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Editorial

The Open University of Tanzania is celebrating its 20th anniversary this year. Being the first public Open University in Eastern Africa it has unveiled the best educational preference to many people in the region. The best learning process transcends the efficiency and ethics of a workforce. Through research and hard work, the university has been stirring social transformation evidently in the elevation of dependable approach in solving social problems consistently with the needs of the 21st century. Although the OUT doesn't brag for its learning output, its mission and vision attract many to share the reputation of belonging to such learning institution. The importance of this occasion inspires all university stakeholders to re-evaluate the contribution of the open and distance learning to the nation. The growth in delivering and expanding access to many students in Eastern Africa has been marked with increased knowledgeable workforce in the society.

Adult learning contributes in attainment of achievers of social reform and development. For 20 years, East African nations have absorbed graduates capable of transforming society dreams to reality. Learners' response in e-learning has proved that acquisition of knowledge and skills can be done in a non-tradition classroom setting. Deviating from conventional mode of delivery, learning becomes the source of interest and excitement to both students and scholars. The uniqueness of the Open University of Tanzania is realized in its attainable goals, and taking risks while embracing internal and external challenges. The opportunity to extend access and knowledge coincides with emphasis on andragogical learning methodologies. Mobilization of educational resources and guidance in the acquisition of new knowledge empower learners' confidence and sense of belonging to the institution. Inclusion of learners' background and experience has moderated the pace of learning whereby students are in control of what and when to take courses. An online learning method has encouraged students' inclination and motivation to engage in the 21st century technology. The OUT has adhered to students' quest for new knowledge through face to face sessions, virtual and physical libraries.

Open and Distance Learning (ODL) has liberated many individuals from stagnation to active participant through e-learning. Learners appreciate their recognition and inclusion of their experience in the learning process. ODL acts as the remedy of many shortfalls of traditional system of education. ODL is also mentioned by Mushi in her article to create free critical and relatively independent thinkers capable of interrogating, interpreting and innovating. East African governments have welcomed the OUT move to create challengers of actions, goals, social structures, traditions and thinking. Higher quality of learning and achievable goals override society status quo. Although liberation is refined by social transformation, the OUT is still challenging its staff and students to be more conversant with emerging technologies.

Human capital has been a pillar of OUT for realization of its goals. Outsourcing innovators and those proven to excel the norm, has made the institution firm to the

present. Mbwette and Ngirwa emphasized the importance of human resource managers to increase diversity of employees. Inclusion of individual's contributions enables the institution to achieve multiple goals. Differences offer higher chance of growth but is also mentioned by Mbwette and Ngirwa to elevate chances of creating specific challenges. The institution is current in its delivering superior knowledge through qualified individuals and its initiative in sponsoring its workforce in acquisition of new knowledge and skills. The stability of the institution to its core values is affirmed in its unitary vision of all stakeholders.

Dr. John Soka
The Editor

The Role of Information and Communication Technologies in Quality Assurance in Open and Distance Learning

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Abstract: *Open and Distance Learning (ODL) is a welcomed innovation and handy tool that could speedily help actualize Education For All. However, despite a long and generally successful track record, ODL is still required to prove that the quality of student learning is at least equivalent to face-to-face teaching so as to promote its value and recognition. With the potentialities provided by modern Information and Communication Technologies (ICTs), their incorporation into Quality Assurance (QA) system can help accomplish this. The paper focuses on issues of using ICT in QA in ODL and some major associated challenges. The role of ICT in QA is very well elaborated in different areas, but a number of related issues necessary to situate the indispensable role of ICT in QA in ODL are given a cursory mention. Some vital recommendations are made to overcome challenges identified including careful and adequate investment by government and private bodies in ICT.*

Introduction

Open and Distance Learning (ODL) is one of the most rapidly growing fields in education. It serves as a force contributing to social and economic development of both developed and developing countries. ODL is becoming accepted and indispensable part of the mainstream of educational systems, especially for developing countries (Ololube, Ubogu & Ossai, (n.d); UNESCO, 2002). ODL represent approaches that focus on opening access to education and training provision, freeing learners from the constraints of time and place, and offering wide range of purposes and flexible learning opportunities to individuals and groups of learners (UNESCO, 2002).

To protect students and other stakeholders from low-quality provision and disreputable educational providers, as well as to encourage the development of quality cross-border higher education that meets human, social, economic and cultural needs, Quality Assurance (QA) can be adopted as an effective method and tool to respond to the challenge of quality in ODL.

QA processes are an integral part of ODL operations by virtue of its foundations in the industrial era. As observed by Akeusola and Ofulue (2011), it is the industrial mass production approach to education that has attracted perceived misconceptions about the quality of education provision through ODL as being second to traditional forms of learning. Assuring the quality of education provision is a fundamental aspect of gaining and maintaining credibility for programmes, institutions and national systems of higher education worldwide (Kirkpatrick, 2005). For ODL to be as good as, even better than the learning provided by conventional/traditional system of education, its quality must be ensured to promote its value and recognition. There are different definitions of QA, however, Belawati and Zuhairi (2007) defined QA as "systematic management and

assessment procedures adopted by higher education institutions and systems in order to monitor performance against objectives, and to ensure achievement of quality outputs and quality improvements". Quality Assurance of the educational process covers the entire scope from admission through to assessment; curriculum design and content; learner support; and the outcomes in terms of its value and recognition (Akeusola & Ofulue, 2011). The primary purpose of QA is to ensure that students receive a high quality and relevant education and awarded credentials that are widely recognized by governments and employers.

With the potentialities provided by modern Information and Communication Technologies (ICTs), the role of ICT in QA in ODL cannot be overemphasized. Arasomwan (2011) noted that there is no universally accepted definition of ICT because the concepts, methods and applications involved in ICT are constantly evolving on an almost daily basis. It's difficult to keep up with the changes - they happen so fast. It is important to remember that ICT does not mean just the Internet or the computer. However, a good way to think about ICT is to consider all the uses of digital technology that already exist to help individuals, businesses and organizations use (store, retrieve, manipulate, transmits or receives information electronically in a digital form) information (Arasomwan, 2011); Ramanujam, n.d); these includes the whole range of communication technology starting from radio, telephone, etc to the latest satellite based telecommunications and the computer technology. Increasingly new modes of ODL, including new ICT application are seen as vital to new approaches to training provision on a large scale UNESCO (2008).

The role of ICT in QA is very well elaborated in different areas. However, in order to situate the indispensable role of ICT of our modern times in QA in ODL, the old and modern types of ICT and their associated characteristics, as well as the revolutionary impact of ICT in ODL are given a cursory mention. The paper made some vital recommendations that could help overcome the challenges stated in the paper.

OLD and Modern Types of ICTs Used in ODL

ICTs facilitated by electronic means the creation, storage, management and dissemination of information. Many of these technologies are available for ODL usage: *i)* radio – analogue, digital and high frequency two-way, *ii)* television – broadcast, cable, and satellite, *iii)* telephone – wire, cellular, satellite, *iv)* fax, *v)* audiovisual devices, *vi)* artificial satellite, *vii)* computers, *viii)* the Internet, *ix)* newspapers, *x)* World Wide Web, *xi)* Webcasting, *xii)* e-mail or linkserve, *xiii)* electronic bulletin board or newsgroup, *xiv)* online chatting, *xv)* Voice Over IP (VoIP), *xvi)* Podcasting, *xvii)* blogging, *xviii)* interactive computer networks, etc.

The old types of ICTs i.e. the newspaper as well as radio and television (though these have been modernized via the Internet) have the advantages of low cost, requiring little skill to operate and the potential to be highly relevant to the needs of the users in terms

of local information delivered in local languages. The major shortcoming of these old types of ICTs has to do with the often one-sided nature of the communication.

The modern (more advanced forms) part of ICT includes networked computers, satellite-sourced communication, wireless technology and the Internet. A feature of these technologies is their capacity to be networked and interlinked to form a 'massive infrastructure of interconnected telephone services, standardized computing hardware, the Internet, radio and television, which reach into every corner of the globe'. Four interconnected characteristics of the modern, advanced ICTs are worth noting (Baryamureeba, 2007):

- Capacity for interactivity: the new forms of ICTs offer effective two-way communication on a one-to-one or one-to-many basis.
- They are available 24 hours a day on real time, synchronous or asynchronous basis.
- ICT through its interconnected infrastructure now has a reach over geographic distances not possible even in the recent past.
- Feature of the modern ICT that is also highly significant is the continuing reduction in the relative costs of communicating (some are even free), although this differs by location.

ICT has greatly transformed ODL; thus is an indispensable tool in QA in educational institutions/Universities.

Revolutionary Impact of Modern ICTs in ODL

The emergence of new technologies has led to increased interest in distance education. E-mail, electronic bulletin boards, and interactive computer networks have replaced mail carriers in delivering curricular materials, textbooks, and examinations to distance learners. New transmission media capable of providing two-way, full-motion, real-time (live) interaction between a student and a teacher are increasingly replacing non-interactive, one-way systems (Encarta, 2009).

Roles of ICTs in QA in ODL

Assuring the quality of education provision is a fundamental aspect of gaining and maintaining credibility for programmes, institutions and national systems of higher education worldwide, (Kirkpatrick, 2005). In the National Open University of Nigeria, the use of ICT for most operations in the University has enhanced quality education. Application, registration, continuous assignment and examination are all done online. That means students of National Open University of Nigeria must have vast knowledge in ICT. With the advent of digitized ODL forms, millions of learners have been attracted to this innovative approach in education and training. Vital areas of QA considerations as noted by Kirkpatrick (2005) are curriculum and instructions, staff support, student support, and student outcomes, though different countries' QA systems appear to have different area of focus like teaching effectiveness, management processes, accrediting agencies, or research productivity.

QA Pre-requisites

Whether QA has been established in a new institution, or existing practices are being refreshed, there are a number of pre-requisites as stated by Kirkpatrick (2005). Explained in this subsection is how ICT could play a vital role in line with these pre-requisites.

- An institutional quality policy and plan. Committees can access the Internet for existing policies and plans of other outstanding (ODL) institutions to serve as a guide to draw theirs.
- A QA "champion" who will lead the QA effort and ensure it is embedded in the institutional culture and practice. Up-to-date resources, means of easy and timely communication with other experts, are readily available through ICTs for this individual to keep himself updated.
- Opportunities for all staff to contribute to the design of a QA system. E-mail, linkservs, newsgroup, videoconferencing, teleconferencing, SMS and online chat system provide these opportunities. Without doubt these means of communication will increase the sense of ownership and ensures that strategies are meaningful, realistic and more likely to be adopted.
- Mobile phones, World Wide Web, etc. can help create and maintain an effective communications strategy that ensures everyone knows their own and other's responsibilities, understands why a QA system is being implemented and what should occur. This can also allow stakeholders to identify aspects of QA that may have been missed or not working.
- Mechanisms that encourage good practice will maintain staff interest and involvement in improving quality. For example, exposure to examples of good practice from other sub-systems or work units through meetings (via any of the modern ICTs means) or online-newsletters can stimulate thinking about new quality practices, and encourage collaboration and integration.
- With modern ICTs a range of staff development strategies could be designed to improve quality, where possible linked to staff performance review. Reward structures can also encourage staff commitment to QA.

General Philosophy

With the advent of the Internet and World Wide Web, an institution's website could be designed such that the Policy and mission statements, philosophy and culture of the institution/organization, mottoes, attitudes of staff and levels of staff commitment are displayed strategically on each web page including the home page when visited. This can put staff in constant remembrance of the level of commitment expected of them.

Teaching/learning Effectiveness

- *Learning materials:* Scientists and scholars use the Internet to communicate with colleagues, perform research, distribute lecture notes and course materials to students. In fact, Webcasting of educational material has become one of the most important services available on the Internet. Common forms include live transmission or rebroadcasts of lectures, classroom work, seminars (sometimes

organized as "webinars" from different locations), as well as videos of conferences, press briefings, and other information presentations. The ability to archive webcasts makes educational material available to users on-demand and at convenient times (Encarta, 2009).

- *Transition Learning:* ICT enables transition learning, i.e. support in developing action plans, preparing curricula vitae, completing application forms, preparing for selection interviews, help in securing funding for further learning opportunities or becoming self employed (Baryamureeba, 2007).
- Blended learning. ICTs enable learning that blends e-Learning with instructor-led learning. The learners do pre-work online, learning the subject and facts. Then they come together with an instructor and do activities which may include reviewing the material seen online, role-plays, discussions, etc.
- *Teaching/tutoring:* Individual students can use their computers to contact other students or individuals who have information they need. Entire classes can participate in interactive video sessions with teachers from remote sites or with groups of students from other schools. An instructor can orchestrate the individual learning activities of students who collaborate with other learners, with the teacher, and with multimedia technology available locally or via the Internet; teachers use chat, SMS, etc to help students practice language skills and to provide mentoring to students. For instance history students may chat with elders who lived through the historical period that students are studying.

Support Services

- ***Student or learner support***
  - *Help desks/Enquiries.* ICTs have made enquiries by clients from far or near to be easy. The helpdesk deals with all incoming emails, telephone calls, voicemails, etc. received from staff, students and occasionally other sources. Once an issue has been resolved, the enquirer will receives information or instructions relevant to the issue.
  - *Registration (online services for students like student registration and fees payment*): In modern high institutions students pay their fees online and also register online, therefore minimizing registration costs as a result of reduced manpower on the side of the institution and students travelling a long distance. Therefore, deadlines observed that enhances efficiency of the operations.
  - *Assignment submission/return:* Using e-mail, students can submit their assignments as attached documents.
  - *Counselling/advisory:* Counsellors use interviews, counselling sessions, interest and aptitude assessment tests, and other methods to evaluate and advise students; also counsellors consult and collaborate with parents, teachers, school administrators, school psychologists, medical professionals, and social workers to develop and implement strategies to help students succeed. All these could be achieved with ease and precision use of ICT. In various respects, ICT has the potential to significantly

increase access to guidance services, freeing it from constraints of time and space. Counselling can also be done on a one-to-one basis via SMS, email, online chatting, etc between the counsellor and counselee.

- *Guidance on career and learning:* ICT is used extensively in the delivery of career information and guidance. ICTs are transforming career information and guidance services, just as they are transforming service delivery in other sectors such as insurance, tourism, banking, and health services (Baryamureeba, 2007).
- *Learner's progress can be monitored using computer system:* With computerized database system, a detailed/summary progress report on any learner could be made available at any time without any difficulties or mistakes for proper and timely follow-up.

- ***Staff support***

Train all ODL staff (teaching and not teaching); they should be oriented and re-oriented in paradigm changes in the ODL system. ICT Customer Services teams could be formed to provide staff with a central area where IT queries can be resolved in a reliable and efficient manner. They can offer help by phone, email, etc.

- ***Others***
  - *Record keeping (e.g. management of staff and student record*): Electronic data/ information have the advantage of allowing multiple accesses by users. Also when it comes to manipulating data/information, it is easier if it's electronic. Universities implementing and maintaining information through Student Academic Records Information Systems as opposed to manual records. Universities are keeping staff records in electronic databases/ information systems commonly known as Human Resource Information Systems.
  - *Electronic backup:* Different storage devices exist for this purpose, e.g. Flash drives, CDs etc.; this is very useful for the purpose of data recovery and future reference.
  - *Warehousing and stock control:* With computerized Inventory/stock Control, available and functional facilities and quality books/study materials can quickly be ascertained and orders placed.

Monitoring Operations

- *Monitoring quality of inputs*: With the help of ICT it is possible to have an analysis of the performance of the students relative to the scheme they used to get admitted, school they came from, A-level/mature/diploma performance, subject combination etc. This information can guide in reviewing admission requirements for the academic programmes and recommending remedial courses. We can also monitor the other inputs like computers, lab materials relative to the number of students in the given department. ICT can also help in monitoring the quality of lecturers; who is a good lecturer; A PhD holder, a master's holder or a Professor.

- *Physical and human resource and other resources audits*: ICT can help in the keeping of real time records on physical and human resource and library resources. For example at any one time it should be possible to know student numbers by, course by faculty, human resource by discipline, computers in each laboratory, library resources, lab equipment and materials from anywhere any time as long as you have the necessary user rights. It should also be possible to account for all academic staff and also know which units are understaffed etc. (Baryamureeba, 2007).
- ICTs can help track the progression and retention rates of students and number of graduates.
- *E-Examination/Assessment*: The pass rates as well as standards of performance of students in their course work and examinations could be tracked easily and efficiently if they are assessed online; the external examiners and internal examiners could examine the students' electronic records independent of time and space.

Management Processes

- *Staff (academic and non teaching) evaluation*. Information from external examiners, student feedback and probably internal Quality Assurance Committee reviews could fed into staff appraisal process for proper evaluation
- *Appointments and Promotions Processing*: ICT can help in making the appointment and promotion of staff transparent, faster and efficient. This will make it possible to always employ quality staff and encourage those promoted to render better/quality services
- *External examiners Reports*: The external examiners reports are very important reports. The analysis from these reports can be used in curriculum reviews, promotion of staff, termination of employment of staff, enhancement of teaching and assessment among others. Most Universities in Uganda use these reports when there are approving results in Senate and it ends there. Using ICT to process these reports into information can provide information that can be used in ensuring quality enhancement and also help in identifying good examples and poor examples in teaching and assessment which can be distributed to departments for purposes of improvement among others.

Quality Research Productivity

- The quality of graduate students' research work could be greatly enhanced if a portion of ODL institution's website is created where students post their work and different user rights are given to the supervisors, heads of related departments, deans etc. Then the online comments by the supervisors and the different versions of the student's work can be captured to monitor the progress of the student and quality of his work.
- E-supervision of graduate students through wikis, blogs, chartrooms, online telephony, email and discussion boards are very effective if well planned and prepared. According to Baryamureeba (2007) most African Universities lack

expertise in many fields and ICT provides a window of opportunity to enhance quality assurance in research and training via e-supervision and e-mentoring.

- The widespread use of computers and the advent of internet have made it easier for some students to plagiarize. Computer-assisted detection using software like CopyTracker, SeeSources, Plagium, etc. has made detecting plagiarism in a student's work (course works, reports and dissertations) easier and more accurate. The same can be used to detect the genuineness of research work by staff including book chapters, journal papers, and conference proceedings.

Feedbacks

- Qualitative feedback can be obtained through Student On-line Evaluation exercise, Staff On-line Evaluation exercise, Research On-line Evaluation exercise, External examiners and Accreditation online reports.
- Student feedback via tutorials with personal/subject tutors is possible with online chatting.
- Feedback from electronically archived statistical data on examination performances of students and examination supervisors can immensely contribute to QA review for further improvement.
- ODL institution-wide (through the different study centers) student questionnaire exercise can be carried out on-line or posted to students' e-mail boxes for appropriate response for evaluation by management.

Accreditation

Many of the accreditation exercises could be done online (e-accreditation). Accrediting agencies assess the educational quality of colleges and universities by determining whether they have effective academic programmes, qualified faculty members, adequate instructional and library facilities, and sufficient resources to provide satisfactory education. Information on all these could be uploaded to the institutions' websites for accreditors' assessments.

Data Analysis and Decision Making

Various computer software are available for data analysis; examples are SPSS, Microsoft Excel, etc. Also there are systems available for decision making; example is DSS; these software and systems enhance accuracy, reliability and timeliness in data analysis and decision making.

Challenges of ICT in QA in ODL

There are quite some challenges associated with ICT in QA in ODL because keeping abreast with the dynamic nature of ICTs is highly demanding. Identified below are some of these challenges:

- For ICTs to have any role to play in QA in ODL, ICTs must be 'maturely' integrated to ODL and issues on QA in integration of ICTs in ODL properly dealt with.

- The procurement, installations and maintenance of ICTs facilities coupled with constant supply of electric power for their usage may demand some huge amount of finance that could inconvenience many developing countries.
- Lack of internet connectivity is another challenge in developing countries; online learning material will be irrelevant to the learner if they are inaccessible even if they are of the highest quality.
- Because of the dynamic nature of ICTs due to continual technological advancement, ODL institutions staff would need constant training and re-training to keep them updated.
- In most cases, students involved in ODL are working adults who have little or no time for their studies and many do not seek for counselling on time management, thus compromise quality by not being serious in meeting quality expectations in ODL programmes.
- Many of the staff members (supervisors) of ODL institutions are not yet convinced that they can easily supervise their students virtually. Many of the students mostly in developing countries who are not computer literate or poor at the usage of ICTs are not in agreement with e-supervision. According to Lubega (2007) they think that e-supervision cannot work and should never be used.
- The increasing use of ICTs in education highlights the need for multi-disciplinary teams that bring together experts in both education and informatics to providing ICT solutions to educational challenges because these groups use different vocabularies and have different priorities.
- ODL is a rapidly expanding field where new developments are happening very quickly. A static tool for policy-making would become quickly outdated. At the same time, regional needs in this area vary widely owing to several factors such as variations in educational demand and differing degrees of access to ICTs Varoglu (n. d).

Additional Comments

This paper dwells much on technical aspects of ICT. The issue of ICT cannot be over emphasized but it is still a new innovation and various organizations that have embraced this new trend should endeavor to focus and elaborate on managerial aspect of ICT. The National Open University of Nigeria has upgraded students' portal profile to improve on the use of ICT for its operations. The managerial aspects has been improved upon more versatile consultants engaged to handle students portals.

Recommendations

In line with the challenges stated above, recommended below are some of the ways the challenges could be taken care of:

- Government and private bodies should careful and adequate investment in ICT integration in ODL by way of procurement and maintenance of the facilities as well as sponsoring researches and frequent ICT training of staff.

- The use of solar cells should be adopted so as to introduce telephones and Internet connectivity in areas still without electricity.
- Quality is a product of planning, monitoring, control and coordination; hence it needs to be built into an ICT programme at the time of design and not at the end.
- Students as active participants in their educational experience should be encouraged to actively participate within institutional structures like student surveys because they are an integral part of institutions' strategies for continuous quality improvement, including the identification of good practices. Besides ICT-based student, surveys should be practiced by all ODL institutions timely and cost effectiveness.
- Because of their differences in vocabularies and priorities, there is need for dialogue to bridge the gap and to establish agreement between experts in both education and informatics on the multi-disciplinary approaches to providing ICT solutions to educational challenges which include quality issues.
- Active partners in the ODL field in their respective regions (study centers) should be involved in the implementation of projects.
- Countries should socialize and educate students, educators and the society in using ICT facilities for ODL enterprise.
- ODL institutions (mostly in developing countries) should to take up the initiative of encouraging their staff and students to use e-supervision for students project work and researches.
- Government should provide computers at subsidized rates to citizens, especially students, educators, and ODL staff.

Conclusion

Open and Distance Learning (ODL) is flexible and user friendly. To ensure its quality, ICTs should be integrated into the various aspects of ODL as well as its Quality Assurance (QA) system. In this paper, role of ICTs in QA in ODL was very well elaborated in different areas. When properly designed, developed and implemented ICT in QA in ODL will result to greater public confidence, more satisfied students, efficient processes and staff who are confident in their jobs. However, the associated challenges and recommended solutions should be given careful consideration and implementation. When all these are done, actualizing Education For All without lowered quality of student learning compared with traditional method of learning becomes a very easy task.

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