity. Bushnet, through traffic management, assures that each site has a minimum of 64K access at any point in time, which can burst up to a much higher rate depending on overall use of the network itself. Aside from the bandwidth solution, Bushnet provides ongoing technical and training support, hosts the ITEK Website; web based e-mail solution, and helped configure Linux based servers for each PTC.

The table below summarizes the center's connectivity calendar.

Name of Centre	Connectivity Date
Kyambogo University training lab	May 2002

Shimoni Core PTC	August 2002
Kibuli Core PTC	September 2002
Ndegeya Core PTC	September 2002
Bushenyi Core PTC	October 2002
Mukuju Core PTC	October 2002
Soroti Core PTC	November 2002
Gulu Core PTC	December 2002
Canon Lawrence PTC Boroboro	February 2003

7.   Private and Public Sector Participation

Connect-ED has increased the potential for access to the Internet within the rural communities through the establishment Internet Points of presence for local Internet service providers. Bushnet, a local Internet Service Provider (ISP) was selected to offer connectivity solution to Kyambogo University and all the Primary Teacher's Colleges. The ISP was selected based on the desire to create an infrastructure that does not already exist, especially in the Up-Country region and can extend the benefits of that connectivity to the community surrounding the Primary Teacher's College.

Bushnet has provided a connectivity solution using a mobile telecommunications provider (MTN) towers. MTN has towers all over the country, and they agreed to allow Bushnet the use of the towers and to reduce their pricing structure for this project. Those same towers are used to convey wireless data connectivity into the points where the project needs them to be. This has made it possible for additional customers to get connectivity using the Connect-ED infrastructure and helped grow Bushnet's business in the rural towns like Gulu, Tororo (Mukuju), Soroti, Bushenyi and Masaka (Ndegeya).

By the end of June 2003, up to 15 clients had got connectivity from the Connect-ED infrastructure incuding BDC, DFID, CEPA and some NGOS and some companies.

8. The Professional Development Course

A Professional Development Learning Environment for computer literacy has been developed and is available in print and on CD ROM. This course acts as a reference for tutors and has been developed with scenarios and activities that are related to Ugandan teachers. Its format provides ground for learning technology for Ugandan teachers.

The Professional Development Learning Environment (PDLE), which is a training manual and CD-ROM containing a variety of training materials including Introduction to Computers to basic web design was developed with the help of Short Term Technical Assistant (Margie Joyce) in May 2002. All materials were collected from the web; at the same time, additional materials were developed in-house (Connect-ED at Kyambogo University) based on appropriate local Ugandan situations and scenarios.

The framework for Connect-ED's Professional Development Learning Environment (PDLE) had been created and was temporarily housed at http://learnlink.aed.org/ConnectED/ by the end of May 2002.

The PDLE was created as a self-paced tutorial, as a forum for discussion, and as a vehicle for discussion and collaboration in a face-to-face training. The goal of this training is to increase the learner's understanding of new computer technologies and to learn how to effectively integrate those technologies into daily professional activities.   This information is also available in print and on CD-ROM.

The Professional Development Learning Environment (PDLE) web-based tutorial is divided into seven lessons. The lessons provide concrete information about computers, the Internet, using technology in the classroom and even creating your own website. Since interacting with information is the best way to gain and retain knowledge, users are encouraged to use the collaborative tools in the PTC online Curriculum as well to share ideas and resources by

submitting your work generated in this tutorial to Kyambogo University. The goal is to make this tutorial interesting, exciting, and reflective of users' eagerness to share these different computer-mediated learning strategies and tactics with others.

9.   End User Training

For users to effectively utilize the ICT based Teacher Training materials; training in Computer skills is continually taking place at the Connect-ED centers at KYU and the eight PTCs. The training target groups include:

- DTE Students: These are Diploma In teacher Education DTE students at Kyambogo University who are former primary school teachers on completion of the course, will be posted in the PTCs to become primary school teacher trainers (Tutors).
- KYU Staff that lecture to various students including DTE and BED and conduct various workshops and out reach programs for PTC tutors. They also play an important role in the PTC curriculum formulation, development and implementation.
- MOES Staff who are officials from the Ministry of Education and Sports who directly concerned with Connect-ED project as well as formulation and implementation of policies that will affect the project and play a supervisory role.
- Bachelor of Education students at KYU who specialize in Curriculum development and in administration, these are the ones who will end up in the PTCs and are since they are curriculum designers; they directly or indirectly influence the project in one way or another.
- Coordinating Centre Tutors (CCTs) also called in service tutors at the PTCs who are involved in training the primary teacher trainees in the PTCs and also in constant contact with primary school teachers and are attached to Primary Teacher Colleges
- Pre service tutors who are teachers / lecturers in the PTCs. They differ from the in service tutors in that while the in service tutors are in constant contact with primary school teachers and visit primary schools, pre service tutors are only concerned with PTC students.
- Students at the PTCs who on completion become primary school teachers.

End user training had started by the end of February 2001 at Kyambogo University while training at the PTCs did not start until the end of August 2002. The training covers only the packages that were thought to benefit educators these include:

- Microsoft Word for typing & editing notes and lesson plans
- Microsoft Power Point for making presentations
- Microsoft Excel for processing exam results
- Inspiration for creating ideas for research & making charts
- Using the Internet for searching for information
- Using collaboration tools such as chat and discussion boards to collaborate with other educators
- Advanced Work Shops in using multimedia based programs and products (online curriculum and Digital resource Library)

All these were packaged in the Professional Development Learning Environment (PDLE) as mentioned earlier.

By the end June 2003, the following were the training totals.

Centre	Total # of trainees
Bushenyi	368
Ndegeya	204
Shimoni	267
Kibuli	184
Soroti	212
Mukuju	145
Lira	304
Gulu	87
Kyambogo	360
Total	**1902**

Gulu's training numbers are notably low because they experienced long periods without electricity following a blown up transformer.

10. Project Staff Hires

The project local coordinator was hired in June 2000. Two assistant coordinators were later hired in September 2000. The three originally selected Kyambogo University (KYU) lectures (then Institute of Teacher Education Kyambogo-ITEK) who participated in the "train-the-trainer" sessions were hired to work full time on the project as Creative Materials Design Specialists in January 2002. Finally, the eight new Project Technical Assistants to work at the PTCs were interviewed by the Connect-ED panel; a final list of candidates was decided upon after the Project Manager's second round of interviews in February and they were later hired in May 2002. The people selected were from areas surrounding the respective 8 PTCs and principals at the respective colleges recommended two of them. It is hoped that this will ensure longevity and a "personal investment" in their communities.

The Connect-ED Project Technical Assistants (PTAs) include:

- ♣ Kakungulu Alexander (Shimoni)
- ♣ Sophia Masembe (Kibuli)
- ♣ Lwebuga John (Ndegeya)
- ♣ Sammy Walusimbi (Mukujju)
- ♣ Nixon Eric Olangi (Gulu)
- ♣ Richard Drici (Lira)
- ♣ Andrew Lukyamuzi (Bushenyi)
- ♣ Regina Aacha (Soroti)

11. Identification of Connect-ED Project Interns and Volunteers

A student from Makerere University was introduced to Connect-ED as the new Intern (Stella) who is charged with designing two PTC websites (Shimoni and Kibuli). She was introduced to Shimoni and Kibuli PTC and worked together with Phoebe—Connect-ED's materials design specialist to design the websites.

Three Kyambogo University Counterparts (Julie, Emmanuel and Raymond) expressed willingness to work on the project as volunteer counterparts. They participated in a couple of training sessions of the DTE students at Kyambogo training lab in March 2002 although their participation continued to be irregular. All claim to have a busy and tight schedule. It was noted however that the schedules were not specific enough about exact time commitment, making it very difficult to plan ahead. One counterpart later volunteered to work at Kyambogo user lab.

At the PTCs, up to four volunteer counterparts were selected to work with the Project Technical Assistants to help with training and assisting individual users from time to time. Only one to two of the counterparts have been involved in each college, all claiming a busy and tight schedule. The following counterparts were otherwise identified:

Kibuli
1. Kibuuka Jane
2. Jacquelyn Mulindwa
3. Sewanyana Teo

Bushenyi
1. Kamushaga Joseph
2. Ashema Charles
3. Rwita Grace
4. Muramuzi Justus
5. Mugisha Joel

Mukuju
1. Waira John
2. Adiit Margaret
3. Onyait James
4. Owor Eleazer

Gulu
1. Harriet Atim
2. Francis Acaye
3. Goerge Okello
4. Dorren Amito
5. Wallance Tadeo

Shimoni
1. Charles Naseke
2. Kasirye Betty
3. Suzan Nabwire
4. Onyai Mariano Tom

Ndegeya
1. Lubega Joseph
2. Wanzala Richard
3. Naziwa Robina
4. Sarah Ndagire

Canon Lawrence

1. Betty Munnu
2. Okene William
3. Engol Yuventine
4. Richard Ochola
5. Okwor Denis
6. Ogwang Eugine

Soroti
1. Aloki William Akol
2. Aisu Noel
3. Edonyu James
4. Amongin Tukei Jane Immaculate
5. Simon Odwillo
6. Tukei John Patrick

Kyambogo University

1. Elliot Nsega

12. Setting up ITEK and PTC web sites:

The ITEK website was set up from which the computer assisted materials (online curriculum) are linked. The website was completed and uploaded by the end of March 2001. One of the connect-ED Staff (Hawa) worked with the PTAs and counterparts at each college to set up the college websites. The websites were completed and uploaded by the end of May 2003. The table below shows the URLs for each PTC website.

College	URL
Kibuli PTC	htttp://itek.ac.ug/Kibuli
Shimoni PTC	htttp://itek.ac.ug/shimoni
Gulu PTC	htttp://itek.ac.ug/gulu
Canon Lawrence	htttp://itek.ac.ug/lira
Mukuju	htttp://itek.ac.ug/mukuju
Soroti	htttp://itek.ac.ug/soroti
Ndegeya	htttp://itek.ac.ug/ndegeya
Bushenyi	htttp://itek.ac.ug/bushenyi
ITEK	htttp://itek.ac.ug/

13. Events and Activities

Several meetings were held with USAID to domo products and receive feedback received. Other meetings held included meetings with MOES, Kyambogo University Vice Chancellor, Micro enterprise, AED Basic Project, Principals from the participating Colleges, Peace Corp Volunteers and other stakeholders as need arose.

The project labs were officially inaugurated on 12th September 2002. Ndegeya PTC was selected to host the inauguration ceremony of Connect-ED. The function was officiated by the Hon: Minister of State for Higher Education Ms. Betty Akech who represented the Hon: Minister of Education and Sports Dr. E. Khiddu Makubuya. The function was also attended by The USAID Director and the Charge' D'Affaires of the American Embassy, Kyambogo University VC among others.

Principals from the PTCs met at Kyambogo to discuss sustainability in September 2002. The principals also met again at Hotel Triangle Annex Jinja in June 2003 where they presented ideas for opening their labs to the local community. Each PTC principal has developed a business plan that will be used to plan for sustainability as labs open their doors to the nearby communities.

The Connect-ED close out conference was held in June 2003 and was attended by the USAID Chief Technical Officer for Connect-ED, Director of Education (Dr. Akankwasa") who represented the Permanent Secretary, the Commissioner Teacher Education, principals from participating PTCs, the AED Vice President as well as counterparts and the project staff.

14. Staff Travels and Short Term Technical Assistants

Name:	Purpose and destination	Date
Cissy Segujja, Ast Coordinator	Mukuju PTC, Bushenyi, Shimoni and Busubizi PTC for the pre assessment survey	October 2000
Gini Wilderson, Education Technology Consultant	Education Technology training and "train the trainer" sessions at Kyambogo	February – March 2001
Edward Contreras Burge, Internal Evaluation Consultant	Internal evaluation and to model future development of computer assisted materials	May 2001
Hawa Nyende (Ast Coordinator) Edward Turyomurugendo (Kyambogo Estates Engineer)	Field assessment visit at the PTCs and inspection of the labs to discover refurbishment needs	October 2001
Hawa Nyende (Ast Coordinator) Edward Turyomurugendo (Kyambogo Estates Engineer)	Field assessment visit of the newly selected PTCs and inspection of the labs to discover refurbishment needs	January 2002
Stacy Cummings, Project Manager	Support and administrative activities	January 24, 2002 – February 20, 2002
Wendy Kohn, Multimedia development Consultant	Work with the team to model the direction of the computer assisted materials	January 26, 2002 – March 15, 2002 & July 2002
Glenn Strachan, Telecommunications Consultant	Selection of ISP to offer connectivity support to the project centers.	March 18, 2002 – April 2, 2002 and October 2002
Margie Joyce	Professional Development Learning Environment consultant	May 2002 – June 2002 & November 2002
Steve Cisler Cissy Segujja (Ast Coordinator)	Evaluation	January – February 2003
Jonnie Akakpo	User and troubleshooting manual	February 2003- March 2003
Linda Leonard	Support and administration and Close out	August 02, January 03 and June 03
Project Technical Assistants	Troubleshooting training	March 2003
Hawa Nyende	PTC Websites	April – May 2003
Cissy Segujja	Networking Africa's future conference in Pilannesburg South Africa	April 03
Fredrick Wamala Hawa Nyende	Support supervision at Lira, Gulu and Soroti PTCs	March 2003
David Ongom Cissy Segujja	PTC sustainability and outreach plan	June 2003

15. Challenges

Given the achievements, a number of challenges gave been faced. They include:

1. **Policy Restriction**

   In the year 2000, the Ugandan President made an announcement abolishing cost sharing in Primary Teacher Colleges, which was later implemented as a new policy. The policy states that government will sponsor 100% all students at the Primary Teacher's Colleges both pre service and in-service. The sponsorship includes all scholastic materials; therefore, the students cannot pay any fees for education or learning materials making student user-fees for sustainability challenging.

2. **Cost**

   The recurrent costs of running the technology centres is high. The cost of connectivity is $400 dollars a month per centre; the electricity costs have also increased at the colleges making the labs expensive to operate within the existing Primary Teacher's College budget due to the colleges dependency on Ugandan government funding. At this point, Connect-ED is working with the Ministry of Education and Sports who is willing to propose making additional funding for these 8 Primary Teacher's Colleges labs.

3. **Imbalance in Primary Teacher's College establishments**

   At this time eight out of 45 Primary Teacher's Colleges have benefited from the Connect-ED pilot project. Of these 45 total Primary Teacher's Colleges, 23 of are Core Primary Teacher's Colleges and 22 are Non-Core Primary Teacher's Colleges. Seven out of the nine Connect-ED centres are located in Core Primary Teacher's Colleges, one in a Non-Core Primary Teacher's College and the other one at Kyambogo University. Concern has been expressed that not all colleges are able to benefit from what Connect-ED has to offer and feel there is an imbalance in infrastructure between the core Primary Teacher's Colleges and non-core Primary Teacher's Colleges. At the same time, basic infrastructure needs (such as adequate electricity and physical space) are required to make certain pilot projects, such as this one, have a chance of success.

These factors were taken into consideration by the MOES and the project when initially identifying pilot schools.

4. **Time**

   Given the limited amount of time the project is running, only one unit in each subject has been enhanced because multimedia products take far long to produce because of their complexity. In Maths it is Organizing Mathematics Lessons, in SST it is the world, in Science it is Bone, muscle and blood systems, in culture it is Background to the study of Morals, in Foundations of Education it is Human growth and, in Language Education it is Literature in English language teaching.

5. **Technical Support**

   Each Primary Teacher's College technology centre has a resident project technical assistant (PTA) who is implementing training, managing and maintaining the centre. The project technical assistant is paid by the project whose position doesn't exist in the Primary Teacher's College staff structure.

6. **Scheduling**

   Reconciling the training and use of the technology centre with the Primary Teacher's College daily schedule has been a large challenge as students and teacher trainers are involved in a number of college activities.

7. **Workload**

   Up to three technology champions (counterparts) were selected from each Primary Teacher's College to receive training so that they can assume the role of training when funding stopped. However, these counterparts are tutors who have little time dedicated to the project because their heavy workload as full time Primary Teacher's College staff.

16. The way forward

a) **Out reach activities at the PTCs for sustainability**

Plans for sustainability will include opening the labs to the nearby communities and charge reasonable user fees that will help to run the labs. This will include implementation of activities like:-

- Project Technical Assistant (PTAs) conduct open house events for the outreach community where they will target district administrators, NGOs, corporate companies like banks etc. and make the services offered in the lab known.
- Implement marketing strategies to attract the outreach community
- Implement training for the outreach community during holidays to ensure that business doesn't overpower educational use of the lab. The outreach program will be dependent on the PTC calendar.

b) **Connect-ED training for Ugandan educators**

Training for Ugandan educators will continue to take place during the school term for the following groups: - CCTs, tutors, students, PTC staff, teachers from Dem schools and principals. The Project Technical Assistants (PTAs) will be encouraged to take weekdays off and then work during the weekends when trainees are free to solve the problem of scheduling.

Training records will be compiled and updated regularly using USAID's TraiNet software. And Project Technical Assistant (PTAs) shall implement training for principals at their convenience. To ensure that all the principals are in position to communicate to each other and use technology to exchange ideas as principals.

c) **Coordination with stakeholders.**

Selected point persons will handle coordination with various stakeholders like the MOES,

USAID, KYU and PTC principals. The stakeholders will be updated on a monthly basis. Regular meetings will be held for example; the principals will meet once a quarter while all the stakeholders will meet twice a year.

d) Multimedia Development

Completion of all the units in the online curriculum will take place. The PTCs will be more involved in this activity. The PTC counterparts will work with the development team to select resource persons who will be trained so that they an contribute to the development of the materials

e) Extending the Connect-ED model to other core PTCs

Collaboration and work with the Ministry of Education and Sports to avail them with the necessary information to facilitate the extension of the model.

f) Establishment of the post of computer laboratory technician

The assistant commissioner planning in the Ministry of Education and Sports advised that the quickest way to establish this position is through the 19 non-teaching staff positions at the PTCs. We intend to pursue this advice further and work with the MOES and the principals to design the job description of the computer laboratory technician.