Distance Learners' Support through ICT Training: the Experience of the Open University of Tanzania

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Abstract

The Open University of Tanzania is a government owned institution that delivers its services through various means of communication including face-to-face and online interactions. Since 2004 the University started using ICT in delivering its services. However, the use of ICT in training started in 2011 when the University directed all students to enroll on ICT course. This paper documents the experience of students on the influence of ICT training in supporting their learning process. The study used a descriptive survey design with a view to determine distance learners opinion on how ICT training supports their learning process. 100 respondents purposively randomly selected from Mwanza Regional Centre participated in the study during the 2016 May/ June Examination Session. The data were analysed using descriptive statistics. The results indicate that ICT course provides support for distance learners in terms of awareness, use and adaptation. Students reported to face challenges related to practical training, availability of ICT resources for practices, internet connectivity, low internet speed and high costs for internet bundles. The study recommends OUT increasing availability of ICT infrastructure to distance learners through collaboration and partnership and increasing ICT learning opportunities to students especially in the use of different systems developed to support students including examination registration system, application system, Students Academic Records Information System (SARIS), E-learning system and the Library system.

Introduction

In distance learning system, ICT bridges the gap between the learning facilitators and the learner (Pena-Bandalaria, 2007). The application of ICT in educational activities facilitates interaction, accelerate teaching, deepen skills, motivate and engage students in learning activities (Coates, 2005; Ali and Bailur, 2007; Adeoye, Oluwole and Blessing, 2013). It is well documented that ICT has power to influence learning as through ICT students are capable of communicating, sharing discussions, downloading learning contents, submitting assignment and communicating to lecturers (Kirschner and Weperies, 2003 also Ali and Bailur, 2007). According to Adeoye *et al.* (2013) ICT contributes to the quality and quantity of teaching and learning as well as in research at both convention and distance education institutions. The significance contribution of ICT in creating opportunities for learning made OUT to see the need to integrate ICT in teaching and learning.

This study employed a descriptive survey design to investigate the influence of ICT in quality of Education to distance learners in Tanzania. The topic is chosen with a view that Tanzania just like other developing countries has problems with ICT infrastructures such as availability of network, electricity, and ICT skills training opportunities that are not well developed (Pelgrum, 2001; Kwacha, 2007; Kagugu, 2011; Oyovwe-Tinwoye and Adogbeji, 2013). Questions guiding this survey included: what ICT facilities are available to students for supporting their learning? Are students ready to learn and use ICT in their teaching and learning process? What are the opportunities created for students to learn ICT literacy skills? These questions guided the study to explore the extent to which ICT provides opportunity for students and the management to assess its decision and hence improve the quality of learning for distance learners. Information and Communication Technology (ICT) is defined differently by different scholars, however ICT includes computers, the Internet, and electronic delivery systems such as radios, televisions, and projectors among others, and is widely used

in today's education field (Ali *et al*. 2007; Baruah, 2011 and Fu, 2013). For Sarkar (2012) Information and communication technologies consist of hardware, software, network and media which can be useful in collecting, storing, processing, transmitting and presenting information (voice, data, text and image) as well as related services. In this paper, ICT include computers, the internet, telephone, television, radio and radio visual equipment. However, it is insisted that, the definition of ICT should refer to any device and application used to access, manage, integrate, evaluate, create and communicate information and knowledge (Ali *et al*. 2007). The focus of this study was not to show the distinction of ICTs categories, the intention was to explore the integration of the interactive ICTs in teaching and learning to enhance the quality education.

The benefits of using ICT in teaching and learning include; assist students in accessing digital information efficiently and effectively; Support student-centered and self-directed learning and producing a creative learning environment. It also include; promotion of collaborative learning in a distance-learning environment, offering more opportunities to develop critical (higher-order) thinking skills, improving teaching and learning quality. It also entails; supporting teaching by facilitating access to course content (Baruah, 2011; Fu, 2013; Oyovwe-Tinwoye and Adogbeji, 2013 also Aralu and Adetimirin, 2014). According to Fu (2013) barriers to ICT include; low teachers' expectations and a lack of clear goals for ICT use in schools.

There is also lack of teachers' collaboration and pedagogical support, as well as a lack of experience among cooperating teachers. Other barriers include, insufficient time to master new software or integrate ICT during teaching and learning process. It also includes; low software competence and habitual ways of conceptualizing what and how students should learn. Integrating ICT in teaching and learning faces challenges related to management.So far, there is low ICT penetration in rural and remote areas, limited knowledge and experience of ICT in teaching contexts. Other challenges are lack of specific knowledge about technology, how to combine it with the existing pedagogical content knowledge to support students' learning

(Fu, 2013; MacNamara, 2008 and Kwacha, 2007).It also includes, excessive focus on teaching technical or operational skills rather than course content. There is also a shortage of ICT skills training opportunities, lack of motivation, and technical and financial support and uncertainty about the possible benefits of using ICT in the classroom. So far, lack of specific and definite ideas on how to integrate technology into instruction will improve student learning (Pelgrum, 2001; Kwacha, 2007). The purpose of this paper was to investigate the impacts of ICT on the quality of distance education by looking at students' readiness to use ICT in learning, availability of infrastructures and the nature of ICT support provided to distance learners.

Literature Review

This study is informed by literatures on the role of ICT in education in facilitating the provision of quality education and the influence of constructivism and instructivism theories on teaching and learning through the appropriate application of ICTs (Fosnot, 1996; Vygotsky, 1998; Dewey, 2007; Baruah, 2011; Fu, 2013 and Sarkar, 2012). Therefore, the discussion in this paper is informed by theories on constructivism and instructivism. Teaching learners thinking instead of conveying the knowledge often relate constructivism to some theorists thinking such as Piaget (1985) who emphasized the role of self-discovery and peer collaboration among the learners while Vygotsky (1998) stresses the role of interactions between learners and teachers. This means that, learners are provided with the opportunity to co-create knowledge from meaningful interaction with their teachers (Vygotsky, 1998 and Dewey, 2007).

On the other hand, the instructivism theory is influenced by behaviourists' theories, which insist on a teacher-directed and planned curriculum. According to Lucas, (2005). instruction is meant to help learners understand and interact with the world but also, learners should be instructed in order to develop skills that are necessary for learning. Although constructivism argues for active participation and knowledge creation (Dewey, 2007). the latter insists

on facilitating learning through teaching in order to lay good foundation for learners (Lucas, 2005). For positive influence of ICTs on improvement of quality education based on instructivism theory, learners need to be instructed in order to get basic development skills. They need to be taught how to apply them (Lucas, 2005). This study was meant to understand the extent to which students utilize ICTs skills for learning and the nature of support provided by teachers to enhance ICT competence among the students.

Constructivism encourages learners' active participation in problem-solving and critical thinking in relevant activities that are engaging (Vygotsky, 1998 and Dewey, 2007). On the other hand, constructivism is interested with the planned setting through which learners can get information. The emphasize is on the role of instructors in supporting and guiding students by equipping them with knowledge and skills (Lucas, 2005). In constructivism, students are regarded as active constructors of knowledge. They can interact and learn from each other. Instructivism emphasizes on teachers ability to create conducive environment that have influence on learners' experience based on the planned curriculum (Lucas, 2005). However, all approaches are equally important in unpacking the influence of ICTs in the provision of quality education. The study was interested to understand the availability of ICTs facilities and the readiness of students to utilize ICTs in facilitating learning activities. This was supported by the interdependency of constructivism and instructivism whereby learners need to have ICT competence in order to utilize ICTs skills in order to become active participants in exploring knowledge through ICTs.

ICT for distance learners

Distance education, also known as open or distance learning refers to a form of education whereby teachers and learners operate on distance bases. Distance education is normally facilitated by the printed and written word, the telephone, computer conferencing or teleconferencing to bridge the physical gap between the instructor and the learner. According to (UNESCO, 2002), distance education

provides educational opportunities to those who were deprived the rights to education for different reasons. The introduction of ICT in education is meant to improve the quality of education through the diversification of contents, methods and promoting experimentation, innovation, the diffusion and sharing of information (UNESCO, 2002; 2005). Tresman (2002) term open and distance education as the system that is open to people, open to places, open methods, ideas where people from divergent background can be accommodated. Open and distance education can help people to secure job opportunities while taking up other socio economic activities due to flexibility in distance education. However, for effective distance education where students access and utilize educational resources, the integration of ICT cannot be overlooked given its influence in enhancing and transforming education. The use of ICT in teaching and learning according to Ali *et al*. (2007) provides opportunities for teachers and students to operate, store, manipulate, retrieve information, encourage independent and active learning, and self responsibility for learning such as for distance learning. The use of ICT helps to solve complex problem to enhance their cognitive skills (Tresman, 2002 and Coates, 2005).

According to Mac-Ikemenjima (2005) ICT is having a revolutionary impact on educational methodology both at conventional and distance education levels around the globe. However, this revolution is not widespread and needs to be strengthened to reach a larger percentage of the population. Therefore, an interdisciplinary and integrated approach of ICT in teaching and learning is very necessary to ensure the successful development of countries' economy and society at large (Mac-Ikemenjima, 2005). Although the development of ICT in Africa has not been encouraging Ololube (2006). some efforts are evident in various countries to indicate the need for ICT in the education system. The experience in Philippines shows that the introduction of ICT in distance learning can alter and raise expectation among users and institutions since ICT leads to the development of new cultures, concepts, and understanding (Pena-Bandalaria, 2007). In Zimbabwe, ICT is regarded as an essential ingredient through the integration of ICT in distance education

programs and higher education in general to make optimum contributions to national development. In Tanzania, ICT is increasingly becoming integral in higher education for both convention and distance learning institution (OUT, 2011). For distance, in education, ICT is instrumental in facilitateing the interaction between learners and teachers to facilitate the acquisition of knowledge (Coates, 2005). OUT is a government owned University that delivers its services through open and distance learning mode since 1994. The University uses various means to support students learning including face-to-face sessions, provisions of study materials, having support staff in regional centre, provisions of assignments, and final examinations.

With increased availability of online resources, OUT since 2004 started using online learning management systems. With a view to ensure that all students at OUT have skills in using ICT in 2007 the University introduced ICT training for the community through ICT community laboratories. During this time, students were given opportunity to learn for half the price and in 2011 the University introducedICT course as compulsoryto all students. In 2015, the University started using blended learning, where students had to access learning resources, do assignments, submit assignments, participate in discussion forum, fill in their portfolio and communicate with instructors online through use of MOODLE learning management system. From 2011 services including course registration, examination registration, online discussions, and communication are online. This means without having the knowledge of ICT many students would not cope with studies. This study focused on investigating how OUT is supporting its students in managing their learning through ICT training services.

Quality of education through ICT

According to Sarkar (2012) ICT can enhance and upgrade the quality of education and instruction. The quality of education can be improved with ICTs in a number of ways. Such ways includes; augmenting student enthusiasm and commitment, by making possible the acquirement of fundamental skills and by improving

teacher training. When ICT is properly used in teaching and learning, can encourage the shift to a situation that is more of learner centered (Kirschner & Weperies, 2003; Asabere and Ahmed, 2013). For example, the use of ICT resources such as videos, television and also computer multimedia software, that merges sound, transcripts and multicolored moving imagery, can make available stimulating, thought provoking and reliable content that keeps the student interested in the learning process (Oyovwe-Tinuoye and Adogbeji, 2013). For example, the radio through its interactive programs utilizes songs, sound effects, adaptations, satirical comedies and supplementary collections of performances. Such interactive programs encourage students to listen and get drawn in to the training that is being provided (Carnoy *et al*. 2011 also Carnoy and Rhoten, 2002). Therefore, it is through such practice, ICTs can be seen as tools, which enable and bring about transformation in the education system. In many countries, ICTs are used largely to increase access to and improve the relevance and quality of education (Sarkar, 2012). ICTs have demonstrated potential to increase the options, access, participation, and achievement for all students.

For example, in India, ICTs have increased access through distance learning as institutions like National Institute of Open Learning (NIOS) and Indira Gandhi National Open University have used a combination of print and audio-visual material as well as traditional face-to-face interactions to deliver their content (Coates, 2005 and Baruah, 2011). Therefore, effective use of ICTs can contribute to the timely transmission of information and knowledge, thereby helping education systems meets this challenge (Kirschner and Weperies, 2003). The use ICT resources such as videos, television, and multimedia computer software that combine text, sound, and colorful, moving image can motivate learners to engage in various learning process (Oyovwe-Tinuoye and Adogbeji, 2013). Interactive facilities such as radio likewise makes use of sound effect, songs, comic skits and other performances convention to make student to listen and become involved in the intended lesson (Ali *et al*. 2007). Therefore, one type of ICT combines the media richness and interactive to other ICT with the opportunity to connect with real

people and to participate to real world events (Yusuf and Onasanya, 2004). Honey and Mandinach (2003) asserts that, ICT can support capabilities for delivery, management and effective teaching and learning. It has brought innovations in teaching and learning process for example, e-learning, e-communication, quick access to information, online students' registration, reduced burden of keeping hardcopy, linking people through social network. However, Ali *et al*. (2007) argue that, there is a need to increase training of teaching staff in the pedagogical issues. ICT supports the features of e-learning, which encourages students' interaction with learning materials and learning environment.

For example in e-learning systems, the learner is involved in learning interactions, which encompass selecting, answering and solving problems (Talebian *et al*.2014). Learners become engaged in the process which leads to a deeper and more effective learning process that is accompanied with thinking and developing sensitivity to external environment (Alstalo and Peltola, 2006; Mäkitalo-Siegl, Zottmann, Kaplan Fischer,2010;). This leads to building confidence and development of learners' characteristics, thus enhancing and improving the quality of education and instruction (Vygotsky, 1998). Patra (2014) has a view that application of ICT in schools provides opportunities to teachers with knowledge and skills to transform their practice of teaching. It enables teachers to provide the learners with improved educational content and are in a position to deploy effective teaching and learning methods that improves quality of learning and the quality of education in general. ICTs should be regarded as a tool for effective enhancement of learning, teaching and education management across the entire spectrum of education from early childhood development, primary, secondary, tertiary, basic education and further education and training (Sarkar, 2012).

Integrating ICT in teaching and learning process

When ICT is appropriately integrated, there is value added to the process of learning and to the organization and management of learning institutions (UNESCO, 2002 and Sarkar, 2012). Technologies are a driving force behind much of the development and innovation

in both developed and developing countries (Ali *et al*. 2007). ICT is considered as a mainstream in higher education due to the fact that, ICTs are used for developing course materials; delivering content and sharing content; communication between learners, teachers and the outside world; creation and delivery of presentation and lectures; academic research; administrative support and student enrolment (Mandal and Mete, 2012). Therefore, the application of ICT in higher education makes learning in higher learning institution to not confine within schedules and timetables (Hattangdi and Ghosh, 2008). In such situation, ICT facilities such as e-learning platform enable learners to create and explore knowledge. For distance learners, effective use of ICT defines their existence and success through the ODL system. The challenge facing higher learning institutions could be the students' readiness to utilize ICTs for learning and the availability of infrastructures for students to access.

ICTs are a potentially powerful tool for extending educational opportunities, both formal and non-formal (Ali *et al*. 2007 and Patra, 2014). ICT creates opportunity to previously underserved constituencies such as scattered and rural populations, groups traditionally excluded from education due to cultural or social reasons such as ethnic minorities, girls and women, persons with disabilities, and the elderly, as well as those who face challenges to enroll on campus because of several constraints (Pena-Bandalaria, 2007). ICTs make both teachers and learners not to rely solely on printed books and other materials in physical media housed in libraries (and available in limited quantities) for their educational needs.

With the Internet and the World Wide Web, a wealth of learning materials in almost every subject, where avariety of media can now be accessed from anywhere at any time of the day and by an unlimited number of people. For example, online course materials can be accessed at any convenient time for students. According to (Patra, 2014) the benefit of ICTs as students engage in learning activities include: students using voice communication aids gain confidence and social credibility at school in their communities;

increased ICT confidence amongst students motivates them to use the Internet at home for schoolwork and make their curiosity fulfilled. Computer can improve independent access for students to education; students with profound and multiple learning disabilities can easily communicate more; visually impaired students using the internet can access information along their sighted peers. There is emphasizes on ICT as instrumental to improve the quality of education when effectively utilized in relevant educational situations.

The bulk of research in ICT in general and in distance education in particular indicates that ICT has a potential to break the challenges of access, retention and completion in the education system and improve the quality of life (Ali *et al*. 2007; Patra, 2014; Alestalo and Peltola, 2006; Attaran, 2007; Coates, 2005 and Adeoye *et al*. 2013). Issues of ICT training in distance education especially in developing countries face a challenge of aligning ICT skills training curriculum with the needs of the clients. In this case, students studying in open and distance learning at OUT. Little is known about how lecturers and management design, document, and review ICT curriculum to ensure the quality and relevance in supporting students' online learning. From the students support services perspectives, the study sought to answer overall question: How do ICT training services at OUT support distance learners in their learning process? More specifically the study addressed the following sub questions:

1. What are the ICT training opportunities available for OUT students to support their learning process?
2. What are the ICT training resources available for OUT students to support their learning process?
3. What ICT literacy skills do OUT students use to support their learning process?
4. What are the suggestions to improve ICT training skills to support students in online teaching and learning process?

Methodology

Since this studywas a descriptive survey in nature and aimed at disclosing the contextual aspects of the phenomenon under study, a

single case study approach (Yin, 2003) was adopted. This study like other single case studies, did not attempt to make statistical generalization, but focused to contribute to the theoretical understanding, 'analytical generalization', of distance learners support through ICT training. The study targeted a specific group of people in a specific context, thereby focusing research in such a field. The study met case study criteria as the respondents involved were those involved in online teaching and learning process of the Open University of Tanzania and had done the introduction to ICT course (OCP 100).

Participants

The study involved 100 (47 females) distance learners registered at OUT who had done their examinations in May/June 2016 in Mwanza regional centre (Table 1). Respondents were purposively and randomly selected based on distance learning experiences on the availability of ICT training opportunities; ICT skills acquired and used; motivation; resources availability and use; and transfer of knowledge. Respondents were in theirnnual and supplementary Examinations during the May/June 2016 in Mwanza Regional Centre of the Open University of Tanzania. Respondents were not required to write their names or leave any identification mark. Respondents received the same questionnaire, as all OUT students are required to register and pass introduction to ICT course.

Table 1: Respondents' characteristics

Programme	**Sex**		**Total**
	Male	Female	
Foundation course	16	20	36
Undergraduate student	35	26	61
Postgraduate student	2	1	3
Total	**53**	**47**	**100**

Data collection and analysis

Data were collected through questionnaire developed by the researchers. Respondents were given a questionnaire to fill in after they had finished their examination papers and had to return to examination invigilators the same day. In total, 120 questionnaires were distributed of which 100 were returned. The questionnaire was developed to measure students' perception and experiences on the issue of distance learners' support through ICT training. As ICT training was for all students, the population chosen was random representations of all students at OUT as all were exposed into the same ICT course. We used purposive random sampling approach in which all students registered and did their examination in Mwanza regional centre in May/June 2016 had equal chance of participating in the study. Data were collected in one day to reduce bias.

The questionnaire was developed in a seven-point Likert scale (1=Strongly Disagree 7=Strongly Agree) and three open-ended questions for students to express their views in writing. The reliability of the 7 point Likert scale with 57 items was tested and scored a Cronbach's Alpha of 95% indicating that the tool was strong for this study (Bland and Altman, 1997 and DeVellis, 2003). The 57 items were then grouped into five categories availability of ICT training opportunities; availability of ICT resources; skills trained and used; transfer of knowledge; and attitudes/ motivation to learning and using ICT. All the items in a questionnaire before further analysis were subjected to reliability test. A Cronbach's Alpha score of 85% was obtained indicating the instrument had a good measure of internal consistency, that is, a set of items were closely related as a group for examining a phenomena in question.

The Cronbach's Alpha for each factor is indicated in Table 2. Data ware analysed using a Statistical Package for Social Sciences (SPSS) version 22 for windows.
The five factors (availability of ICT training opportunities; ICT skills acquired and used; motivation; resources availability and use; and transfer of knowledge) were then subjected to factor analysis. Factor

analysis (Principal Components Analysis) was forced in 5 factors, which resulted in factor on availability of ICT training opportunities (6 items, α= .87) explaining 63.77% of the variance, other factors are as indicated in Table 2. The principal component analysis indicated the important parameters capturing variation in the study. With factor analysis, we found that all the five factors were capable of explaining the observed variance in the proposed study. In this study, variations were from the factor related to availability of ICT training opportunities. This is well understood as not all regional centres of the OUT do have ICT skills training laboratories and that ICT services and ICT skills training opportunities are unevenly distributed in Tanzania.

Table 2: Factor Analysis within Respondents Questionnaire

Factors	Example of Items	Cronbach's Alpha value	%Variance	M	SD
Availability of ICT training opportunities	• I get opportunity to be trained in ICT concepts and uses • The university provides opportunity for students to learn ICT • The ICT course provided by the university gives me opportunity to master and use ICT • There are available opportunities to increase ICT skills	0.87	63.77	4.64	1.02
Skills acquired and used	• I do use MOODLE platform for learning purpose • I store lecture notes on CD-ROM • I do regularly access the internet for search of	0.80	18.46	5.21	1.41

	information • I do participate in online discussions to share information				
Motivation	• I prefer to read lecture notes and supplementary materials from laptop, computer and handsets • I prefer to learn ICT skills • ICT is my hobby • I like to use ICT during my leisure time	0.80	8.21	5.46	1.11
Resources availability and use	• I do use free bundles provided by networks for downloading learning resources • I have access to power/electricity in my home • There are computer facilities meant for students use • I own a computer/laptop	0.83	6.73	4.37	0.96
Transfer of knowledge	• I have been engaged in teaching my fellow students in use of ICT • I can identify problems in my ICT equipment • I can write my lecture notes using word processor	0.79	2.83	4.77	1.56

Findings

Availability of ICT training opportunities

According to OUT prospectus (2015/16), all OUT students have to register and pass an Introduction to ICT course (OCP 100). In this study, students were asked to rate using Likert scale on items related to availability of ICT training opportunities to facilitate their learning process. Students in this study indicated that OUT provides opportunities for students to learn ICT skills through specialized

course and do provide chances for students to increase their skills as presented in Table 3.

Table 3: Availability of ICT Skills Training Opportunity

Item	Mean*	SD
I get opportunity to be trained in ICT concepts and uses	4	2.19
The University provides opportunity for students to learn ICT	5	2.16
The ICT course provided by the university gives me opportunity to master and use ICT	4	1.97
There are available opportunities to increase ICT skills	5	2.10
I have opportunity to use e-mail message for communication	4	2.36
I have official email for sending and receiving information from the university	5	2.24

*The student responded to a Likert Scale range 1=Strongly Disagree to 7= Strongly Agree

These findings are supported by the findings in the same study on Motivation to use of ICT facilities and the transfer of knowledge that students indicated to possess (Table 4 and Table 5).

Table 4: Motivation to Use of ICT in the Teaching and Learning Process (N=97)

Item	Mean*	SD
I do find opportunities to learn ICT skills	6	1.90
I find digital learning materials such as CD/DVD, audio, video and MOODLE interesting in my learning development	5	2.31
I find printed learning materials interesting in my learning process	6	1.96
I like to use ICT during my leisure time	5	1.84
I like to use official email to communicate	5	2.38
I prefer to learn ICT skills	6	2.00

I prefer to read lecture notes and supplementary materials from laptop, computer and handsets	5	2.38
ICT is my hobby	6	2.21

The findings in Table 4 indicated that OUT students are motivated to learning ICT skills in such a way that they do find opportunities to learn ICT, find ICT skills support their learning and that ICT have become their hobby. The ICT skills learnt support them in doing other activities that, this study have termed transfer of knowledge.

Table 5: Transfer of Knowledge and Skills (N=97)

Item	Mean*	SD
I can identify problems in my ICT equipment	5	2.40
I can present my document using power point	4	2.46
I can use Word processing - prepare papers	5	2.38
I have been engaged in teaching my fellow students in use of ICT	4	2.52
I have online group discussion with my fellow students	6	1.83
I have some ICT literacy skills for supporting my learning process	5	2.33

As depicted in Table 5 students indicated to have little skills in using power point presentation. Only a few have skills enough to facilitate fellow students in ICT skills training.

Availability of ICT skills training resources

ICT skills training is faced with challenges including those related to resources (Mnyanyi *et al*., 2010; Mnyanyi *et al*. 2012) that would support them to overcome challenges related to situational (lack of time, money and support), dispositional (lack of self confidence) and institutional (lack of support from the institution) that hinder their academic progress (Wiesenberg, 2001; Gao, 2012). Students were asked to rate in a Lirket scale on the availability of ICT resources that support the distance learners at the Open University of Tanzania. Findings indicate that student use variety of ICT resources

(computers, mobile phones, laptops, storage devices, television, internet, and power banks/ electricity) to facilitate learning process (Table 6).

Table 6 Availability of ICT skills Training Resources (N=97)

Item	Mean*	SD
I do attend computer learning classes	5	2.33
I do own email address for sending and receive messages	5	2.34
I do receive free bundles in my mobile phone	6	2.16
I do use free bundles provided by networks for downloading learning resources	5	2.29
I do use power bank and sometimes do use solar energy	6	2.15
I have access to audio-visual/instructional materials through mobile phone and television	4	2.53
I have access to power/electricity in my home	4	2.52
I have CD-ROM to store my supplementary learning materials	4	2.63
I have opportunity to use internet in my learning process	5	2.20
I own a computer/laptop	5	2.43
I posses hard drives such as memory stick to store downloads	5	2.24
My mobile phone have access to internet	4	2.55
There are computer facilities meant for students use	4	2.41
There are opportunities available for accessing online teaching and learning.	5	2.27

ICT literacy skills students use in the teaching and learning process

Experiences of using ICT were also measured in terms of how students use acquired ICT skills in supporting their learning at the Open University of Tanzania. In this study, students indicated to have ICT literacy skills that supported them in managing teaching and learning process and improving their quality of life (Table 7).

Table 7: ICT Literacy Skills Students Use in the Teaching and Learning Process (N=97)

Item	Mean*	SD
I am willing to be approached through email, mobile phone and social media	6	1.88
I can access my SARIS account	6	1.96
I can add comments to documents	5	2.21
I can chart online	5	2.28
I can edit my word document	5	2.33
I can find my saved document in a computer using search facility	6	2.25
I can register my courses online	6	2.09
can register my examination online	5	2.17
I can save my document	5	2.34
I can scan my document using word processor	5	2.25
I can send email for communication	5	2.12
I can use internet	6	2.26
I can use presentation tools like power point	5	2.58
I can use projector	5	2.57
I can use scanner	5	2.50
I can use spreadsheet	5	2.41
I can write my document using word processor	5	2.29
I do participate in online discussions to share information	5	2.40
I do regularly access the internet for search of information	5	2.25
I do use MOODLE platform for learning purpose	5	2.41
I have ability and skills to use social media	6	1.87
I store lecture notes on CD-ROM	5	2.46

Students' opinion for further improvement

Students were asked to provide their views on how ICT course at OUT can be improved. Student opinion were that the OUT management should consider increasing number of weekend courses on ICT skills training, increase computer facilities in regional centres, provide more practical training, improve internet connectivity, provide study materials, and increase ICT facilitators. With the current use of MOODLE learning management platform,

(http://elms.out.ac.tz/login/index.php) the problem of having learning materials will be highly reduced. The challenges that remain are those related to infrastructure, affordability of internet costs, high costs and low internet connectivity, speed, shortages of technical staff to teach courses, and the inability of OUT to cover ICT operational costs (Mnyanyi *et al*. 2012; Mangesi, 2007; Majumdar, 1997; Faraj and Zarif, 2009).

Student indicated the need for having more training on the use of internet, general computer applications (including power point, Word processing, and Spreadsheet). Only a few students indicated a need for training in database, adobe, and the use of specific OUT resources including examination registration systems, Student Academic records Information System (SARIS) elearning platform (MOODLE) and the Library Systems. Students called upon possibilities for improved internet connectivity. In responding to a question on ICT skills they used during their learning process most of the students indicated to have had skills in using email systems, online course registration, office software, application skills, scanning, spreadsheet and skills in using online learning management system. This indicated that students were aware of the importance of ICT skills in teaching and learning process for distance learners.

It is important to note that OUT has made efforts to ensure that students learn ICT by making one of the ICT courses compulsory for all students. The challenge that remains is that of infrastructure and poor availability of internet. In this study, it was noted that students indicated satisfaction of the use of student emails for communication, use of internet services in the teaching and learning and having a number of periods for face-to-face interactions with teachers. Besides, students had opinion on increasing computers for practical training and a collaborative effort in increasing the availability and affordability of internet services.

Discussion and Conclusion

With use of increased online learning, students in distance learning need ICT skills training in order to support them in the teaching and learning process. Distance learners use more of the student centred learning. The student decides what to learn, at what place and time to learn and how to learn. According to Sarkar (2012), the use of ICT in education promotes more student-centred learning settings where learners can become controller of their learning. The development of ICT in education leads learners to choose environment suitable for learning. With challenges related to ICT training opportunities, OUT have to increasingly creating opportunity for distance students learning students to access ICT services. On the other hand, OUT has to provide students with opportunity to decide on the best ways they can learn. In distance learning situation, students do not need to come at the University premises for teaching and learning to happen instead instruction can be obtained on the website or social media (Alestalo and Peltola, 2006; Attaran, 2007; Pena-Bandalaria, 2007; Oliver, 2003; Haddad and Jurich, 2002).

Therefore, some students can be in a position to keep working at the same time being able to pursue studies. As Sarkar (2012) shows, ICT in higher education is not a technique for educational development but also a way of socio-economic development of the nation (Oyovwe-Tinuoye and Adogbeji, 2013). It is becoming usual for students who face constraints such as employment, family responsibilities, and health issues to access campus which make them decide to study through the ICT enhance approach, which is online learning (Pelgrum, 2001; Kwacha, 2007 and Sarkar, 2012). The findings of this study indicate a need to creating ICT skills training opportunities for distance learners to benefit from the use e-learning in distance education. The use se of e-learning platforms facilitates flexibility through the use of student-centred learning approach. This calls for increasing strategic planning on how best to improve ICT skills training for the students in order to increase motivation to learn and improve the well-being of themselves and the national at large. There is a need to review curriculum to find out how best it is aligned with the needs of distance learners' learning needs. There is

also a need for distance teaching universities to increase availability of ICT infrastructure to distance learners. Thias can be done through collaboration, partnership, and increasing ICT learning opportunities to students especially in the use of different systems developed to support students learning including examination registration system, application system, Students Academic Records Information System (SARIS), E-learning system and the Library systems.

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