The Use of Electronic Technology by Facilitators at the Institute of Adult Education (IAE), Tanzania

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Abstract

This study aimed at examining use of electronic technology by facilitators at Tanzania's Institute of Adult Education (IAE). The study used descriptive research strategy, which employed both quantitative and qualitative research approaches. A sample of 30 facilitators drawn from a population of 61 facilitators of the IAE Headquarters were consulted aiming at examining their use of electronic technology in terms of application(s) in use, existing competencies, experienced challenges and offered in-house training(s). Questionnaires were administered to some respondents. Findings showed that use of electronic technology by IAE facilitators has now improved enormously compared to the situation in 2000s. Facilitators are ordinary users of computer applications like Microsoft Office Word processing and electronic mail (e-mail) but they are advanced users of WhatsApp and Facebook social media applications. Also facilitators use electronic technology via their personal computers and Internet at their own costs because the office has limited computers and Internet service. It is concluded that having all facilitators using computers and other electronic technology facilities regardless of the existing challenges is a remarkable step towards

professional development. Study recommendations, among others include making use of the existing social media platform of facilitators, establishing an electronic platform (e-platform) for facilitators, training of facilitators and enhancing one-to-one (1:1) computer ratio among facilitators with reliable Internet service provision at IAE.

Keywords: Electronic technology, computer, Internet, facilitators

INTRODUCTION

The Institute of Adult Education (IAE) is an autonomous public Higher Learning Institution in Tanzania responsible for implementing adult and non-formal education policies in the country (IAE, 2008). Since its establishment by an Act of Parliament Number 12 of 1975, under the then Ministry of National Education, IAE has been implementing various adult education programmes at post-primary and tertiary levels. The IAE is the only public institution in the country mandated to offer non-formal post-primary education and at the same time plays another role of a Higher Learning Institution. Currently, the Institute operates under the Ministry of Education, Science, Technology and Vocational Training and is fully registered under the National Council for Technical Education (NACTE) as a Higher Learning Institute. At its current state as a Higher Learning Institution, IAE offers Degree, Ordinary Diploma and Basic Certificate level programmes serving students from all over the country. IAE aspires to become a leading world institution that creates a continuously learning society by constantly designing, developing and delivering accessible quality life-long education programmes through blended learning (IAE, 2008). With this objective, mainstreaming electronic technology in its operations is necessary and that being the case, facilitators are mainly the driving force in spearheading this objective. Hence, they were the focus of this investigation.

In this study, use of electronic technology means use of computer-mediated facilities by facilitators to access, design, develop or share digital content related to their daily activities at IAE. Such facilities, among others, include computers, smartphones, removable devices, computer modems, and liquid crystal display (LCD) projectors. Therefore, information and communication technology (ICT) is considered as means to access electronic technology. In due regard, it is obvious that facilitators without ICT skills will not be able to access or use electronic technology while attending their duties.

Historically, IAE largely operated under print technology and facilitators were prompted to use print media in classroom facilitation, development of teaching and learning materials, library information search and communications. The country's ICT policy for Basic Education shows that IAE has been using print technology in offering its education programmes through Open and Distance Learning delivery mode (MoEVT, 2007, p. 8). In the early 2000s, IAE had computers in some offices that had a very limited access to Internet and with strict access by office secretaries only since they were the only staff with skills to use computers. Facilitators were computer illiterate because technology intervention at IAE was at its initial stage. At that time around, it was not only IAE who faced the challenges but also universities and other higher learning institutions had no adequate computer facilities and reliable Internet services, something that forced students and lecturers to access Internet service through internet cafés (MCT, 2003).

National e-Government Strategy of 2013-2018 recognises importance of e-technology in the public sector. According to clarifications given in e-government strategy, electronic technology evolution in Tanzania is expected to be in stages: The first stage being digital presence whereby government institutions like IAE are expected to electronically provide simple one-way information to their clients with limited interactions; the second stage being Interaction whereby government organisations are expected to use ICT to provide some degree of online interaction with their clients; the third stage being transaction stage whereby government organisations are expected to be able to provide capabilities and features that will allow clients to complete their transactions in full online without the need to visit the offices and; the last stage being transformation stage whereby government organisations are expected to have been fully networked and working together online at all levels (PO-PSM, 2013, p. 2).

In 2007, IAE recruited two ICT staff as the first initiative towards mainstreaming ICT in its operations. Following engagement of such staff, an ICT unit was established aiming at responding to the national ICT policy and enhancing use of electronic technology at the Institute. In 2013, the Institute developed an ICT Policy aiming at ensuring that ICT is entirely integrated into its operations (IAE, 2013). Moreover, in 2013, the Institute was connected to the national ICT broadband backbone (NICTBB) network to enhance access to ICT. Currently, the institute is in the process of establishing a computer networking system to improve the existing infrastructure so as to fully enjoy the NICTBB Internet service.

According to Akpan (2014), university lecturers have various tasks to accomplish like teaching, research and publications, assessing students' works, supervising students' research, mentoring students, attending conferences and providing community services, among others. In order for university lecturers to be effective and efficient, competence in electronic technology is inevitable. However, this is not always the case because at some universities and higher learning institutions, lecturers face some difficulties and struggle to use electronic technology in teaching and learning (Segoe, 2014). Fu (2013) argues that lecturers/facilitators are faced with critical challenges in using electronic technology. Some of these challenges include lack of in-service training, insufficient skills for managing teaching materials, lack of specific knowledge about technology, lack of recognition and encouragement, lack of motivation, lack of technical support and lack of financial support. Fu (2013) recommends that facilitators should be given full support in terms of technical skills development; financial support; exposure to well-established institutions; and professional development in electronic technology advancement.

At the Midlands State University (MSU) of Zimbabwe, use of e-technology by lecturers was made compulsory by mainstreaming e-learning in the University's operations (Chitanana, 2014). Thus embracing e-learning as a principal mode of instructional delivery was made the goal of the university and was stated in the MSU strategic plan. Chitanana (2014) adds that university policies had to then provide direction on how the university e-learning programme should continue. With this case of Midlands State University, use of electronic technology by lecturers is no longer optional but obligatory. Chitanana (2014) states further that at beginning stages of the innitiative, lecturers had know skills in using the electronic technology because most of them were using computers for the first time and had no formal training on use of electronic technology in teaching and learning. To overcome the situation, the university introduced a special training for lecturers in ICTs that eventually made them competent and confident in using the new technology.

Statement of the Problem

The researcher's interest in this study was motivated by the fact that IAE is among the old Public Institutions in the country that grew up principally in print technology till the current decade where it has been transforming itself from print to electronic technology. It is a fact that today's world of work and, in particular, at academic environment, operations are by means of electronic technology. This being the case, most academic institutions are striving to transform themselves from print to paperless technology (Mariki, 2011). Hence, facilitators or tutors in ODL institutions like IAE who were mostly oriented in print technology are struggling to get through the transformation (Segoe, 2014). Technology is growing very fast to the extent that facilitators are compelled to use electronic technology so as to cope with the situation. There have been some indicators for advancement of electronic technology use at IAE such as existence of more computers at IAE and large number of facilitators

using smartphones but this has not being researched. Therefore, it was the aim of this study to examine use of electronic technology by IAE facilitators so as to come out with findings and recommendations that will assist in strengthening use of electronic technology at the institute.

Purpose

This study aimed at examining use of electronic technology by IAE facilitators. It specifically focused on the use of electronic technology in terms of application(s) in use, existing competencies, experienced challenges and offered in-house training(s).

Research Questions

i) What electronic technology uses and competencies exist among IAE facilitators?
ii) What challenges are faced by facilitators in using electronic technology?
iii) Which in-house training programmes have recently been conducted to facilitators on use of electronic technology?

METHODOLOGY

Design

This study used descriptive research design so as to draw the actual picture of what is happening at IAE in relation to the use of electronic technology by facilitators (Igbo, Igbo, & Ayaogu, 2012; Ranga & Mhaka, 2016). Also descriptive design was preferred because it is effective in describing who is doing what, at what time, "where and how" (USC, 2016). Thus, it was applied to describe fact about the existing situation and practice at the time the study was conducted. Both qualitative and quantitative research approaches were used in searching answers for the research questions.

Sample and Sampling Procedures

A sample of 30 facilitators, 16 males and 14 females was drawn from a population of 61 facilitators of the IAE headquarters. Based on nature of this study, convenience sampling procedure was used to get the required sample of the study from each Academic Department of the Institute. It allowed the researcher to get respondents who were readily available and convenient at the time. Recently employed facilitators were not involved in the study because it was the researcher's idea to have those who have stayed with IAE for at least two years for validity purposes (see Mapolisa & Khosa, 2015, p. 104). The IAE top management was also not involved because they are regarded as employers in this case who are actually responsible for setting conducive working environment to facilitators. Figure 1 presents respondents' distribution by sex and their respective departments. Twenty seven (27) out of the sample of 30 facilitators responded to this study, twelve (12) female and fifteen (15) males.

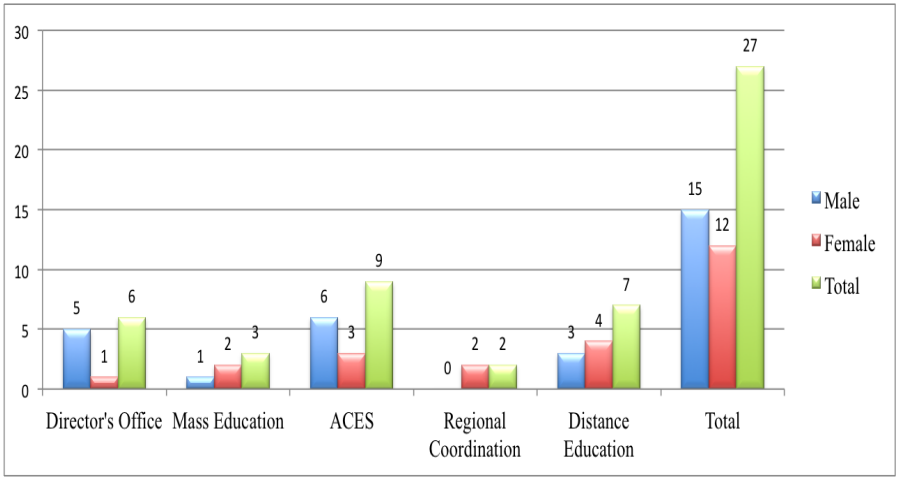

Figure 1: Respondents' categorical distribution by department and sex

As indicated in Figure 1, respondents were from each academic department of IAE to ensure departmental representation. The departmental representation is proportional to the size of respective departments in which 9 (33%) were from the largest department of Adult and Continuing Education Studies (ACES) followed by the second largest - Distance Education department 7 (26%) down to Regional Coordination department 2 (8%) – which is the smallest in size.

Data Collection Methods

The researcher used questionnaire and observation data collection methods. The questionnaire included both open-ended and close-ended questions so as to collect qualitative and quantitative data, respectively. Self-administered questionnaires were applied and occasionally, the researcher had to administer the questionnaires when necessary so as to ensure timely completion of the questionnaire as well as high response rate. Questionnaires that were returned were at 90 percent - response rate. Observation method was used mainly to collect qualitative data (Kawulich, 2005). The method was suitable for observing availability of computers in offices, their use by facilitators and use of other computer gadgets together with smartphones.

Data Analysis

Raw data were analysed manually by tallying on responses from each questionnaire to obtain frequencies. Open-ended questions were grouped and coded thereby tallying was applied to get frequencies. Analysed data are presented in tables and figures. Some qualitative data from questionnaires were quoted and presented in findings to get the voice of the respective respondents on the particular issue. Names of quoted respondents are not real, for anonymity reasons.

STUDY FINDINGS

Use of electronic technology by IAE facilitators

This section presents results on use of electronic technology by facilitators of the IAE in terms of access to Internet services, e-mail and social networks as well as use of computer-mediated facilities.

Access to internet services

Findings as indicated in Table 1 show that facilitators use various ways to access Internet service at work.

Table 1: How facilitators access Internet service at work (N = 27)

Responses	Frequency	Percentage
Via computer with my personal Internet service	23	85%
Via computer with office Internet service	4	15%
Via my smartphone	19	70%
Via Internet cafe	2	7%
I don't use Internet	0	0%

Findings in Table 1 indicate that all facilitators have access to Internet but through various means. The majority (85%) of facilitators access Internet computers with their personal Internet service. Also most (70%) facilitators use their smartphones to access Internet services. Only a small number (15%) of facilitators access Internet through the office and (7%) use Internet cafes.

Access to email and social networks

The study revealed that all respondents own an e-mail account and 13 (48%) of them, access their email accounts daily. The rest of respondents access their emails occasionally in a week. One respondent never visited

her email account. Table 2 presents the participants' responses on their frequency in accessing e-mail accounts per week.

Table 2: Respondents' frequency in accessing e-mail accounts per week

Responses	Frequency	Percentage
Daily	13	48%
Once a week	4	15%
Twice a week	2	7%
Thrice a week	2	7%
More than thrice a week	5	19%
Never	1	4%
Total	**27**	**100%**

The study also found that 26 (94%) of the facilitators own a social media account whereby 24 (88%), 12 (44%) and 1 (4%) are on WhatsApp, Facebook and Tweeter, respectively. Only one (4%) of the facilitators does not have a social media account. Of the total respondents, 15 (56%) said that they access application at any time when they are free, 10 (37%) said they access it every time when a message comes in and 2 (7%) access it once a day. These findings show that the majority of facilitators have access to e-mail, WhatsApp, Facebook and Tweeter applications but they access WhatsApp more frequently than all other applications.

Use of Computer-mediated Facilities

The study revealed that facilitators use electronic technology through their mobile phones to perform their duties. Each facilitator had a smartphone and others were found busy using phones in offices. One of the facilitators, Mr. Upara wrote that, "...use of smartphones nowadays is unavoidable because everyone uses WhatsApp to chat with friends, exchanging photos and getting various pieces of information on what is

happening in the country and elsewhere...I use the app for work as well." Another quote written by Ms. Chole reads that, "I use my smartphone to read or send e-mails because it is faster than a computer ... but mostly I use it on WhatsApp." The quotes show that facilitators mostly use their smartphones to interact with each other using WhatsApp and e-mails. Intensive use of WhatsApp among facilitators was the researcher's expectation since this is a widely used application in Tanzania compared to other electronic social networks.

This study indicates that facilitators have now gone further from not only using their smartphones in personal communications but also in official duties like searching and downloading information from the Internet. Also facilitators use smartphones to interact with their students and facilitate teaching and learning process.

> "I use computer in most of my office activities especially on word processing but I mostly use my smartphone to download information, visit websites and communicate with my students as well as fellow facilitators. I have sent assessments and learning materials several times to my students via their Facebook groups and WhatsApp network" (Mr. Zege).

When asked if they use computers in their official duties, all facilitators (see Table 3) acknowledged that they do. However, many (67%) facilitators use their personal computers in undertaking official duties. Table 3 presents facilitators' responses distribution on whether or not they use computers in their official activities.

Table 3: Facilitators' responses on whether or not they use computers in their official activities

Responses	Frequency	Percentage
Yes, I use my personal computer	18	67%
Yes, I use office computer	3	11%
Yes, I use both personal and office computer	6	22%
No, I don't use computer	0	0%
Total	**27**	**100%**

From Table 3, it is evident that with exclusion of 3 (11%) facilitators who solely use office computers, the rest [(67%) + 6 (22%) = 24 (89%)] use personal computers though some use both personal and office computers.

Facilitators' Competence in using Electronic Technology

Findings indicated that most facilitators are ordinary electronic technology users. A bit over half (55%) of respondents ranked themselves as ordinary users, while (30%) ranked themselves as advanced users. The rest (15%) ranked beginners in using electronic technology.

Facilitators' competence in using computers was also reflected on the kind of official activities performed by facilitators on computers. When asked to mention official activities that they normally do on their computers, facilitators just like Akpan (2014) cited before in this paper, mentioned several activities ranging from office to classroom activities. Most responses indicated that preparation of documents, searching for

teaching and learning materials from Internet and e-mailing are the most activities performed by facilitators on computers. Table 4 presents various official activities performed by facilitators on computers in the course of undertaking their duties.

Table 4: Official activities performed by facilitators on computers

Responses	Frequency	Percentage
Searching for teaching and learning materials	18	67%
Storing document	11	41%
Preparing documents	20	74%
Writing reports	5	19%
Preparing presentations	5	19%
E-mailing	11	41%
Presentations	5	19%

Challenges Faced by Facilitators in Using Electronic Technology at IAE

This study by means of observation revealed that ICT infrastructure is a big challenge because there was no Local Area Network (LAN) in place and therefore, the available few computers were not linked to one another. Other challenges as mentioned by facilitators are indicated in Table 5.

Table 5: Challenges faced by facilitators in using electronic technology at IAE

Responses	Frequency	Percentage
High cost involved in buying Internet service	9	33%
Lack of skills in using computer applications	8	30%
Unreliable Internet service	8	30%
Computer software security issues	4	15%
Outdated operating system	2	8%
Lack of Internet services in offices	7	26%
Inadequate office computers	11	40%
Poor printing services	3	11%
Unreliable power supply	7	26%
Inadequate LCD projectors	2	8%

Explaining more about the challenges, Mrs. Njui wrote the following,

> "There is neither office computer nor Internet service in my office. Therefore, it is challenging to prepare my lesson notes. Office Internet service is a nightmare here. This situation forces me to bring my personal laptop and mobile dongle/modem from home for Internet service. It is challenging and costly, I have to say."

In-house Training to Facilitators on use of Electronic Technology

Findings (see Table 6) indicated that few in-house training programmes on electronic technology have been conducted. Table 6 shows distribution on in-house trainings that have been conducted to facilitators in a period of not more than five years back.

Table 6: In-house e-technology trainings conducted to facilitators in recent years

Responses	Frequency	Percentage
Learning materials development	12	44%
Multimedia content development	11	41%
Basic computer applications	10	37%
E-learning	4	15%
None	6	22%

DISCUSSION

As reported before, this study aimed at examining use of electronic technology by IAE facilitators. The study revealed that facilitators use electronic technology and most of them use their personal laptops and Internet service from personal dongles including smartphones tethering hotspot to undertake official duties. On one hand, it is a message to the IAE management that Internet service and computers are inadequate. But, on the other hand, this shows the spirit and self-motivation among lecturers towards fulfilling their responsibilities at their own costs. If facilitators have been doing all official activities on their own computers, how would it be if office computers with Internet network were to be supplied to each one of them?

This study shows that facilitators are ordinary users of electronic technology but this is valid only when focusing on use of e-mails and Microsoft Office applications. On one hand, this is because more than half of facilitators access their e-mail accounts only once a week. But, on the other hand, all facilitators use WhatsApp social media daily and actually more than once a day. This makes them advanced users of electronic technology in this context. It implies that facilitators are not illiterate in electronic technology but interest, nature and type

of electronic application in context matter a lot. This means training of facilitators or any other initiative in promoting use of electronic technology should consider utilizing first the technology that is actively in use by most facilitators.

From the findings, it is evident that currently, things have changed. Facilitators are now using electronic technology to, a greater extent, rather than it was in early 2000s where only office secretaries were in a position to use computers. This could be partly because of some training programmes that have been offered or individual efforts on trying to cope with the world of technology. It should also be noted that the cost of accessing Internet in Tanzania went down by 50 percent in 2010 as a result of establishment of the "National ICT Broadband Backbone (NICTBB) [as well as] Eastern Africa Submarine cable System (EASSy) and Southern and Eastern Africa Communication Network (SEACOM)" (MWTC, 2016). In due regard, use of electronic technology especially in accessing internet services increases although some (33%) facilitators mentioned high cost to access Internet services as one of the challenges affecting them in using electronic technology. Apart from ICT training programmes, individual efforts and affordability of Internet services, the other obvious contributing factor to increase in use of electronic technology by facilitators is presence of office computers in some facilitators' offices. This helps facilitators to use electronic technology more frequently while at their own offices and become more competent as a result of daily practicing because practice is the key towards mastering any learning skill (Hodges & Scott, 2016; Mapolisa & Khosa, 2015). Some (40%) facilitators made it clear that computers are still inadequate (see Table 5). Fu (2013) cited before in this paper argues that some challenges in using electronic technology include financial support, lack of knowledge and technical support. Findings in this paper showed similar and more challenges, for example, lack of skills

in using computer applications, unreliable Internet services, inadequate office computers and high costs involved in purchasing personal Internet services. This calls for support from the Institute to ensure computer availability among facilitators. As a result, that will enhance more use of electronic technology and challenges will be kept at minimum.

CONCLUSION AND RECOMMENDATIONS

Use of electronic technology by IAE facilitators has improved enormously now compared to the situation in the early 2000s. Having all facilitators using computers and other electronic technology facilities regardless of the existing challenges is a remarkable step towards wider integration of electronic technology in their operations. The lesson learnt here is that self-initiative is the greatest capital towards success in electronic technology. However, to achieve success in use of electronic technology, the following recommendations are suggested:

Recommendations

i) As indicated in the study findings, 52% of respondents do not access their e-mails frequently and only 5% prepare presentations using computers. Also 30% of respondents reported that they lack computer application skills. Therefore, facilitators should be self-determined towards learning new skills in using electronic technology. This is because use of electronic technology is still very low by many facilitators at IAE.

ii) Use of WhatsApp and Facebook applications among facilitators is higher than use of e-mail services and other means of electronic communications. According to the findings, only one respondent had no WhatsApp accounts but the rest (88%) had accounts and access them on daily basis. In addition, 12 (44%) use Facebook frequently. Based on this

practice, on one hand, IAE should think of utilizing this already existing platform to enhance electronic technology use skills among facilitators. On the other hand, facilitators should attempt integrating WhatsApp, Facebook and other relevant social media applications in teaching and learning because the applications are within their reach. According to Hodges and Scott (2016), facilitators can innovatively use applications with the aid of computer-mediated facilities to prepare and share learning contents or instructions to their students to enable effective learning. Aspects like assessments, learning materials, group discussions, presentations, research works, question and answers, and many others can be well facilitated by social media applications.

iii) IAE should establish an e-platform that will require facilitators to apply their electronic technology skills to interact with fellow facilitators, students and management. In such a platform, facilitators will be required to send and receive information online. Therefore, they should have to login frequently enough during the day so as to access announcements, access management meeting reports, ask questions, clarify issues, submit reports and similar other aspects. Such platform will eventually improve facilitators' skills in using electronic technology due to daily mandatory computer interaction.

iv) Based on the fact that there are few training programmes conducted on electronic technology as indicated in Table 6 of the findings, IAE should ensure regular training stints of facilitators on use of ICT, especially on accessing basic computer applications like Microsoft Office, Internet, Intranet, emailing and searching online materials (see also Afshari, Bakar, Luan, Samah, & Fooi,

2009; Mapolisa & Khosa, 2015; Chitanana, 2014; Fu, 2013). IAE has to make such training programmes obligatory to all facilitators (see Segoe, 2014) to ensure effective teaching and learning.

v) Lastly, the Institute has to invest on ICT facilities like computers, Local Area Network, Internet service and subscription to online library databases. Such investments will motivate facilitators to use electronic technology more frequently to search for literature online, communicate among each other and share information with their students.

REFERENCES

Afshari, M., Bakar, K. A., Luan, W. S., Samah, B. A., & Fooi, F. S. (2009). Factors affecting teachers ' use of information and communication technology. *International Journal of Instruction, 2(1)*, 77–104. https://doi.org/10.1080/14759390000200096

Akpan, C. P. (2014). ICT Competence and Lecturers' Job Efficacy in Universities in Cross River State, Nigeria. *International Journal of Humanities and Social Science, 4(10)*, 259–266.

Chitanana, L. (2014). A change in University Lecturers' perception of e-learning tools for Instructional Delivery at Midlands State University: From techno-phobic to technology savvies. In *7th Ubuntu Net Alliance Annual Conference hosted by Zambia Research and Education Network, Lusaka, Zambia, 13-14 November 2014* (pp. 83–98). Gweru. Retrieved from https://www.ubuntunet.net/sites/default/files/uc2014/proceedings/chitananal.pdf

Fu, J. S. (2013). ICT in education: A critical literature review and its implications. *International Journal of Education and Development Using Information and Communication Technology*, *9(1)*, 112–125.

Hodges, T. S., & Scott, C. E. (2016). Creating Teachers' Digital Toolboxes through Modeling: Lessons Learned from Technology Rich Teacher Education Classrooms. *READ: An Online Journal for Literacy Educators*, *2(3)*, 22–44.

IAE. (2008). *Rolling Strategic Plan 2014/2015 - 2018/2019*. Dar es Salaam: Institute of Adult Education.

IAE. (2013). *IAE Policy for the use of Information and Communication Technology*. Dar es Salaam: Institute of Adult Education. Retrieved from http://www.iae.ac.tz/wp-content/uploads/2015/11/ICT-POLICY-edited_IAE_-CHAIRMAN.pdf.

Igbo, E. M., Igbo, R. O., & Ayaogu, J. C. (2012). Perceived Influence of Non-Formal Educational Programmes on Basic Academic Attainment of Teenage Mothers in Enugu State Nigeria. *Huria: Journal of the Open University of Tanzania*, *13*(Special), 293–302.

Kawulich, B. B. (2005). Participant Observation as a Data Collection Method [81 paragraphs]. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, *6*(2), Art. 43. Retrieved from http://nbn-resolving.de/urn:nbn:de:0114-fqs0502430.%0A%0A

Mapolisa, T., & Khosa, M. T. (2015). The efficacy of Information and Communication Technology (ICT) in Enhancing Quality Open and Distance Learning (ODL) Teaching: Zimbabwe Open University National Centre's Programme Leaders' Perceptions. *Journal of Global Research in Education and Social Science*, *3(2)*, 102–111.

Mariki, B. E. (2011). From print to electronic technology: Should it be a drastic move in ODL? A case study of Institute of Adult Education in Tanzania. *Zimbabwe International Journal of Open and Distance Learning*, 11–14.

MCT. (2003). *National Information and Communications Technology Policy*. Dar es Salaam: The Government Printer. Retrieved from http://unpan1.un.org/intradoc/groups/public/documents/unpan/unpan033693.pdf

MoEVT. (2007). *ICT Policy for Basic Education*. Dar es Salaam: United Republic of Tanzania. Retrieved from http://www.moe.go.tz/index.php/sw/publications/send/27-policy-sera/219-ict-policy-for-basic-education-2007

MWTC. (2016). *National Information and Communications Tachnology Policy*. Dar es Salaam: The Government Printer. Retrieved from http://mwtc.go.tz/uploads/publications/en1490101734-National ICT Policy 2016.pdf

PO-PSM. (2013). *Tanzania e-Government Strategy*. Dar es Salaam: United Republic of Tanzania. Retrieved from http://www.ega.go.tz/uploads/publications/130d4c2a171b40465b9af331bb58cce5.pdf

Ranga, D., & Mhaka, S. (2016). Role of information and communication technology (ICT) in open and distance learning (ODL): an analysis based on Zimbabwe Open. *Open and Distance Learning Journal*, (Special Issue), 102–117. Retrieved from http://www.iodlj.zou.ac.zw/ejournal/index.php/journal/article/view/123/127

Segoe, B. (2014). Tutor Support in an Open Distance Learning (ODL) Environment for Upgrading Teachers. *Journal of Human Ecology: International Interdisciplinary Journal of Man-Environment Relationship*, *48(1)*, 161–169. Retrieved from http://www.krepublishers.com

USC. (2017). *Organizing Your Social Sciences Research Paper: Types of Research Designs*. University of Southern California Libraries Research Guides. Retrieved from http://libguides.usc.edu/writingguide/researchdesigns.