QUALITY MATTERS

IN THIS ISSUE

QUOTE OF THIS ISSUE
Information Communication Technology (ICT) resources, whether hardware or software, can support the creation and development of ideas; if they reflect an approach to open-ended exploration in design and use.
(Loveless, 2002)

This newsletter is published every three months by the Center for EducationalImprovement and Quality Assurance (CEIQA) of St. Mary's University (SMU). The objective of the newsletter is to inform the SMU community as well as the business and industry, government and non-governmental stakeholders and others who might be interested to know about the activities and accomplishments of the institution in fostering quality education and research in the Ethiopian Higher Education setting.

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FROM THE EDITORIAL DESK

Dear Readers,

This edition of Quality Matters is focusing on the **Role of ICT in Education**. Many educational institutions are attempting to use new technologies to improve the teaching- learning process. ICTs provide both students and teachers with more opportunities in adapting learning and teaching to individual needs and society. The uses of ICT is making significant differences in the learning of students and teaching approaches.

As usual, in this edition too, we have included perspective, interview, and tips corner in light of the selected theme to examine the subject from different angles. News and virtual links are also parts of the contents.

In the perspective part, educational technology in education has been discussed where by the definitions of different authorities are presented and the Ethiopian situation is explored. In the interview section, Quality Matters talked to Ato Getahun Semeon, Director of ICT Development and Support Unit, SMU, to elaborate the concept of ICT in the context of higher education institutions. The TIPs corner incorporated enhancing the quality and accessibility of higher education through the use of ICT.

In the case of higher education institutions, of course, the prime focus is to intensify the use of ICT to improve student learning. In line with this, the five year strategic plan of SMU, **Governance, MIS and Resources** is one of the priorities for the years 2013/14-2017/18. The major goal is to enhance and improve the existing ICT system to support the academic wing and enhance institutional advancement in all areas of operation. Thus, SMU recognizes ICT as an essential tool for quality improvement.

Enjoy reading it

PERSPECTIVE

**Melaku Girma (PhD),
CEIQA Director, SMU**

Educational Technology in Education: A Personal Reflection on Ethiopian Situation

The definitions given by different educators make it clear that Educational Technology is:

- May be defined as the application of technology to education in order to further the cause of the learner;

- Just a science and technological help in providing efficiency to the task of teaching and learning;

- To provide technical guidance and solution to the problem of education;

- Understand the teaching situation, teaching strategies and teaching material, and learner's difficulties to make student to learn effectively.

In brief, educational technology is both technology in education and technology of education to solve certain problems in education. The major objective of educational technology is to study the need of the community, the learner and the teacher so that the content of knowledge in the form of course material may be framed in a systematic order. The process of arranging the course material in an order and the rational utilization of gadgets like, radio, TV, video, computers for effective learning outcomes . Besides, the objective of educational technology in the field of non-formal and distance/open learning is to maximize the reach of information for the welfare, development of mankind and the enrichment of cultural heritage.

From my exploration into the literature, I feel that educational technology is most simply and comfortably defined as an array of tools that might prove helpful in advancing student learning and may be measured in how and why individuals behave. Educational Technology relies on a broad definition of the word "technology". Technology can refer to material objects of use to humanity, such as machines or hardware, but it can also encompass broader themes, including systems, methods of organization, and techniques. Some modern tools include but are not limited to overhead projectors, laptop computers, and calculators. Newer tools such as "smart phones" and games are beginning to draw serious attention for their learning potential. Educational technology is intended to improve education over what is would be without technology. Some of the claimed benefits are used below.

- Easy-to access course materials.

- Student motivation.

- Wide participation.

- Improved student writing.

- Subjects made easier to learn.

- Differentiated instruction.

The traditional mode of education in which I passed through, is burdensome and boring for the learners. Use of Educational Technology can make it interesting and learner-centered. The style of education which we want to institute should of course is going to be different than the house of education in which we are living till this time. It is definitely clear that the current system of education in Ethiopia does not fulfill the intentions at present and certainly not going to cater for the needs in the coming decades.

Politicians, policy makers & educators nowadays are fully convinced that in education "learning" is more important than "teaching". Learning is concerned with pupils where as teaching is concerned with teachers. In the olden days & still today, a teacher was and is the only source of knowledge in Ethiopian schools. The students learn what the teacher teaches. Students in many Ethiopian classroom situations, including higher education, passively receive information. The emphasis is on acquisition of knowledge outside the context in which it will be used. The teacher's role is to be the primary information giver and primary evaluator. Power and control is in the teacher. But as Galileo puts it "you can teach a person nothing, you can only help them discover it within themselves." Actually students construct knowledge through gathering, synthesizing information and integrating it with the general skills of inquiry, communication, problem solving, critical thinking, and so on. As a result students are actively involved. The emphasis is on using and communicating knowledge effectively to address enduring and emerging issues and problems in real-life contexts. The teachers' role is to facilitate and to coach. The balance of power is democratic, less hierarchical and

egalitarian. Thus, in order to meet the demands of the 21st century educators in the country need to navigate the difficult space between letting go of old patterns and grabbing on to new ones.

With the coming of textbooks & other instructional aides, the teacher's personal knowledge though important, ceased to be the only or even the paramount source of learning. Hence, other instructional materials and people now assist in the learning process. Especially the information explosion coupled with population growth is bringing about changes in the developing countries. This situation has presented serious problems for education more than ever before: more things to be learnt and more individuals to learn which cannot be solved by conventional means. As a solution, educational technology consisting of various media of mass communication, student-oriented process and modern testing & evaluation techniques are required. In developing countries like Ethiopia, educational technology has to be wide spread & effectively used by educators, if they are to keep pace with each other & catch up with developed countries. Both qualitative and quantitative improvements of education can be secured with the help of educational technology. Although in a narrow sense educational technology means little more than the use of sophisticated hardware in teaching, including overhead projectors, tape-recorders, televised films, cassettes, Video-dices, etc, in a broader sense it may be interpreted to mean the use of any new technique or methods of teaching. Technology of education would include the entire process of developing the goal, the continuous renewal of curriculum & syllabus, the use of new methods & techniques and materials, the evaluation system and the resetting of goals in view of the changing circumstances. It is also often identified with various device and means or recording, storage, manipulation, retrieval, transmission & display of data and information with high efficiency & speed.

As hinted by different authorities Online Education, which is a recent phenomena & privilege of few in Ethiopia, has been heralded as the next democratizing force in education, particularly in higher education. By opening access to populations which have not had access either because of geographical location, job status, or physical handicap, the rhetoric of online education suggest that this new technology will democratize education, breaking down the elitist walls of the ivory tower. As different litera-

ture indicated, Ethiopia (pop.90 millions) is currently under taking major public higher education expansion. To this end, at present there are 36 public universities and some under construction. Although Ethiopia's higher education gross enrollment ratio has risen significantly, of course with the emergence and expansion of private higher education institutions, it is considered to be the lowest worldwide, ranking ahead of only a few low-income countries in Africa.

Computer- based learning in its various generations has acted to open up the world of knowledge to everyone and its most powerful variant, online learning, has become a catalyst that has enabled huge changes in what is learned and who is able to learn it. The public and private sectors have a duty to invest in improving access to education and knowledge for all citizens and, as a result, education systems are evolving to cope up with or exploit massive changes in a number of key areas including:

- Access to more knowledge than ever before;
- New learning skills for twenty-first century;
- The maximizing of learning opportunities through e-learning;
- The emergence of a society of lifelong learners;
- A recognition of the interests and needs of the "internet generation";
- The implications of globalization for cultural diversity;
- Greater inclusivity in education through e-learning; and,
- The removal of time and location limitation;

There are some encouraging signs in implementing technology in few Ethiopian higher education institutions. The institutions have made attempts to increase ICT use of instructors. Building smart classrooms, providing instructors with laptops is just some of these attempts carried out by the HEIs. However, general observations on this theme show that many institutions are failing to integrate technology into existing context. Instructors do not integrate technology consistently both as a teaching and learning tool. There are several obstacles clearly observed, just a few of the reasons that technology is often not used properly and extensively are: lack of interest and proper training, limited access to sufficient quantities of technologies, the extra time required for implementation of technology and insufficient budget to run the technology.

There are various types of technologies currently used in traditional classrooms. Among these are: Computer in the classroom; Class website; Wireless classroom microphones; Mobile devices; Interactive white boards; Online medic and Digital games.

Regardless of the quantity of technology placed in classrooms, the key to how those tools are used is the instructor. The majority of instructors believe technology usage is important for teaching, however, lack confidence and understanding during integration process. Furthermore, Instructors' possess the skills and competences essential for designing, delivering and evaluation of instruction, since successful integration of technology requires not only the knowledge of the technology and its potential use but also the skill to plan and execute a good lesson. When technology usage is aligned with the instructional goal, where technology is integral to teaching, successful integration might be realized. Otherwise the use of technology alone is not a sufficient indicator of integration. Therefore, educators need to place instructional technology education within the context of instructors work in the classroom.

Finally, it is the wish of the writer that modern technology should become a major resource for the delivery of educational services in Ethiopian schools over the coming decade, since it can be an effective delivery mechanism for most existing forms of education. Moreover, it provides capabilities for responding to new demands that traditional classroom situation cannot meet adequately. Furthermore, the cost of information products and services for educational applications will continue to drop. Surely the Ethiopian class rooms in the 21st century have to be modern from every angle.

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INTERVIEW

This column features interviews of people including government officials, policy makers, top management of universities or colleges, experts, as well as students, on quality related issues. In this edition of the newsletter, Quality Matters interviewed Ato Getahun Semeon who is the Director of ICT Development and Support Unit at St. Mary's University. Ato Getahun has B.A Degree in Economics and M.Sc. in Information Science from Addis Ababa University. Currently, he is at the final year of IT PhD program, Information Systems Track at Addis Ababa University. He served at different leadership positions for the past 22 years as an Assistant Director for Addis Ababa University Library System, Chief Registrar at St. Mary's University and he has also experience in teaching at both post-graduate and undergraduate level. Besides, he has published seven papers, five of which are published in peer reviewed international conference proceedings – i.e., American Conference on Information Systems (AMCIS) and IEEE AFRICON. He also developed full-fledged self- instructional course materials for distance learners at St. Mary's University for 12 courses.

Ato Getahun Semeon, Director of ICT Development and Support Unit, SMU

Quality Matters: What is ICT in terms of education?

Ato Getahun: ICT from the education perspective is exploitation of electronic tools to facilitate, support, enhance and extend the reach of teaching and learning. The electronic tools include computers, mobile phones, tablets, internet, telecommunication infrastructure, interactive whiteboards, data projectors, video conferencing tools, radio, TV, CDs, DVDs, sensors, instant messaging tools, etc.

Quality Matters: Can you briefly tell us the importance of ICT for access and quality enhancement in higher education?

Ato Getahun: ICT has great potential for providing equitable access to both formal and non-formal education. It provides extended and flexible access to education for areas which are difficult to reach. It provides access to education for the underserved segments of the population like ethnic minorities, women, persons with disabilities, and the elderly, as well as all others who for reasons of cost or because of time constraints are unable to enroll on campus. It allows learners to access educational content anytime from anywhere without any spatial or temporal barrier. Instruction can be received simultaneously by multiple geographically dispersed learners (i.e., synchronous learning) using a technologies like teleconferencing. Teachers and students can go beyond the walls of traditional libraries and access wealth of remotely available learning resources using Internet & WWW. This is particularly significant for many schools in developing countries that have limited and outdated library resources. ICTs also facilitate access to resource persons-mentors, experts, researchers, professionals, business leaders, and peers all over the world.

There are different ways in which ICT can play a role in enhancing quality of education. One is through increasing learner motivation and engagement. Presentations of educational content using multimedia features that combine text, sound and colorful moving images as well as dramatization of the content effectively engage students in the learning process. Students become more involved in the lessons being delivered. Secondly, ICT enhances quality by providing ease of access to e-books, research outputs, best practices, best course materials and best minded experts. Thirdly, ICT can facilitate higher order thinking skills and creativity through drill and practice – learning by doing. Computer simulations and virtual laboratories provide opportunities for students to develop and apply skills and knowledge in more realistic contexts and provide feedback in real time. Therefore, it enhances self-learning and problem solving skills. Fourthly, ICT enhance quality by providing curricular support in difficult subject areas.

Quality Matters: Can you tell us the integration of ICT and pedagogical approach in the teaching learning process?

Ato Getahun: The use of ICT transformed the traditional pedagogy in many ways. The first is through changing the conventional method of content delivery from lecture and presentation based learning into contemporary settings of curricula that promotes competency and performance capability. ICT based learning has more potential to accelerate, enrich, and deepen skills. ICT transformed the conventional method of transmission of knowledge by teachers into a notion of learning and process of knowledge construction by students. This is realized since the technology supports resource-based and student-centered learning settings. The role of the teacher changes towards supporting, advising, and coaching students rather than merely transmitting knowledge. The technology empowers students with tools for experimentation, calculation and analysis of information and constructing new body of information. Students, therefore, learn as they do. That shifts the learning system from memorization based or rote learning into increased learner engagement. The ICT-enhanced learning is more of learner driven rather than teacher driven. The traditional pedagogy focuses more on individualistic learning while the contemporary ICT-based learning focuses on collaborative team based learning with the principles of supporting each other. ICT-supported learning encourages interaction and cooperation among students, teachers, and experts regardless of where they are. ICT-based learning emphasizes the integration of theory and practice which is not the case in the traditional pedagogy.

Quality Matters: Please, tell us in brief the international experience of using ICT to improve the learning environment of higher education.

Ato Getahun: The new global trends in the application of ICT in education which has resulted from tremendous advancement of the technology include:

Expansion of mobile learning as a result of the advances in ubiquitous handheld technologies together with wireless and mobile phone networks as well as enhanced capabilities for rich social interactions and internet connectivity is one of the experiences of using ICT to improve the learning environment of higher education. This brought great impact on learning by providing rich, collaborative and conversational experience to both teachers and students. Others are: *Ubiquitous learning*, provide learning opportunities to students "anytime, anywhere"; *Gamification of education* which is introduction of games with a focus on active participation that effectively attract the interest

and attention of learners; *One-to-One computing* – providing information appliances to every learner and creating learning environments that assume universal access to the technology. *Cloud computing* – supporting the education system by availing cheaper computing resources without a need to have local servers or devices to handle applications. *Personalized learning* – using the technology to better understand a student's knowledge base from prior learning and tailor teaching to address learning gaps and learning styles of the student. *Redefinition of learning spaces* – creating learning environment that fosters collaborative, cross-disciplinary, students centered learning also, an international experience of using ICT.

Transformation in the role of the teacher in the classroom is from that of the font of knowledge to an instructional manager helping to guide students through individualized learning pathways. As ICT is incorporated in education, the trend of a classroom and textbook based educational system is becoming more and more outdated.

Finally, *Empowering teachers* to identify and create learning resources that they find most effective in the classroom which is tailored and exactly suits the style and pace of the course. This is mainly because the technology significantly facilitated collection, management, sorting, and retrieving of data.

Quality Matters: Can you tell us the ICT development and practice of St. Mary's University (SMU)?

Ato Getahun: By recognizing the strategic importance of information technology in the teaching, learning, research and administrative roles, the University has been making a lot of investment on the development of different software, acquiring hardware, upgrading bandwidth capacity for the internet connection, etc. Some of the locally developed software include Integrated Registrar Systems for regular undergraduate and postgraduate programs, for International Programs and College of Open and Distance Learning; Automated Exam Correction System which is integrated with registrar system of College of Open and Distance Learning (CODL), Online Student Information Systems for regular undergraduate and post-graduate programs; Schedule System for Program Office; Finance Systems; Human Resource Management System; SMS based information provision system (partially implemented and still under development); KOHA Library Automation System and Moodle Learning Management System.

As it is clear from the stated developments, the existing emphasis of the University has been more on the application of ICT to enhance the services provided to students and strengthening institutional administration and management. Moodle Learning Management System has been supporting regular undergraduate programs by providing access to e-books, lecture notes and other relevant learning materials. The ICT Development and Support Unit is currently working on the deployment of another open source learning management system which is called e-Front with enhanced features of creating access to learning resources and facilitation of interaction between instructors and students. Exploring the feasibility of implementing e-learning is also part of the action plan of the current academic year and team of experts from ICT Development and Support Unit and CODL are already assigned to conduct the feasibility study.

Quality Matters: How can ICT be used as a tool in higher education?

Ato Getahun: ICT plays a vital role in supporting powerful, efficient management and administration in the education sector. Some of the administrative areas in which ICT can play a significant role includes:

General Administration, Payroll and Financial Accounting, Administration of Student Data, Procurement, Inventory Management and Personnel Records Maintenance. Furthermore, ICT enhances the efficiency of all the administrative functions and decision making processes of higher education institutions by facilitating information transfer, storage, retrieval, and processing.

Quality Matters: What are the main benefits of using ICT in education to the various stakeholders?

Ato Getahun: Among the stakeholders, students, employers and governments are some of them. Benefits of using ICT in education for students: increasing access; flexibility of content and delivery; combination of work and education; learner-centered approach; and higher quality of education and new ways of interaction are some of them. For employers: high quality, cost effective professional development in the workplace; upgrading of employee skills, increasing productivity; development of a new learning culture; sharing of costs and of training time with the employees; and increasing portability of training. Regarding governments the following benefits are designated: increasing the capacity and cost effectiveness of education and training systems; reaching target

groups with limited access to conventional education and training; supporting and enhancing the quality and relevance of existing educational structures; ensuring the connection of educational institutions and curricula to the emerging networks and information resources, and promoting innovation and opportunities for lifelong learning.

Quality Matters: Is there any ICT policy and strategy in St. Mary's University? If so please tell us briefly?

Ato Getahun: There is an ICT policy, which has served the institution for a long time, but needs to be further enriched considering recent developments in the area. The content of the ICT policy mainly focused on acceptable use of ICT facilities, network password, network connection, e-mail usage and records management pertaining to E-Mail.

Regarding ICT strategy it is one of the priority areas in the five year strategic plan of the University. The strategic directions mainly emphasize on strengthening the ICT infrastructure, enhancement of ICT based services in support of the teaching, learning, research, outreach and administrative functions of the university as well as building human capacity.

Quality Matters: What is the impact of ICT on student performance in higher education?

Ato Getahun: Enhancement of the teaching-learning process through multimedia tools and making the instruction more attractive, lively and engaging makes students to capture and reconstruct the knowledge they gained easily. They can retain the lessons for longer span and develop the skills through practical applications, explorations and discoveries that positively contribute to their better achievements. It is widely recognized that learners are motivated, purposefully engaged and achieve better in the learning process when concepts and skills are underpinned with technology and sound pedagogy.

Quality Matters: What is the role of ICT in terms of assessment in higher education?

Ato Getahun: As a result of embedding ICT in education computer-assisted assessment is becoming a growing trend. Technology can be used for assessment purposes at various levels ranging from the management of the assessment results to a fully automated assessment system. Different software items are developed to handle multiple-choice and short-answer responses. The multimedia tools are also being deployed for assessment tasks. The use of ICT to record student responses, to capture material produced and to convey feedback

will grow as the use of virtual learning environments grows. Some of the major advantages of computer-based assessment over traditional assessment includes:

Allowing paperless test distribution and data collection, providing opportunity for more interactive question types, enhancing students' motivation, concentration, and performance, greater standardization of test administrations, obtaining machine-scored responses for writing and speaking, providing instant and targeted feedback, allowing instructors to assess how well students did on each question which can be used as an input for assessing the strengths and weaknesses in their coverage of the syllabus, automatically adapting the difficulty of the test items to learners' different performance levels and tailoring teaching to the individual level of a student, enabling more complicated statistical applications for test and scale development, allowing teachers to focus more on analysis and interpretation of assessment results, and improving quality of detailed presentations of reports.

St. Mary's University has also introduced automated exam processing and correction system. The system has the following functionalities: Designing answer sheets using the software, controlling the answer sheets and grades received from the departments, claiming missed answer sheets and grades, handling the process of automated and manual grade entry in to the database, handling the process of verification of scanned and electronically stored answer sheets, correcting answer sheets using a software, grading and calculating GPA and CGPA, and automatically exporting the grades to registrar system.

Quality Matters: What are the challenges that exist in seeking to implement ICT in higher education like St. Mary's University?

Ato Getahun: Lack of educational policy and planning pertaining to ICT, lack of adequate infrastructure (computers, connectivity, electricity, mobile networks, etc.), limited access to ICT tools, problem of financing, inadequate ICT related training and skill development for teachers, students, education administrators, technical staff and content developers, are some of the prominent challenges of implementing ICT in education. Given the current infrastructural, budgetary and resource constraints, a widespread investment in ICTs in education is probably not possible for higher education institutions in most developing countries including SMU.

TIPS CORNER
TIPS ON ICT IN EDUCATION

The following tips are extracted from scholarly articles on ICT in education focusing on opportunities and challenges

I. ICT IN HIGHER EDUCATION: OPPORTUNITIES AND CHALLENGES

Presence of ICT in education sector is increasing steadily. In spite of the fact that education is a social enterprise and teachers are the traditionally mainstay of teaching learning process, ICTs are very powerful tool for diffusing knowledge and information, a fundamental aspect of the education process. ICTs can play enormous role for improving access and equity in education sector in general and higher education sector in particular. E-learning is emerging as an important strategy to provide widespread and easy access to quality higher education. E-learning is a generic term referring to different uses and intensities of uses of ICTs, from wholly online education to campus-based education and through other forms of distance education supplemented with ICTs in some way. Another most important dimension of higher education sector influenced by ICT integration is improving quality of teaching-learning. Also, the changes taking place due to globalization and internationalization attach premium to knowledge and information. Therefore, the integration of ICTs would not only help in promoting personal growth but also in developing "knowledge societies". The call of the hour is the need to provide education for everyone, anywhere, and anytime. Life-long learning has become the driving force to sustain in the contemporary competitive environment. Therefore to strengthen and / or advance this knowledge-driven growth, new technologies, skills and capabilities are needed. ICTs have the potential to drive innovative and effective ways of teaching-learning and research. The inclusion of learning tools, easier use of multimedia or simulation tools, easy and almost instant access to data and information in a digital form which allows for computations and data processing generates possibilities which were otherwise not feasible. The possibility to diffuse these innovations and complement the learning content to improve quality in higher education through innovative pedagogic methods is high. The focus on ICTs to back quality research through utilization of rigorous research methodology and in-depth analysis is the call of the hour.

While using ICTs in education has some obvious benefits, ICTs also bring challenges. First is the high cost of acquiring, installing, operating, maintaining and replacing ICTs. While potentially of great importance, the integration of ICTs into teaching is still in its infancy. Introducing ICT systems for teaching in developing countries has a particularly high opportunity cost because installing them is usually more expensive in absolute terms than in industrialized countries whereas, in contrast, alternative investments (e.g. buildings) are relatively less costly. The four most common mistakes in introducing ICTs into teaching are i) installing learning technology without reviewing student needs and content availability; ii) imposing technological systems from the top down without involving faculty and students; iii) using inappropriate content from other regions of the world without customizing it appropriately; and iv) producing low quality content that has poor instructional design and is not adapted to the technology in use. Although, ICT offers a whole lot of benefits, there are some risks of using ICT in education which have to be mitigated proper mechanisms. They are:

- It may create a digital divide within class as students who are more familiar with ICT will reap more benefits and learn faster than those who are not as technology savvy.

- It may shift the attention from the primary goal of the learning process to developing ICT skills, which is the secondary goal.

- It can affect the bonding process between the teacher and the student as ICT becomes a communication tool rather than face-to-face conversation and thus the transactional distance is increased.

- Also since not all teachers are experts with ICT they may be lax in updating the course content online which can slow down the learning among students.

- The potential of plagiarism is high as student can copy information rather than learning and developing their own skills.

- There is a need for training all stakeholders in ICT.

- The cost of hardware and software can be very high.

II. THE ROLES OF ICT DEVELOPMENT IN OPEN AND DISTANCE EDUCATION: ACHEIVEMENTS, PROSPECTS ANDCHALLENGES

There are many critical issues surrounding e-learning in tertiary education that need to be addressed in order to fulfill e-learning objectives. These include: widening access to educational opportunities; enhancing the quality of learning; and reducing the cost of tertiary education. E-learning is, in all its forms, a relatively recent phenomenon in tertiary education that neither has not radically transformed teaching and learning practices nor significantly changed the access, costs, and quality of tertiary education. E-learning has grown at a rapid pace and has enhanced the overall learning and teaching experience in developed countries with less use demonstrated in developing countries, like Nigeria, due to high cost of power generation and access to ICT facilities. While e-learning has not lived up to its most ambitious promises to stem radical innovations in the peda gogic and organizational models of the tertiary education, it has quietly enhanced and improved the traditional learning processes. Most institutions, especially in developing countries like Nigeria, are still in the early phase of e-learning adoption, characterized by important enhancements of the learning process but no radical change in learning and teaching.

National Open University of Nigeria, using open and distance learning platform, was established basically to put an end to the regional tertiary education disparity in Nigeria and to offer quality education to every nook and corner of each state in the country at affordable rates. ICTs can be used through e-education to spread quality education and pedagogy. A balanced blend of technology and content offers a window of opportunity to the learners in the rural schools to bridge the digital divide. The e-learning system is a comprehensive and well thought-out initiative to open new vistas of learning and to provide a level playing field to schools' students in rural areas and isolated towns. This highlights the need to bridge the diverse proliferation of education across different socio-economic and geographic segments of the country.

The ICTs programs developed impact when and where students learn. In the past, educational institutions provided little choice for students in terms of the method and manner in which programs were delivered. Students typically were forced to accept what was delivered and institutions tended to be quite traditional in terms of the delivery of their programs. Learning through e-education is now creating competitive edges through the choices they are offering to the students. These choices extend from when students can choose to learn to how and where they learn.

Like other innovations, the innovations of e-learning, ICTs, and open resources may eventually live up to their more radical promises in the future and really lead to inventions in new ways of teaching, learning, and interacting within a knowledge community constituted of learners and teachers. However, in order to head towards these advanced innovations, a sustainable innovation and investment model needs to be developed. While the first challenge is technical, it will also require a broad willingness of tertiary education institutions to search for new combinations of input of faculty, facilities and technology and new ways of organizing their teaching activities. Similar to ICT investments in other sectors, the cost-effectiveness of e-learning investments will depend on whether new organizational and knowledge management practices are adopted. Experiments are already underway that make us aware of these challenges, but also that the opportunities and lasting promises of e-learning in tertiary education are eminent. There is a quite a bit which may be achieved by the successful implementation of e-learning modules via ICTs and e-learning campaigns across Nigeria. The level of literacy of the country itself is also likely to increase because e-learning is possible in all Nigerian languages, i.e. Igbo, Hausa, Yoruba and others, as well as English language components. The migration of students towards towns and cities for studying may be reversed. Availability of quality education at their door steps should result in increased opportunities to learning which should translate to increased earning power. This increased knowledge and awareness also increases overall growth of skilled manpower in the country.

III. FIVE KEY BARRIERS TO EDUCATIONAL TECHNOLOGY ADOPTION IN THE DEVELOPING WORLD

Educational technology will continue to be implemented incrementally in many parts of the developing world. More rapid uptake and success are unlikely to occur unless five items are addressed – power, Internet connectivity and bandwidth, quality teacher training, respect and better pay for teachers, and the sustainability of implementations.

1. Electrical Power

It is a fact: you need power to run technological devices and **until power is widely available, reliable, and affordable** for many in Africa and elsewhere, educational technology uptake will be slow. About 70% of those living in sub-Saharan Africa do not have easy access to electrical power. Even if people could not afford to purchase various electronic gadgets, access to power as noted above, would improve their lives because they would be able to read after dark and would be healthier as they would not be exposed to fumes caused by burning fossil fuels and plant matter.

2. Internet Connectivity

The potential to increase internet connectivity has risen substantially during the last four years due to the laying and planned installation of marine telecommunication cables. However, countries that are land-locked such as Chad and those that seem to show limited business demand for internet services, such as Eritrea and Sierra Leone, are likely to experience difficulty increasing internet access and bandwidth in the near future.

The challenge for all countries in the developing world is delivering the last "mile" of connectivity to homes for a reasonable cost. In addition, the bandwidth must be capable of carrying compressed videos so that citizens can have access to the wide variety of educational materials available in a video format and be able to exchange reasonable quality photographs and video clips. **Increased internet accessibility and increased bandwidth** are unlikely to occur without commitment by governments and the involvement of private enterprise such as the mobile phone operators. In time perhaps, broadband access to the internet will be considered a basic human right.

3. Training and Professional Development

Electrical power, Internet bandwidth, and electrical devices may all be present, but teachers need to know how to use them effectively. Teachers who have been brought up in a world with limited technology can find it difficult to use technology to engage and support learning. Whatever **training and professional development opportunities** that are provided to teachers must be long enough for them to grasp the concepts behind teaching with technology, to have hands-on experience using the technology, and to revise or develop one lesson that they can use when they return to their classroom or online environment.

4. Value Teachers

Teachers should be valued more, yet in many places they are not. Being paid a proper living wage relative to others in an area is part of it, but the other is respect for the profession. People cannot focus on teaching if they must hold several part-time jobs in order to support themselves and their families. Teachers should be looked upon as cornerstones of the society as upon them rests the responsibility of educating the next generation.

Thus, the best minds need to be attracted to teaching. People who genuinely care about helping others need to be attracted to teaching. Yet, some teachers I meet in emerging nations think of teaching as something to do rather than something they want to do. They think of filling heads with content rather that engaging students to solve problems and encouraging them to view the world from different perspectives.

5. Sustainability

The outcome of any educational technology project in the developing world must have at least two aspects. First, how does the technology or instructional method improve learning and second, **how will the technology or method be sustained** once initial funding has ended? I personally know a few educational professionals, who get excited by the latest trends – currently, the use of tablets or MOOCs.

When I ask them about sustainability, they raise their eyebrows and wonder why I am not focused on the potential merits of a new device or method. Why am I not exciting by the possibilities? I am. But experience has demonstrated over and over that glitzy technology is initially very appealing and accompanied by exaggerated

claims of being a "dragon slayer" or a solution to all that ails the educational system; but if it cannot be supported and maintained, it becomes a sophisticated paper weight.

Clayton R. Wright, International Education Consultant, Canada, Educational Technology Debate, April 2014.

NEWS
EXPERIENCE SHARING

A team from the Center for Educational Improvement and Quality Assurance (CEIQA), SMU, visited the Development Learning Center and Quality Assurance Office of the Ethiopian Civil Service University on March, 22, 2016 toward sharing experiences. The Development Learning Center has three sections; namely e-learning, video conference and woreda-net sections. The e-learning employs multimedia learning products, such as videos, audios, interactive simulations or games for a richer learning experience. Video conferencing through woreda net program can connect up to 120 participants concurrently at ten sites within Ethiopia or to any international site.

GESCI's Delegates Visited SMU

Delegates from the Global e-Schools and Communities Initiatives (GESCI) had talks with St. Mary's University leadership here at the Main Campus on April 14, 2016. The team led by Mr. Jerome Morrissey, Chief Executive Officer, GESCI, briefed the SMU leadership on GESCI's accomplishments since its establishment in 2003. On SMU's behalf, Wondwosen Tamrat (Assoc. Prof), the Founder cum President of SMU, welcomed the delegates and made statements on the University's establishment and the overall operations to date. He further stated SMU's interest to work with GESCI. Kebede Kassa (PhD), Director for Research and Knowledge Management at SMU, had earlier met the delegates in Nairobi where GESCI is headquartered. He was instrumental in bringing the team to the University. GESCI was "borne out of the United Nations ICT Task Force which identified education as an area in critical need of development, and one where ICT has the potential to make positive impacts." GESCI's operations are informed by SDGs and employs 'blended learning approach' in its course delivery. Funded by donor countries, GESCI has so far given certification leadership training in 16 African countries.

Virtual links

Arab Network for Quality Assurance in Higher Education (ANQAHE) www.anqahe.org

Asian Pacific Quality Network (http://www.apqn.org)

ASEAN Quality Assurance Network (AQAN) www.mqa.gov.my/oqan/

Association of African University (www.aau.org)

Association of Quality Assurance Agencies of the Islamic World (AQAAIW) www.mqa.gov.my/aqaalw/index01.cfm

Caribbean Area Network for Quality Assurance in Tertiary Education (CANQATE) www.canqate.org

Central and Eastern Europe Network of Quality Assurance in Higher Education (CEENQA) www.ceenetwork.hu

Central Asian Network for Quality Assurance and Accreditation (CANQA) www.canqa.net

Center for International Research on Higher Education (http://bc_org/avp/soe/cihe)

Ethiopian Ministry of Education (http://www.moe.gov.et)

Eurasian Quality Assurance Network (EAQAN) www.eaqan.org

European Association for Quality Assurance in Higher Education (http://www.enqa.eu)

European Quality Assurance Network for Informatics Education (EQANIE) www.eqanie.eu

Higher Education Relevance and Quality Agency (www.higher.edu.et)

Institute of International Education (www.iie.org)

International center of Excellence in Tourism and Hospitality Education (THE-ICE) www.the-ice.org

International Council for Open and Distance Learning (www.icde.org)

International Institute for Capacity Building in Africa (http://www.eric.ed.gov)

International Network for Higher Education in Africa (NHEA) (http://www.be.edu)

International Network for Quality Assurance Agency in Higher Education (INQAAHE) http://www.inqaahe.org

Program for Research on Private Higher Education (PROPHE) (www.allbany.edu/eaps/prophe)

Quality and Standards Authority of Ethiopia (http://www.qsae.org)

Quality Assurance Agency for Higher Education (UK) (http://www.qaa.ac.uk)

Talloires network (**www.talloiresnetwork.tufts.edu**

St.Mary's University

POST GRADUATE PROGRAMS (MASTERS)

- MBA in General Management
- MBA (with HRM concentration)
- MBA in Accounting & Finance
- Rural Development
- Agricultural Economics
- Project Management
- Marketing Management
- Development Economics
- Computer Science
- Quality and Productivity Management

Distance Undergraduate Programs

- Accounting
- Management
- Marketing Management
- Finance and Development Economics
- Rural Development
- Agricultural Extension
- Agribusiness Management
- Cooperatives(Accounting & Auditing)
- Cooperative(Business Management)
- Educational Planning and Management
- Economics
- Sociology
- Agricultural Economics
- Public Administration & Development Management

UNDER GRADUATE REGULAR PROGRAMS

- Accounting
- Management
- Marketing Management
- Tourism and Hospitality Management
- Computing Science
- Information Technology

POST Graduate Programs in Partnership with IGNOU

- MBA (Master of Business Administration)
- MSW(Master of Arts in Social Work)
- MEC (Master of Arts in Economics)
- MPA(Master of Arts in Public Administration)
- MARD(Master of Arts in Rural Development)
- MSO (Master of Arts in Sociology)
- MPS(Master of Arts in Political Science)
- MCOM(Master of Commerce)

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- Bachelor of Business Administration (BBA)

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