

# ICT and Education in The Gambia

This work was compiled by Saweda Liverpool and Cliff Missen



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The WiderNet Project continues to expand. This involves new projects and subprojects, all of which work towards our main focus: To improve digital communication in developing countries.

## Executive Summary

Information they say is knowledge and knowledge, wealth. But to be useful, knowledge and information must be effectively communicated to people. Education is the communication of information. As a source of knowledge, access to and the spread of information, play an important role in the promotion of change in an economy... whether economical, cultural, legal, social political or technological. (IDRC: 1995) Given the crucial role of education in development, and the expansion of Information and Communication technology (ICT) in the global economy, the role of ICT in education cannot be overemphasized. The adoption, use and expansion of ICT in tertiary academic institutions in West Africa remain slow and inadequate. Thus the area of focus presently is on ICT and Education in West Africa looking at The Gambia. For the purpose of this research and in the bid to conduct a needs assessment of the use of ICT in Gambia's tertiary institutions of learning, for the WiderNet Project, I spent a total of 6 weeks in the Gambia from the 27th of May 2002 till the 7th of July 2002. Work and research was conducted during 5 out of these six weeks.

The Gambia is situated on the Atlantic Coast of West Africa. With a total area of about 11,300 sq km ( land area 10000 sq km and water area 1300 sq km),. The country extends eastward from the sea for some 300 miles (480 kilometers) along both banks of The River Gambia. The Gambia is almost completely enclosed by Senegal sharing borders with Senegal on its landward sides. The Gambia has 5 divisions and 1 city Banjul which is the Federal Capital. The other divisions are: Lower River, Central River, North Bank, Upper River and The Western Division.

## **GOALS/OBJECTIVES**

The institution I primarily worked with in The Gambia was The Gambia College “School of Public Health”. My intended goals during the period spent in the Gambia were

1. To help The School of Public health set up a small intranet comprising of 5 workstations and a server as well as a copy of the WiderNet Project’s eGranary Digital Library, donated to the College by the WiderNet Project,
2. To consequently promote better communication for The University of Iowa/Gambia Linkage project and
3. To conduct a needs assessment of ICT and education in The Gambia with a focus more on tertiary education

### **The Gambia College**

The Gambia College is one of the main institutions of higher learning in the country. With a population of over 1 million, the country’s major tertiary educational institutions are The University of The Gambia, The Gambia College and the Gambia Technical Training Institute (GTTI). Gambia College is made up of 4 schools; The School of Education, The School of Agriculture, The School of Nursing and The School of Public Health. Though I worked directly with The School of Public Health, my work extended to the college as a whole as well as the other institutions mentioned. This institution serves as a training ground for the majority of the countries professionals and educationists. The use of ICT in the college can be said to be at its initial stages. When I arrived at the college, it had 15 stand alone computers in the computer lab of the Brikama Campus used basically for the purpose of word processing. These 15 personal computers (pc's) are part of a 25 computer acquisition funded by the World Bank. The World bank under a project called the "Third Educations Sector" project has not only donated these computers, but is also funding the construction of a new computer lab. Another project by The African Development Bank (ADB) purchased 12 computers for the School of Nursing and Midwifery located at the Banjul Campus. Similarly, these computers are stand alone pc's and were not in use during the course of my visit because of an inability to procure the required cables.



A look at some of the computers donated to the School of Nursing

### **The University of The Gambia**

The University of The Gambia which is still a fairly new institution was established by an Act of the National Assembly of the Gambia in March 1999. It was established to provide the opportunity for the attainment of higher degree studies in the country. A University Council was constituted in May 1999 top see to the development of degree programs in areas considered to be of critical need which had previously identified in the country by various commissions and task forces. These areas are:

- Health and allied sciences, including medicine, public and environmental health, and nursing
- Agriculture and natural resources;
- Economics and management sciences;
- Construction management;
- Physical and natural sciences including computer science; and
- Humanities and social sciences, including education

Presently the faculties that have taken off are:

1. Faculty of Medicine and Allied Health Sciences
2. Faculty of Science and Agriculture
3. Faculty of Humanities and Social Sciences
4. Faculty of Economics and Management Sciences



The University of Gambia's server, hub and modem



The University of Gambia Computer lab

### **The Gambia Technical Training Institute (GTTI)**

GTTI offers two year craft and technician training programs. The courses offered include information technology, mechanical, electrical and construction engineering. Students earn either a certificate or a diploma, and some of these qualifications are awarded or validated by British institutions such as City and Guilds of London Institute, Pitman, and the Royal Society of Arts examining board. The DOSE has ministerial purview over GTTI.

### **Management Development Institute**

MDI is an in-service management training, research and consultancy institution. Courses are part-time and include accounting, economic management, general management, information technology, and courses on gender. MDI, in collaboration with the Personnel Management Office (PMO), also runs courses for middle and top-level managers in the civil service. MDI is under the office of the President.

## **An assessment of Information and Communication Technology (ICT) in The Gambia**

Like most African Countries, Gambia still has a lot to do with regards to its Information and Communication Technology Sector. The nation as a whole has made great strides to embrace the use and spread of ICT. Thanks to the UNDP Internet Initiative for Africa (IIA)<sup>1</sup> the ICT culture has already been imbibed. However, like in most developing country limited finances, lack of IT personnel and inadequate planning pose serious problems and serve as major constraints to the sustenance of effective IT systems in the country. Through numerous projects (of International and National nature) institutions and state departments have been able to procure and set up computer labs. But over the years, lack of maintenance due to various issues most often related directly or indirectly to financial constraints has prevented the country from sustaining these projects.

On the brighter side, the Gambia already has an extremely impressive telecommunication infrastructure. Access to Telephones is wide spread and extends to the rural areas. Alongside the National Telecommunications operator; GAMTEL, numerous private owned Telecenters also exist. In any case the National Telecommunications operator is the primary ISP and the country's gateway is a satellite system from the GAMTEL Satellite Station in Abuko, The Gambia to Teleglobe in Canada. All other ISPS make use of this gateway to provide services to their users.

However, even with the impressive telecommunication infrastructure within the country the widespread use of computers and the Internet still remains a problem. There is a high level of computer illiteracy and even though the desire to extend Internet services to rural areas exists, other numerous problems exist including the lack of or inconsistent power supply (electricity) as well as high costs of setting up such systems. Because of the restrictions within the country the use of satellite technology has not been adopted.

Thus, though the nation still has far to go, it cannot but be mentioned that they have made considerable progress. It appears to be a recognized fact that the nation needs to not only incorporate ICT into its national policy but there is a need for the public and private institutions (especially the educational institutions) to develop strategic IT plans.

During this preliminary visit, we concentrated on getting a small network set up i.e. an Intranet and local area network comprising of 5 workstations and a server. This involved setting up the network components donated by The WiderNet Project, in Iowa. We set up the 5 personal computers and connected them to an eight port hub with network cables and ensured that the work stations could access the Digital Library, (information on health, literature, general facts, etc) we had on the 60G hard drive of the server. We also conducted a needs assessment research to enable us discover how a linkage could be fostered by the WiderNet Project and academic institutions in the Gambia

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<sup>1</sup> <http://www.un.gm/undp/ict/raf97021.htm>



The Intranet!!!



The Internet!!!

### Opening of the New Computer Lab and WiderNet Field Library



## Full Report



The WiderNet Project's eGranary Digital Library



The School of Public Health Computer Room

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## THE GAMBIA



The Gambia is situated on the Atlantic Coast of West Africa. With a total area of about 11,300 sq km ( land area 10000 sq km and water area 1300 sq km), the country extends eastward from the sea for some 300 miles (480 kilometers) along both banks of The River Gambia. Near the mouth of The River, the country is over 30 miles (48 kilometers) wide but further upriver the width diminishes to 15 miles (24 kilometers). On The Coast, it meets -the Atlantic with impressive sand cliffs and sports miles of unspoiled palm fringed beaches. It borders with the Republic of Senegal on the landward sides. The Gambia is almost completely enclosed by Senegal.

The country is mostly a low Plateau which decreases in height as it nears the Atlantic Coast. The country's narrow width and the large River that drains it have, however, given it more of a parkland look, with large areas covered by a variety of trees. The Gambia has 5 divisions and 1 city Banjul which is the Federal Capital. The other divisions are: Lower River, Central River, North Bank, Upper River and The Western Division.

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Given the nature and speed of information gathering, I decided to focus more on the Gambia College and worked with them to fulfill the above mentioned objectives. However, other institutions consulted with include the University of The Gambia and The Gambia Technical Training Institute (GTTI)

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See full report on the situation of ICT in The Gambia College – page

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### **An assessment of Information and Communication Technology (ICT) in The Gambia**

Like most African Countries, Gambia still has a lot to do with regards to its Information and Communication Technology Sector. The nation as a whole has made great strides to embrace the use and spread of ICT. Thanks to the UNDP Internet Initiative for Africa (IIA) the ICT culture has already been imbibed. However, like in most developing country limited finances, lack of IT personnel and inadequate planning pose serious problems and serve as major constraints to the sustenance of effective IT systems in the country. Through numerous projects (of International

and National nature) institutions and state departments have been able to procure and set up computer labs. But over the years, lack of maintenance due to various issues most often related directly or indirectly to financial constraints has prevented the country from sustaining these projects.

On the brighter side, the Gambia already has an extremely impressive telecommunication infrastructure. Access to Telephones is wide spread and extends to the rural areas. Alongside the National Telecommunications operator; GAMTEL, numerous private owned Telecenters also exist. In any case the National Telecommunications operator is the primary ISP and the country's gateway is a satellite system from the GAMTEL Satellite Station in Abuko, The Gambia to Teleglobe in Canada. All other ISPS make use of this gateway to provide services to their users.

However, even with the impressive telecommunication infrastructure within the country the widespread use of computers and the Internet still remains a problem. There is a high level of computer illiteracy and even though the desire to extend Internet services to rural areas exists, other numerous problems exist including the lack of or inconsistent power supply (electricity) as well as high costs of setting up such systems. Because of the restrictions within the country the use of satellite technology has not been adopted.

Thus, though the nation still has far to go, it cannot but be mentioned that they have made considerable progress. It appears to be a recognized fact that the nation needs to not only incorporate ICT into its national policy but there is a need for the public and private institutions (especially the educational institutions) to develop strategic IT plans.

### **Actual work done in The Gambia**

Whilst I was at the college, I worked closely with Mr. Abdou Karim, the sole computer expert for the entire College. In the first week, we concentrated on getting the small network set up i.e. an Intranet and local area network comprising of 5 workstations and a server. This involved setting up the network components donated by The WiderNet Project, in Iowa. We set up the 5 personal computers and connected them to an eight port hub with network cables and ensured that the work stations could access the Digital Library ,(information on health, literature, general facts, etc) we had on the 60G hard drive of the server. Though a pretty simple procedure, it took

us about 3 working days to actually get it set up and to a point we could call it functioning. The first week started off pretty slowly and we were faced with several issues that either just slowed us down or outright prevented us from completing the set up of the network. The first day at work involved the delivery of the machines and a visit round to several of the principal officers of the College. Not having the correct cables to set up the computers, we were forced to do other things whilst we placed an order for them. Thus, the first 2 days were spent trying to familiarize myself with what was going on with regards to ICT and education in the country, see where the college was within the broader spectrum of things and to get a feel of what the decision makers, other College Staff and students felt about ICT generally and specifically in their field of specialization and their school within the college. Thus I had several discussions with various principal officers like the principal and vice principal of the college, the computer expert himself and some of the students.

By the end of the first week, we had the Intranet set up and the computers configured and working, though not perfectly. Two of the computers appeared to have developed some minor problems probably in the course of their movement from The United States to The Gambia. Having several computers available and not currently in use, the school of public health provided two more computers (in almost better condition than the ones we brought) such that by the 5th of July we had 7 workstations functioning.



The initial set up of the lab...[click to see larger photo](#)

The second week was basically spent preparing and conducting interviews for the needs assessment research. In addition to the questionnaire I brought to conduct my ICT campus survey, I designed questionnaires for the various institutions I wanted to visit, for students and other ICT users. I was able to meet with the Head of the Information Technology Human Resource Development Directorate (ITHRD) a directorate under the Department of State for Education (DOSE) and the body concerned with policy issues with regards to ICT and education in the country. From this meeting, I was able to learn that attempts are being made to spread out the use of ICT in education. Presently, there are computers in each of the regional offices of the

department of education across the country. Though there are only one or 2 computers in each office, they are supposedly connected to the Internet. This was also part of The Third Education Sector project.

During the second week, I was able to meet with the director of one of the popular ICT organizations and Internet Service Providers (ISPs) in the country (from these interviews, I got a better understanding of the national situation and a view of the perspectives of the private ICT related organizations. I was also able to pay a visit to the computer lab of the University of Gambia. This was quite a shocking experience. Though the institution had an impressive infrastructure set up, the utilization capacity was low. The University student lab was furnished with 13 computers and 1 (one) lab manager, as the sole computer expert is presently on study leave abroad.

My experience in The Gambia was very enlightening and intriguing. I have been able to discover that like the country as a whole, Gambia College, (with respect to ICT) also depends to a large extent on aid in various forms. No computer at the college was actually purchased by the Institution. They were all acquired via projects and programs of donor agencies. I was also able to see that though the country is a small one, they have made considerable progress with regard to ICT provision in educational institutions. However, the major problems seem to be related to issues such as wide spread accessibility and sustainability. For the Gambia College, there appears to be a vision but no means to transform the vision to reality. Not having a network is preventing the institution from attaining the heights it is capable of. Its lack of a network already prevented it from benefiting from a UNDP led initiative on ICT and education in the country. The Nation's University and The Gambia Technical Training Institute (GTTI) which already had networks were able to benefit from this project. The UNDP project has made it possible for these 2 institutions to have free Internet access for a whole year (which ends in a couple of months). However, the University is still yet to come up with some sort of plan or strategy to handle the inevitable change once the one year period of free Internet Services is up and to ensure that this IT system is sustained. GTTI on the other hand is making moves to cater for the taking over of the responsibility of the payment for this previously free service

The last 3 weeks were spent generally fine tuning and ensuring that the small network and Intranet set up were working properly. During this time I also worked generally with the computer expert at the college and gathered more data. The 3rd week was generally lower keyed than others. Lack of light (electricity) on Monday and Tuesday completely halted all attempts to get things done. Wednesday found us working with the newly acquired computers at the School of Public Health. I spent the day ensuring that all the links were working on the Intranet and talking with some of the students of public health about who WiderNet is, what we do and my personal interest in ICT. The light situation at the college was actually much better than in the other major areas like Bakau and Kotu. This was attributed to the fact that the college shared the same line as the Airport and was thus known to have reliable power supply.

One thing which we were able to do during the third week was identify and rectify (with the help of the VSO personnel at the Gambia College and to the best of our ability given the available resources) the problem with the 2 problematic machines mentioned earlier in the report. For one we just played around with the cables and it worked and for the other we replaced the processor that had fallen out. However, upon fixing that problem we identified another problem; a faulty fan. Thus though the computer is presently working we are not using it but are waiting for a new fan to be acquired, either from another computer or purchased.

Though hindered by access to power, this week, the computer unit head still worked tirelessly to get an air conditioner and a phone line put in the room. With light on Thursday, I focused on preparing a tutorial/workshop outline for introducing people to power point.

The last 2 weeks at Gambia College went by so quickly. They were fun packed, exciting with quite a lot to do. I began the second week of the second half of the program at The School of Nursing in Banjul. I administered some questionnaires to the students and talk with the acting head of the school. The school of nursing was recently given several computers. About 12, which are not functioning now, because they require different cables before they can be set up.

Tuesday, the 25th of June takes me back to Brikama. Today I begin a workshop on PowerPoint with the 3rd year students of the school of Public Health. It was such a fun experience. The students were very interested and interesting. They absorbed the information and familiarized

themselves with the necessary processes very quickly. We worked together for about an hour and a half. Then they were divided into groups of 4 they were given assignments to prepare short presentations to be shown on Thursday. On Wednesday, I just worked with them by standing aside as they worked on their presentations and being there in case they had any questions and to clarify issues. On Thursday, they made some very enlightening and awesome presentations. They took their projects very seriously and were very professional in their presentations. This was one of the highlights of my stay here...working with the students and seeing them taking initiative, coming up with great designs and though enjoying it, still taking it seriously.

Also on Tuesday, I made a trip to the University. This is a very enlightening visit. I meet with the Vice Chancellor and the students as well as the lady in charge of the computer labs. My visit with the Vice Chancellor gives me a much better understanding of the situation there. As mentioned earlier, the institution appears to only now be realizing the need for serious consideration of how their Internet access is going to be sustained when the free Internet access provided by the UNDP project comes to an end in September. The institution has also recently hired a new IT professional. From my discussion with the VC, it appears that the pressing need of the University is to get its whole institution (which is fairly widely spread out) connected. However, the VC was very interested in promoting the training of the IT staff and the promotion of the use of ICT.

My last week also included a visit to the GTTI (Gambia Technical Training Institute). This was a very interesting experience. This institution has a Local Area Network and over 80 computers connected to it. It also benefited from the UNDP project's one-year free Internet access. It has 3 IT staff and apparent cooperation and support from the management. My last week at the college involved wrapping up...final meetings and discussions with people, a beautiful opening ceremony of the computer lab and a workshop on PowerPoint for some of the Staff of The School of Public Health.

During our first few conversations, the computer expert and I had mentioned the possibility of getting the computers in this newly set up lab connected to the Internet. Well after much hassle and tremendous effort, he was able to acquire some free Internet sharing software, which we

have installed. This enables the computers in the lab to connect to the Internet. However, there are still a few hitches and it cannot be said to be functioning perfectly.



Here we are in Gambia looking at The University of Iowa College of Public Health Website!!! Isn't that Just Great!!!

The Institution really appreciated the donations and furnished the WiderNet Project with a Thank You Letter -- see [www.widernet.org/sites/default/files/thankyouletter.jpg](http://www.widernet.org/sites/default/files/thankyouletter.jpg).

The Computer expert busy working in the newly set up computer room.



The final set up of the computer room



More views of the School of Public Health computer room featuring the Digital Library and Local Area Network made possible by the WiderNet Project



In summary, I would just like to say that this has really been an awesome experience. I was highly motivated by the guys I worked with, I learned a lot from them and the experience in general and believe that the WiderNet donation will be very beneficial here.



The Intranet!!!



The Internet!!!



Opening of The New Computer Lab  
and WiderNet Field Library



## Needs Communicated and Observed

### 1. The University of The Gambia

- Advice and assistance on the connection of the whole University campus.
- Training of Technicians
- Information and Consultation on The Development of IT plan

### 2. Gambia College (generally)

- A network that connects all 4 schools
- More Computer Technicians and Technician Training for present Computer Expert
- General Decision Makers Training
- More information and general education related materials (this includes materials for the various schools as well as strategies to ensure that these materials are used effectively by those they are intended for)

### 3. School of Nursing (particularly)

- More educational information ( lack of Medical and Nursing Journals)
- Staff training on the use of computer for teaching and just the basic programs

#### 4. **School of Agriculture**

- Modern Literature and research on Agriculture
- More Journals and general Information
- Staff training on the use of computer for teaching and just the basic programs

#### 5. **School of Education**

- Information on the Use of ICT for distance Education
- Materials on Education and the training of Primary and Secondary level teachers
- Staff training on the use of computer for teaching and just the basic programs

#### 6. **School of Public Health**

- More information on health related topics
- The need to incorporate the use of the information on the Intranet
- Staff training on the use of computer for teaching and just the basic programs

From my observation and from the information communicated to me whilst in The Gambia, it appears that there are many areas within which WiderNet could be extremely helpful and from which a link between Widernet and The Gambia could be very beneficial.

### **What can the WiderNet Project do for you?**

WiderNet is capable of providing partner institutions with consultation, planning resources and to equip and staff a center at the University of Iowa to host planners and technicians from these institutions.

We will provide targeted institutions:

- Bi-annual visits to your campus.
- Training and assistance in grants preparation.
- Annual in-country workshops for ICT planners and technicians.
- Space at the WiderNet Project each year for four ICT planners or technicians from each targeted university.
- A workshop space for visitors to gain hands-on training with computer systems similar to those being deployed at the target Nigerian universities.
- Internship opportunities in the Iowa City area for visiting ICT technicians.
- A mentor (UI professor from a similar discipline) for each visiting professor.
- Frequent email updates on ICT issues, cutting-edge technologies, and case studies.
- Ongoing consulting via email.
- CD libraries with hundreds of articles and Web sites pertaining to ICT in higher education and developing countries.
- Research into technologies, techniques, and opportunities for ICT planners and technicians.
- Web site hosting and email relay services.
- Gigabytes of academic Web materials (mirrored Web sites and custom collections) for each target university's Intranet server.
- Ongoing research, project reports, and findings that will be published on the WiderNet Project Web site and distributed via CD.

- Information and assistance in locating and registering for higher education ICT conferences and training opportunities in the U.S.
- Assistance with securing site licenses, corporate donations, academic databases, multimedia teaching resources, and computer training materials.
- Assistance in securing demonstration hardware and software.
- Bench testing of proposed or new systems.
- Updates on funding opportunities.

Your institution can take advantage of your allotted spaces at the WiderNet Project's workshop at the University of Iowa by sending up to four visitors a year. The visitors' stays may range from two weeks to two months, depending on their objectives. (Although, due to space restrictions, we cannot host more than two visitors from a single institution at any given time.)

The purpose of your visitors' stay could range from...

- researching funding possibilities
- investigating classroom teaching technologies
- developing campus ICT plans
- purchasing and bench testing new equipment
- receiving hands-on training with a specific ICT technology
- ... or all of the above!

For example, if you were considering implementing wireless networking on your campus, you might want to send a lead technician here to purchase the equipment, set it up in our lab under the guidance of a mentor, test and troubleshoot the equipment in various configurations while conferring directly with the manufacturer's technical support team, and then pack up the equipment and return to your university where they can deploy the equipment with additional coaching and troubleshooting from WiderNet staff.

The visitor's travel and lodging are to be paid by your university, so you can determine how much you are willing to spend and reimburse your travelers according to your university's policies. You can use funds from the MacArthur Foundation (you might want to consider writing such training trips into your first year's proposal) or other sources.

We estimate that the cost per participant to be:

- airfare: \$2,000
- room and board, local travel, insurance: \$800/week
- books & materials, fees: \$250 plus tuition for optional technical courses at the UI or Kirkwood Community College

Hence, a two week stay will run about \$3,900, while a eight-week stay will cost approximately \$8,650. (The WiderNet staff will assist in making travel arrangements and finding accommodations.)

Each year WiderNet Project staff visited Nigeria to consult at the universities, offer our Decision Makers Workshop, and train technicians. Please start thinking about which decision makers and technical support staff you would like to attend. At least four seats at each event are reserved for your university at no cost -- although we will try to accommodate everyone who comes. (Also, think about offering your university to host a training or workshop!)

We are planning an October "Techno Tour" conference at the University of Iowa for Nigerian university decision makers. There will be presentations from a wide assortment of university administrators and professors on the use of ICT in their areas. We'll have vendors and consultants from around the U.S. making presentations as well. We expect to host 20 or more attendees from Nigeria. This conference is funded under a separate grant from the U.S. State Department and the invitees are drawn from those who have attended our Decision Maker Workshop in Abuja. However, you may fund as many participants as you would like. We estimate the costs will be similar to a two-week stay at the WiderNet Project: \$3,900.

Finally, (whew!) we have an opening for two graduate students with ICT interests and skills to work in the WiderNet Project lab and provide research and consulting services for Nigerian universities. The person would have to be accepted into a two-year master's degree program at the University of Iowa (for example, Management Information Systems, Third World Development Support, Computer Science, or related field.) These assistantships would provide for reduced tuition and a modest salary. Please let me know if you have competitive candidates from your institution and we'll send along the appropriate application materials.

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It is my intent to provide as much assistance to your university as is possible over the next three years. Of course, this entire enterprise offers new challenges that none of us have faced before, so I hope we can keep the lines of communication open and the ideas flowing. I will appreciate your feedback and frankness as we explore this new territory.

While I plan to keep you informed of progress throughout the project, I would like for you to formally identify the person(s) I should consider my main contact person for day-to-day interactions under this arrangement. (I'll need a phone number, fax, and email, thanks!)

Best wishes!

Cliff

### **Where do we go from here?**

Given our goal of improving digital communication in developing countries, and our current focus on Africa WiderNet is willing to work with all African institutions of higher Learning committed to the improvement of digital communication in their institutions. However, as stated in our description at [www.widernet.org/whoware](http://www.widernet.org/whoware), WiderNet is a non-profit project, thus we are not capable of funding the development of these Information Technology Systems. Nonetheless, we are willing to work with interested institutions to secure funding by working with them to develop proposals and source for funds.

## **REPORT ON ICT USE IN GAMBIA COLLEGE**

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**INTRODUCTION:** - The Gambia College, one of the tertiary Institutions in the Gambia was established by an act of parliament. It is mandated to provide professional training for the middle level manpower by training Agricultural Extension Workers, teachers for the Primary and Secondary Schools, Nurses and Midwives and Environmental Health Officers. Four Schools have been setup to take charge of the responsibility of training students in these specific areas. The Schools are:

- School of Education
- School of Agriculture
- School of Nursing and Midwifery
- School of Public Health

The College is administered by the Principal and he is assisted by the Vice principal, Registrar, Deputy Registrar and Computer Specialist. Each school is administered by a Head, who is directly responsible for the professional well being of the school. There are staffs who lecture the courses of each school and they comprise the academic staff of the College.

The administrative staff of the College supervises the entire activity of the College across the four schools. It directs the implementation process of the policies from Government i.e. Department of State for Education. Under the administrative staff is a Support Staff whose role is to assist the administration in the process of supervising and implementing government policies.

It is very important to know that the College is an autonomous body whose general activities are governed by an executive body known as “The Gambia College Council, which is headed by a Chairman.

Though autonomous, it is subvented by Government through the Department of State for Education. There are also other development partners who assist the College in funding some of its activities. Some of these partners are:

- World Bank
- African Development Bank
- UNESCO
- other International Donor Agencies.

The College is a Public Institution and therefore all the students are on government Scholarship except in the case of Non-Gambian students.

## **‘ICT’ IN GAMBIA COLLEGE**

### Introduction

The emergence and convergence of information and communication technologies (ICT) remain at the centre of global social and economic transformations. The ICT sector is a gamut of industries and services activities – Internet service provision, telecommunications equipment and services, information technology (IT) equipment and services, media and broadcasting, libraries and documentation centres, commercial information providers, network-based information services and other related information and communication activities. These technological components, which used to be accounted as separate activities have converged to characterise all aspects of ICTs. The emergence of the Information Society has brought about a new dimension to the subject in which information itself is the strategic resource, a commodity and the foundation of every human activity.

"Information and communication technologies can no longer be seen as a luxury for the elite but as an absolute necessity for the masses. The global movement to an information age and the worldwide technological innovations of recent years, along with other structural and economic developments, has led to rapidly falling costs for information and communication technologies.

Information Communication Technology is one of the fastest tools of development, which can be used in almost every aspect of human civilization and is one of the facilities inevitable in as much as Education is concerned. It can very efficiently facilitate the teaching and learning process.

ICT, which comprises of Internal Computer Networks (Intranet), International Networks (Internet) Computers for word processing can undoubtedly contribute to the development of any organization/institution by providing a bridge to the global Village for the easy access of Information. It is already understood and agreed upon that a vast lot of educational resources could be found within computer networks and can only be accessed through the establishment of ICT systems thus bringing about the "Information Society". In this present technological digital advanced world, there is the belief that there should exist an ICT facility in every institution of higher learning. In the Gambia College this belief is yet to become a reality.

### Technological Resources (Infrastructure)

Effective information and communication systems require reliable, low-cost and widespread technological resources such as computers, software and all the components of the telecommunications infrastructure for processing data and information. ICT has not been fully developed in the Gambia College per say, however computers still continue to be used in other areas of their application. Staff and students are at the moment using 15 computers installed in the computer lab of the Brikama Campus for the purpose of word processing. It is important to know that all these are stand alone machines, as they are not on a Local Area Network and of course not connected to the Internet. 10 more are yet to be installed, as there is lack of space until such a time that the new computer laboratory under construction is completed. The World Bank funded the procurement of these computers and the construction of the new computer lab under the third education sector project. The ADB purchased 12 computers for the School of Nursing and Midwifery located in our Banjul Campus. However it may be interesting to note that a

network doesn't exist at that campus either thus resulting in the lack of access to valuable educational information through intranet or the Internet. The School of Public Health, of recent, benefited from a donation of 6 computers, an eight-point hub and RJ45 cables from the WiderNet project in the University of Iowa. This makes a total of 8 computers already established on a small Local Area Network (LAN), which provides an intranet facility with unlimited access to information on the server of about 60GBs of hard disk space.

Consultation are however so deep with the authorities concerned at the Department of state for Education, World Bank, ADB and the Gambia College to look into the possibility of the establishment of an ICT system for Gambia College.

#### Human Resources

Whereas technological infrastructure has traditionally been regarded as the most critical component of ICT, leaders and experts worldwide increasingly recognise human resource capacity development as potentially the most crucial constraint in the effective deployment of ICT to build sustainable information societies. Hence, preparing Gambia College for the information age primarily necessitates appropriate investment in its human resources. Training, education and promotion will be the cornerstones of the rejuvenation of the Gambia College's new era society (ICT).

Development of human resources also requires having a new profile of management/labour forces; the ability to adapt, adopt and exploit new technologies and to manage the change where skills and knowledge learned can be applied. Capacity building programs should be developed tailored to the need of ICT needs of Gambia College staff and students. The training of IT Specialists and decision makers, students and staff are good areas of concentration so as to enable realisation of the benefit from the Information Society.

### **THE NEED FOR ICT IN GAMBIA COLLEGE**

The need for the establishment of a Computer Network in the Gambia College cannot not be over emphasized as this would provide for the "ICT" needs to both Staff and Students involved in the teaching and learning process.

Students from the four schools would find it useful and interesting to use ICT in Education. In this way they can be able to undertake research through the Internet on all their areas of specialization, get connected to other higher learning Educational Institution all over the world in exchange of information relating to their individual field of study. There are a lot of modern Health related issues which could be used by Students and Staff of the Schools of Nursing and Midwifery and Public Health, Modern Agricultural techniques for use by the school of Agriculture and Modern trends in Educational pedagogy for Students of the School of Education.

The Distance Learning, a programme of the School of Education, which is meant to give student teachers more practical experience and at the same time meet the demand of teachers in schools can also benefit immensely from the use of ICT. In fact the success of this programme could only be achieved if an efficient and viable ICT System is put in place at the Gambia College. Learners can communicate directly or with minimal delays with their instructors. This will help them to obtain assistance from lecturers online at college, download information and assignment packages from the college and subsequently submit them online. ICT will prove to be more efficient and reliable in the success of the Distance Education Programme. Gambia College

should be ready for well-defined endeavors in distance learning using electronic networking and computer technology.

The following table shows some of the key areas of application of ICT which students can use and subsequently as civil servants in their various areas of specialization, which can be utilized in the national development plans.

Sector Possible area of application

Agriculture Improving food security through access to timely information for determining optimal harvesting times, locating sources of surplus, distribution channels and storage facilities; Provision of equitable access to new techniques for improving agricultural production; Improving communication and information flow for better research and extension service linkages; Increased co-ordination of donors and information flow among donors working in the food sector.

Education Providing equitable remote access to resources in support of both distance education and the strengthening of local educational capacity;

Connecting schools, universities and research centres to national and international distance education facilities, national and international databases, libraries, research laboratories and computing facilities;

Reducing communications and administrative costs by building communications networks linking all educational establishments;

Promoting and supporting collaboration among teachers and researchers;

Extending the reach of educational facilities in informal learning. Especially to community level

Environment Monitoring areas threatened by environmental degradation and natural disasters using ICT tools and Geo information systems;

Developing databases to improve knowledge on the availability of natural resources;

Improving the management and monitoring of the implementation of environment-related projects;

Using low-cost terrestrial and satellite communication systems in emergency situations where there is not access to adequate telecommunications.

Health Enhancement of health administration and management through medical information systems;

Establishment of general information "health profiles"(i.e. for AIDS, for infectious diseases, etc. ), specific patient "Information profiles" and decision support systems on regional, national, provincial and district levels;

Linking health centres, delivery services and medical transport to enhance patient access to these facilities and provide more efficient services to the patient;

Improving access to skilled diagnosis through tele-medicine;

## ICT AND ADMINISTRATION

The world over, administrations are in dire need to be strengthened. ICT can provide valuable support in this area. The administration of the College can also benefit immensely from the services ICTs provide. ICT can be applied in:

. Personnel/Human Resources Management

• Student administration

- Finances
- Assets and maintenance
- Communication (e.g.e-mail)
- Office automation
- Supporting management decisions (MIS)

For each of these it is important to assess their availability and the quality and extent of use by staff. The ICT infrastructure is the basis on which all other ICT applications run. As such it should receive the utmost attention.

Staff would find ICT to be more reliable, flexible fast and more accurate in terms of data/information storage, retrieval collection and dissemination. In so doing, less crisis would be involved.

The Inservice Training (INSET) Wing of the School of Education may take a better and more impressive shape in the fulfillment of its mandate in training teachers already within the system provided that a viable ICT system is put in place.

The Curriculum Research and Development Unit (CREDU) can also undoubtedly benefit a lot from the services of ICT in Gambia College in the process of research for curriculum instructional materials and development for the Gambia's education sector.

### **CONSTRAINTS OF ICT IN GAMBIA COLLEGE.**

Realising the use of ICT and its need in the Gambia College, the following could briefly summarise the constraints:

- Lack of adequate awareness about ICT by the decision makers of the College.
- Lack of the basic equipment for the establishment of ICT i.e. Network equipment etc.
- No budget allocation for the Computer Department of the Gambia College for the procurement of some “ICT” tools.
- Lack of sufficient trained computer personnel to take care of the “ICT” problems and needs.

### **CONCLUSION**

With cautious study of the above-mentioned areas of this report one may perhaps empathize that the need for the setting up of an excellent “ICT” System is inevitable. The challenge to Gambia College Council and Administration is the re-examination of the needs of the policies in the Information era, so that they could exploit to the fullest extent the benefits to be accrued from the convergence of information and communication technologies and the advent of Information Societies. This entails a challenge to exercise clear vision and leadership of how ICT could serve College interests, and to promote the necessary organisational change. Putting in place ICT plans and strategies, are a 'key building block' required to meet those challenges. The core aim of most of these ICT programmes is to create an enabling environment in which students and staff in educational set-ups in developing countries can effectively exploit knowledge for educational development.

However there are difficulties involved in the establishment of ICT System and the Gambia College administration, as a whole, is not in a position to provide ICT systems as no provision has been made in the College's budget by government. It is very interesting to know that both the Staff and Students are willing to make the best use of ICT in Education once it is put in place as the interest has been manifested during the students computer literacy programme. ICT in general could go a long way in the success of any Educational Institution, the Gambia College not an exceptional.

## RECOMMENDATION

- An ICT infrastructure be established such as Local Area Networks, Campus-wide backbone connecting LANs and Multi-campus backbone connecting LANs to cater for both Banjul and Brikama Campuses.
- Training be provided for the ICT specialists in the areas of modern technologies in computing (ICT) and decision makers in the area of the importance and benefits of ICT in Educational Institutions.
- Budget allocation be put in place for use in procurement of “IT” tools such as hardware and software acquisition and maintenance cost of ICT Systems.
  
- Awareness-raising: The undertaking of surveys and need analysis, the identification of priorities and opportunities for ICT in the Gambia College, and the assessment of current strategic information systems project in the College.
- Formulation of strategic goals and targets: (future plans) this includes defining strategic information systems to be developed, required policy and institutional reforms, and knowledge and skills required in the workforce to implement the ICT systems.