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The Open University of Tanzania  
Faculty of Education  
P. O. Box 23409  
Dar es Salaam  
Tanzania

Email: [jipe@out.ac.tz](mailto:jipe@out.ac.tz)  
Website: [www.out.ac.tz](http://www.out.ac.tz)

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All correspondence should be addressed to:

The Chief Editor –JIPE  
The Open University of Tanzania  
P.O. Box 23409  
Dar es Salaam, Tanzania

or

Email: [jjipe@out.ac.tz](mailto:jjipe@out.ac.tz)

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### *Editorial*

The Open University of Tanzania is celebrating its 20<sup>th</sup> 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 21<sup>st</sup> 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 21<sup>st</sup> 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

## **E-learning and Teacher Education in Tanzania**

**Honoratha M. K. Mushi**

*The Open University of Tanzania, Faculty of Education*

**Abstract:** *The paper, initially, explores the concept and the essence of e-learning within the global knowledge economy. It further explains why e-learning is the cornerstone for the development of the teacher education sector in Tanzania. In light of the latter the paper presents the efforts that have been made by the Tanzanian Government through the Ministry of Education and Vocational Training (MOEVT) in conjunction with the Open University of Tanzania (OUT) in order to expand the provision of teacher education by employing e-learning initiatives. E-learning is presented as having unprecedented potentials to upgrade most teachers who are already in the field and to train more teachers through pre-service e-learning programmes. Among the e-learning teacher education initiatives at the OUT are the inauguration of the Open, Distance and e-Learning (ODEL) Center, the SADC Center of Specialization in Teacher Education (CoS), and the initiative of OUT to transform its current mainstream print media ODL programmes into e-learning platforms using open source platforms, specifically the Moodle. OUT has already opened up 10 computer labs in 10 of its 30 regional centers while efforts are being made to install computer labs in the rest 20 regions. In order to gain the most advantage from e-learning the Tanzanian Government has worked with donor agents to increase Internet capabilities. Besides E-learning enabling teachers in the field to be upgraded and new ones to be trained, it also enables collaboration and sharing of innovative pedagogy and multidisciplinary transformative content to be developed.*

### **Introduction**

Perhaps it would be unwise to start talking about e-learning without making a few statements about education as a term that is frequently contested and sometimes used synonymous with learning. Education is an institutionalized system enabling teaching and learning to take place. At times, education is simply considered as a term representing a “critical sector whose performance directly affect and even determines the quality and magnitude of development” (African Union Second Decade of Education Plan of Action). Under this consideration, education is seen as the most important means that people have to mobilize resources, impart appropriate skills, knowledge and attitudes. Through education, innovations are realized to guide technological and scientific discoveries which are necessary in harnessing resources and creating wealth and prosperity. This perspective is contested by scholars who view institutionalized education as a system of indoctrination or a banking system (hooks, 1994; Freire, 1970) of disempowering education, safeguard the establishment and sustainability of classificatory social structures of domination and discrimination. The latter view is poised on the basis that institutionalized education has typically been characterized by strict standardized practices which are maintained by rules and regulations accompanied by reward or punitive operations. Generally, the banking

system of education is considered a form of mis-education since it serves the interests of dominant classes rather than the interests of the learners and their communities.

Contrary to the banking system of education is a system of education that builds free critical and relatively independent thinkers. Individuals and communities created from this system, are empowered to critically interrogate, interpret and innovate things and activities that “make problems vanish” (Wittgenstein, 1964 in Newman & Holzmann, 1997, p. 14) or solve problems. The type of education that empowers learners has the potential to mould individuals and communities who are capable to generate qualitative development for majority people and their environments. The latter view is finely tuned for a pedagogy directed towards learning whereby lifelong learning framework is central to development. Learners are given opportunities to share their experiences, criticize existing knowledge and innovate new ways of learning and living.

According to the second perspective actual learning is not mere listening to or reading scholastic representations and reproducing (or banking) the same representations in tests and examination papers. Learning is an intentional activity in view of addressing practical learner(s’) problems emanating from lived experiences and projected future. Learning; whether through traditional or e-learning settings should thus focus on enabling the learners to solve their practical problems and those of their communities. Meaningful learning should be situationally relevant, engaging, pleasurable and empowering (Vygotsky, 1987; hooks, 1994; Newman, 1998). The pleasure in learning is founded on the fact that it is tuned to learners’ social-cultural situations where inquiry and arguments enjoy measures of esteem and protection rather than punishment.

The foregoing consideration of learning moves steps ahead of perceptions of learning as only activities whereby a learner acquires motor, affective and cognitive skills; in the latter, meaningful and effective learning considers fundamental aspects such as who learns, what is learned, why it is learned, who wants such learning to take place, who benefits or loses through such learning, where such learning takes place, how such learning takes place and when such learning takes place – this list suggests that in learning the intentions, the people, the processes, the content etc. matter in differentiating a dis-empowerment and mis-education from an actual meaningful education that empowers learners.

### **E-learning**

E-learning is a contemporary term that has evolved with advances in the capabilities of e-technologies to deliver, store, retrieve, organize and update educational content and services as well as build educational networks of activity and people. The concept ‘e-learning’ has, commonly been used as an alternative to other terms such as online education, virtual education, Internet-based education, web-based education, and education via computer-mediated communication (Rekkedal & Qvist-Eriksen, 2003). However, Rekkedal and Qvist-Eriksen (2003) express their concern when e-learning is

equated with the terms listed in the foregoing. Their concern is based on consideration that learning is a change process in a person's perception/cognition, attitudes or physical skills, it is not "electronic" rather it is only "an element of education" involving a broad range of activities, services and structures. E-learning can therefore be more accurately defined if people, technologies and activities relating to such learning are factored into the meaning of the concept.

Although the following definitions of e-learning are not exhaustively descriptive they hold fundamental characteristics of e-learning. Rekkedal and Qvist-Eriksen's (Ibid) perceive "e-learning ... as [an] interactive learning in which the learning content is available online and provides automatic feedback to the student's learning activities". The second definition taken from Results of the e-learning initiative (2007) represents e-learning as "the use of new multimedia technologies and the Internet to improve the quality of learning by facilitating access to resources and services as well as remote exchanges and collaboration". One can consider e-learning as a form of distance education, as such, consider the typical characteristics of distance education components of e-learning: flexibility for teaching and learning to take place anywhere and anytime, the freedom for learners to pick preferred programmes and instructors from any institution across the world, quality education, extensive outreach possibilities, greater opportunity for reduction of costs where economies of scale are attained, etc.

From the definitions sited above we can realize a variety of e-learning characteristics that have kept on attracting individuals and institutions to embrace e-learning. Among the characteristics are the availability of educational content online, interaction and interactivity, automated or immediate feedback, a variety of applications and processes, the possibility of embedding animations and virtual reality allowing formation of e-classes that closely resemble actual traditional face to face classrooms, collaborations, access to resources and services, exchanges that enable sharing of among other things ideas, challenges and opportunities. When all these characteristic are effectively combined and harnessed they open up for improved quality of learning and open up for more individuals to join in learning initiatives.

While many of the e-learning characteristics can be explored in terms of the advantages they bring into education practices; in this paper, I only explain the advantages of those characteristics that I consider to be more relevant to this presentation intended to establish the situation of e-learning for teacher education in Tanzania. The target characteristics include the possibility of improving the quality of teacher education, increasing the number of teachers in the country, increased visibility and flexibility, increased opportunities for collaboration and partnerships, sharing of innovative pedagogy and opening up greater potentials for transformation through an engagement of multidisciplinary approaches in developing education and training content.

### **Improving the Quality of Teacher Education**

The possibility of improving the quality of education is perceived by considerations that through e-learning the use of multimedia brings in the use of a variety of pedagogical operations that cannot be easily accomplished in the traditional classrooms. For example, different learners have different learning styles (some learners are more comfortable when more tactile activities are included, others learn more when more visual images are projected, others learn more when they listen to instruction, etc.). With effective use of multimedia, e-instructors have the opportunity to embed all types of media and configurations: icons, simulations, animations, three dimension (3D) images and pictures to ensure they capture the interest of their diverse students. Additionally, e-learning provides more opportunities for teachers to easy and frequent communication that is highly spontaneous to the extent that it is nearly “conversational” (Holmberg, 2001) between learners and instructors as well as between and among the learning peers. Through Internet chat rooms, e-mails, and currently social media such as Facebook, Wikipedia and blogs learning can be made more experiential, i.e., dialogical, lively, instant and up to date. Learners can communicate and interrogate their own views as they get immediate critiques of their positions from peers and instructors. Ultimately, learners polish how they process learning and determine what is relevant and meaningful to society and to themselves.

Moreover, online teaching and learning content is not limited to the instructional content developed by target instructors; learners have the opportunity to surf across many websites to access information relevant to given topics from individual with diverse experiences. In this way, learners stand better chances of scaffolding the content that their instructors offer – they have great opportunities to be adventurous, critical and innovative.

### **Increasing the Number of Teachers in the Country**

Although the question of outreach programmes have been practiced in traditional education institutions with extension units or distance education departments, currently the e-learning part of distance education have better provisions to meet this challenge more comprehensively and effectively. Information communication technologies (ICT) enhanced with mobile technologies have the capabilities and potentials to reach individuals at further distances. Such capabilities are continuously being harnessed to improve existing knowledge, skills and values as well as develop new ones. Grounded on such potentials, more individuals are attracted to join education programmes provided through e-learning. As shall be explained later in the section dealing with teacher education and e-learning in Tanzania the government in collaboration with educational institutions have worked out plans to capitalize on the opportunities of e-learning so as to educate more teachers in order to meet the teaching demands which are increasing parallel to efforts made to bring the obligation of making education a right for all (EFA) fruitful.

### **Increased Visibility and Flexibility**

Generally, social structures of domination and marginalization have continuously left out great numbers of individuals from the education services. By doing so, the voices of those left out have not been heard and have been made invisible even though they could be catalysts to development. This is a phenomenon in Tanzania although the country is one of the signatories of the UNO's convention for the provision of education as a right for all people. Among those whose voices have been shut out from education are majority of those living in rural areas where no schools and colleges have been built (this group include migrant populations such as pastoralists and hunters); majority of women, the poor, refugees, the disabled and those who have clung to ancestral traditions. Since e-learning has the potential to reach people where they are, then those whose voices have been shut out of educational settings can now be provided with avenue to air, share, and improve their education. They can as well gain new knowledge, skills and values from the courses they pursue and from sharing experiences of their learning peers and the global community.

The traditional face-to-face education system required that individuals leave their homes, jobs, and other social settings for prolonged portions of time. For some individuals, this had negative impact to their lives and they decided to opt out of the institutionalized education systems. Further, some individuals who adhered to traditional production systems realized that the content of such education systems did not serve their interests and needs (e.g., pastoralists taught how to grow coffee or cotton instead of being taught how to take care of their animals and the vice versa). The outreach capacity of e-learning to reach most, if not all areas, coupled with the flexibility of educational programmes that can be 'fetched' from online educational providers and free educational resources technically referred to Open Education Resources (OERs) provide such individuals (guided by their instructors) the opportunity to pick programmes most suitable and relevant to the learners' socioeconomic needs and interests.

### **Increased Opportunities for Collaboration**

E-learning has increased trust and opportunities in collaborative teaching, learning, research and services. Through e-learning tools, communication can be designed to be faster (synchronous, asynchronous, and/or automated), it can be made more frequent, relatively conversational, and broadly distributed. Individuals and groups dispersed at great distances have more opportunities to collaborate and produce on demand outputs within given timeframes. Participants within e-learning communities can easily work together, teacher educators and teacher trainees distributed across different geographical locations can work together to solve common problems or individualized problems that is of interest to others. Collaboration is encouraged within current theoretical frames of social constructivism whereby teaching and learning are considered both as individual as much as they are collective endeavours. Making reference to learning, Rekkedal and Qvist-Eriksen, (2003) point out that under social constructivism,

[t]he learning process is not seen as an individual pursuit concerned with accumulating knowledge, but as part of a social process where students help each other to develop understanding in an enjoyable and stimulating context. The learning is process driven and learners must be involved in the social process and pay attention to this process to achieve their desired goals. The outcomes are not only academic, but involve increased competence in working with others, self understanding and self confidence. The learning activities may end up in group products which would not be achievable if learners worked individually, or the process may consist of learners helping and supporting each other in achieving individual learning goals.

### **Sharing of Innovative Pedagogy**

E-learning features provide participants in educational transactions with the possibility of sharing pedagogical approaches and techniques, particularly sharing those approaches and techniques that seem to lead to the attainment of intended teaching learning outcomes and objectives. A number of e-learning interface or features might be employed as means of sharing pedagogical purposes: e-mailing, blogging, exposure to educative web-sites and other fora, chat-room discussions, etc. Employing multimedia to enable embedment of variations of activities and presentation formats such as engaging virtual reality, animations, charts and mapping, individual and group activities, online practical sessions from recorded live audio clips and theoretical sessions, etc. It is also interesting to note that except in a few cases when synchronous e-conferences or chats are employed, mostly e-learning instructors and learners enter and leave the education transaction fora at their convenience (asynchronous) without disturbing others.

E-learning makes it possible to easily bring to fruition what different scholars have proposed as being most ideal to assist actual learning to take place. Scholars such as hooks (1994) and Vygotsk (1989) suggest that learning should embed aspects that take characteristics of pleasurable play engaging those who are involved. When employing e-learning, this characteristic can be fulfilled as learners exchange chat room messages, web sites with exiting information/ animations/pictures/charts/maps. Additionally, scholars have also suggested that effective learning pedagogy should empower learners to be independent thinkers and innovators; this feature can be attained as learners independently search the Internet sites, exchange information with peers and scholars other than their classroom instructors, use OERs, etc. Learners also are encouraged to form communities of learning and partnerships that may last beyond their studies; these are ideal for long lasting relationship leading to addressing common societal problems.

### **Transformation Through Multidisciplinary Approaches to Content Development**

I believe that most of us are aware of the demand of current global economy for individuals to acquire multidisciplinary competences that are needed for the same

individuals to handle multitasks at their workplaces. This demand would require, for example, that teacher trainees and their instructors get exposed to multidisciplinary approaches in handling events at colleges and in schools where they finally get employed. Multidisciplinary enables teacher trainees to fit into societal demands as well as train others to handle similar situations. The teaching job exposes teachers to situations where they are obliged to take responsibilities that would typically fall into fields such as nursing, medicine, police, law, guidance and counselling, accounting, administration, monitoring learners' nutrition content and intake; and taking care of students' with special needs.

E-learning tools that enable instructors to communicate and collaborate with specialists from a variety of fields are of great value when developing e-learning content for teacher education programmes. It is therefore important to engage specialists from other fields when developing courses for teacher trainees. Such engagement would transform the way content in the field of teacher education is developed as well as how the actual practice of teaching is conducted. It is equally important for course teams who develop teacher education content to use e-learning tools to search for relevant information from other fields of specialization and incorporate relevant ideas into the content they develop. Currently, open educational resources (OERs) which include free online content have added to the pool from which teacher trainees, instructors, and online content developers can draw relevant content from a variety of disciplines. Precaution, however, need to be taken to ensure that content drawn from OERs is relevant and fitting into the context for which it is developed; otherwise contextualizing the same becomes mandatory.

### **E-Learning: Hope for Teacher Education in Tanzania**

With its policy on Information and Communication Technology (ICT), the Ministry of Education and Vocational Training (MoEVT) has developed a Teacher Development and Management Strategy (TDMS) aimed at training and sustaining sufficient competent teachers, tutors and managers for pre-primary, primary, secondary, adult and non-formal education; and teacher education. The need to increase the number of teachers in all these sectors was triggered by the need to achieve education for all (EFA). The government has almost doubled school enrolments after implementing the 2002-2006 Primary Education Development Plan (PEDP) and the 2004-2009 Secondary Education Development Plan (SEDP). As an example, while the enrolment of students in primary schools in 2009 was 7,637,813 there were only 157,185 teachers. This made the teacher/student ration 1: 53 which is higher than the government national standard of 1:40. The teacher deficit in 2009 stood at 118,630 (MOEVT, 2009). Given the foregoing, it is an imperative to have additional competent teachers through pre-service (PRESET) teacher training and upgrading those who are currently in service through in-service training (INSET) programmes.

E-learning is the hope in responding to the increased student enrolments. Through e-learning the Tanzanian government can work out and implement plans that ensure the

filling of the teacher gaps and improving teachers' competences. In preparation for the engagement of all teachers in provision of and participation in e-learning, all teachers who are currently undergoing INSET and PRESET programmes are obliged to study a variety of competences among which are ICT basic skills. In addition to ICT basic skills, trainees pursuing diploma teacher education programme take a programme in Information and Computer Studies (ICS) of which e-learning is a component. The later enables the diploma holders to teach the same programme to secondary schools and Grade "A" teachers who have the task to cascade the skills to their students after graduation. The organization and implementation of these programmes are expected to have a spillover effect that will assist in enabling as many individuals and sector to be aware of and use e-learning for teaching and learning.

At teacher training college levels, training of trainers (TOT) approach has been adopted for tutors to use tailored materials and internationally recognized training programmes of Cisco IT Essentials and ICDL to acquire basic ICT skills. Through collaborative initiatives between e-learning literate college tutors and volunteers, the college tutors are trained on the use of ICT for teaching and learning. The University of Dar es Salaam Computing Centre (UCC), the College of Education at the University of Dar es salaam (UDSM) and The Open University of Tanzania (OUT) have been instrumental in the execution of the programme.

Outputs from such training are reflected through qualified trained MOEVT educational management officials, principals, and tutors who are now working in the colleges. Forty three principals and fifteen officials in the Department of Teacher Education and four hundred and eighty nine tutors have been trained in ICT and Computer Basic Skills using the International Computer Driving License (ICDL) resources. One hundred and seventy seven tutors have been awarded the ICDL Certificate. One hundred and twenty two tutors have qualified with certificates after successfully completing a blended Cisco IT Essentials course and one hundred and eighteen have attended technical skills training programmes enabling them to manage ICT equipment in 34 teacher colleges distributed across the country. Three hundred and three tutors have qualified with basic computer skills that enable them to apply the MOODLE platform in mapping web resources across the teacher education curriculum (MOEVT).

Generally, a good number of tutors in teacher colleges pursue professional development programmes using e-learning facilities available in the colleges. For example, supported by a German NGO (InWent) some tutors in Tanzanian teacher colleges have been awarded special e-learning certificates from the University of Western Cape qualifying them to teach aspects of the HIV and AIDS Pandemic to teacher educators in Africa. Attainment of competences in engaging e-learning has made it possible for college tutors to study from different universities within and outside Tanzania, e.g., several Master and PhD students have (and are) pursuing studies employing e-learning facilities at the 35 teacher colleges and all the universities in the country.



ICT instructors at Morogoro teachers college working at his computer laboratory office

ICT literacy has been made a compulsory aspect for all students and staff in all teacher education colleges and universities. Several universities, including OUT and UDSM offer Information and Communication Technology degree programmes. OUT offers several ICT programmes specifically targeting college and secondary school teachers with the aim of attaining similar knowledge and skills spillover effect to instructors and students at other levels of education where graduates from such programmes get employed.



Part of the Morogoro teachers college ICT laboratory

### **E-learning for Teacher Education at the Open University of Tanzania**

The Open University of Tanzania (OUT) is one of the universities in the country that offers teacher education programmes at Certificate, Diploma, Bachelor, Masters and PhD levels. The Certificate and Diploma are offered through the Institute of Continuing Education which is the arm of the university housing majority of none degree programmes. The rest of the teacher education programmes are offered through the Faculty of Education. It is worth mentioning that courses taught for each programme draw instructors from across other faculties and institutes of the university as well as from institutions other than OUT.

Initially the OUT offered all its programmes through the print media. However, with increased ICT capacity, availability, social capital capable of using ICT and the Internet and public acceptance of ICT as imperative capital of our time, OUT is gradually integrating e-learning into its programmes. To ensure efficacy and sustainability of ICT usage and grounded on the National ICT Policy of 2003, OUT has developed its own ICT Policy and implementation strategy in order to guide ICT usage and e-learning operations. The institution's mission for implementing e-learning is to provide opportunities to OUT community, in exploiting the potential of technology to enhance self-paced and learner-centered education. In line with this mission, OUT's e-learning vision is to support the growth ambition of OUT, by extending teaching and learning activities through the development and delivery of programmes using ICT to increase accessibility, retention and throughput (OUT, June 2009)

On matters of ICT use and e-learning operations, the institution is collaborating with the government through ministries such as the Ministry of Education and Vocational Training (MOEVT) and the Ministry of Communication, Science and Technology (MCST). It is also collaborating with other Universities, organizations and institutions to ensure that an effective ICT infrastructure is developed to maximize utilization of the technologies for development in education and other sectors. Nationally, the Internet bandwidth has been highly limited; hence efforts to broaden the system through an improved National Information and Communication Technology Infrastructure Backbone has been enforced since 2011.

*[T]he cable will have capacity to carry all information and link up with the Indian Ocean sub-marine cables EASSY, SEACOM and UHURUNET – whereby Dar Es Salaam will be the landing site... [since the backbone] will be connected by existing submarine cables to the rest of the world, it will be [a] solution for reduction of ICT connection charges..." (Mushi, Tonya & Ndilanha, n.d).*

Through the enhanced Internet connectivity in the country, Internet transactions such as e-learning will be made easier, more efficient and therefore effectively successful.

OUT's intention is to ultimately offer most its programmes using the e-system. However, due to the current constrained Internet infrastructure and low bandwidth, limited ICT and Internet qualified staff, large numbers of enrolled students and programmes; the institution has started to move rather gradual towards this goal. Several courses have been customized into the Moodle platform. The institution is also using web-based learning management system customized from Moodle and audio technologies to serve the virtually impaired students. Due to lack of reliable internet infrastructure, especially in rural areas, the institution is exploring the possibility of employing mobile phones to support learning. There is also a teacher education e-learning project jointly run with MOEVT, Mid-Sweden University (MiUn), and University of Dar es Salaam. The project employs both e-learning and mobile systems to facilitate learning; it is currently being pilot tested and its success will be cascaded to other programmes at the university and beyond.

### **The Open and Distance e-Learning (ODEL) Centre at the OUT**

This centre was launched by the Permanent Secretary in the Ministry of Education and Vocational Training on 10<sup>th</sup> December 2009. It was established through a partnership between OUT and the African Virtual University (AVU). The centre is expected to catalyze e-learning activities, specifically teacher education programmes at OUT and beyond. The Centre conducted a pilot phase involving 20 first year students of the academic year (2009/2010) at OUT. This programme made use of special ICT - integrated learning modules for mathematics, physics, chemistry, biology-zoology-botany, ICT and Education. Under the coordination of AVU, the modules for these courses were jointly developed by experts from diverse African universities: Jimma University (Ethiopia), University of Nairobi (Kenya), Universite d'Antananarivo (Madagascar), Universidade Pedagogica (Mozambique), Universite Cheikh Anta Diop (Senegal), Amoud University, University of Hargeisa and East African University (Somalia), The Open University of Tanzania, Kyambogo University (Uganda), University of Zambia and the University of Zimbabwe. Each participating university has the liberty to adopt or customize these modules which are freely online deposited as OERs. At the OUT the modules are downloadable from the OUT web site or can be obtained from the ODeL Centre which is open for use to all OUT students and staff. As preparation for sustaining the centre, AVU trained six instructors through the African Capacity Enhancement Project (ACEP) so as to serve the center in areas of e-learning materials development, e-learning delivery technology, and governance, management and financing of e-learning. The ACEP experts are expected to train other members of the institution as well as others from interested universities in the country.

OUT's contributions to the establishment of the ODeL centre constitute of, among other things, availing space for computer labs, face-to-face, examination sessions, and staff offices. The institution also contributes in terms of supplying tutors and instructors for the programmes and maintaining the Centre.

As a physical hub for creating, organizing and sharing knowledge and development ODeL generally serves as:

- (i) A training facility for staff of the University in the use of ICT in developing, delivering and managing Open, Distance and e-Learning;
- (ii) A delivery point for current and future ODeL programs, including the AVU Teacher Education Program;
- (iii) The physical location where staff are able to conduct research and participate in collaborative work in ODeL;
- (iv) A physical installation that can be used by the University to generate funds and thereby guarantee sustainability of the partner relationship between the OUT and the AVU.

The long term plans for the Centre was to enroll all OUT students taking B. Sc (Ed.) and B. Ed (Science) from the 2010/2011 academic year; to expand the program to other Universities in Tanzania; and jointly with AVU, to prepare modules for other non-

science and mathematics subjects, that is to develop e-courses for Arts and Social sciences, Business Studies, and Law programmes.

### **The SADC Center of Specialization in Teacher Education in Tanzania**

Following the Southern African Development Community (SADC) launching of a capacity building initiative in Open and Distance Learning (ODL) project; three centres of specialization (CoS), - (one for teacher education in Tanzania at OUT), one for public administration and management (Botswana) and one for secondary education (Malawi) - were established in accordance with Section 7E of the SADC Protocol on Education and Training. The establishment followed a competitive bidding process. The purpose of the centres are to contribute to the development and deployment of effective, harmonized ODL programmes, increase access to quality education and training and support regional integration across SADC members.

CoS at OUT has not yet started to operate its study programmes, however most of the necessary infrastructure which includes *inter alia* e-learning technologies both at the CoS and the regional Centers is in place. CoS is mandated to provide specialized short and long term training priority courses in such areas as e-learning, ODL curriculum planning and material development, ODL financing, budgeting and costing, student support, assessment and accreditation in ODL, ODL management, administration and marketing, quality assurance in ODL, research skills in ODL application, strategic planning and management in ODL and monitoring and evaluation in ODL.

Initial beneficiaries of the CoS centre are:

learners, and teachers at primary, secondary and tertiary levels and those involved in Technical and Vocational Education and Training (TVET) programmes ... secondary beneficiaries will be those responsible for designing and implementing ODL in the region including SADC secretariat, specifically the Directorate of Social and Human Development and Special programmes (Maritim, 2009).

The center expected to train a total of 1,080 ODL practitioners in its first two years. These will be trained at ten training sessions each involving six participants from the nine SADC countries (Angola, Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Tanzania, Zambia, and Zimbabwe). At the end of the first two years each SADC country will have had 120 members who are competent in fundamental ODL and e-learning knowledge, skills and values. These are expected to cascade what they learn to other members of their organizations whose knowledge will further spill over to community members. It is envisaged that ultimately, there will be awareness of the efficacy of e-learning among regional members. This awareness is a necessary trigger to attract members to willingly participate in e-learning and encourage others to do the same. When education is viewed as a means of attaining development at individual, community and national levels, then, the programmes at CoS will be of immense benefit to the SADC countries.

### **Common Challenges**

There are, of course, several challenges encountered with attempts to establish and sustain e-learning endeavors. The challenges are particularly a consequence of the context at which these establishments find themselves in. E-learning in most, if not all, African countries takes place in a low developed country whose economic clout is marginalized and dis-empowered within current globalized socio-economic structures. It is on these grounds that the following challenges are a typical characteristic:

- Limited or none availability of e-learning infrastructure and facilities, especially at the initial stages.
- Limited or none availability of experts in e-learning technologies, pedagogy and management
- Insufficient and unsustainable budgets
- Resistance from traditional/conservative practitioners in the field of education and staff who are disgruntled by the system
- Over dependence on foreign donors, when donations dry up projects are no longer sustainable.

### **Opportunities to be Harnessed**

- Availability of widely distributed study points such as the diverse geographical locations reached and a variety of learning technologies (multimedia) in e-learning at the MOEVT and the Open University of Tanzania which have been discussed above have the potential to involve more of the potential individuals into teacher education programmes.
- E-learning teacher education programmes in Tanzania bring practicing teachers in for in-service training; such teachers could not have had education opportunities because of limited space in conventional teacher education colleges. Some of the same teachers have too many social, economic and community responsibilities which prohibit them to join traditional in-service programmes, which take them from their jobs, families and communities for long periods of time during the course of their study.
- E-learning teacher education programmes have potentials to reduce costs as teacher trainees do not have to travel to specified locations for registration, studying, attaining guidance and counseling services, attempting and submitting examinations, meeting study groups and instructors, or resolving administrative issues. The needs for all these educational related transactions are met through e-learning facilities and services. With e-learning there is enormous reduction of the need for stationery facilities and equipment.
- E-learning facilities and multidisciplinary approach to teacher education programmes have potentials to stimulate collaborative research, especially action research which empowers practitioners to interrogate and improve the profession. As Eiletsen and Strom (2008) correctly point out  
 an actual and relevant teacher education demands a dismantling of the academic dominated tradition to the advantage of a more flexible net-based platform which can both safeguard more adaptable qualifications and

give a basis for research and development to the good of all partners. (p. 153).

- E-learning, if appropriately understood and harnessed has the potential to bring about self-centered learning and lifelong learning into fruition among teacher education trainees. The trainees learn to self-learn and have at their disposal materials: equipment, personnel to guide them and facilities they need to realize this. With e-learning Lindstrom's (2008) proposition that "learning could go on if there were no teachers" (p. 173) can be realized.
- E-learning gratifies trainees because of the immediacy with which feedback is provided and communication between and among staff and peers is enhanced

### Concluding Remarks

This paper has explored several issues, among which are the concept of education and e-learning. Education has been presented as a contested concept specifically based on two major perspectives of dis-empowering education and education for empowerment. Learning has been considered a process of inquiry and construction of meaning whereby fundamental questions are posed while people, learning intentions, processes, the context, and the content of learning are considered. The meaning, efficacy, potentials and challenges of e-learning have been discussed and conditions under which e-learning initiatives are taking place in teacher education system in Tanzania have been presented. E-learning initiatives that have been highlighted are those at the MOEVT, specifically those at teacher education colleges and those at the OUT. Additionally, common challenges and opportunities of e-learning have been highlighted.

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