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Editorial board

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The Purpose of the Publication

The Journal of Issues and Practice in Education (JIPE) is a refereed journal produced by the Faculty of Education of the Open University of Tanzania. It is published twice a year that is June and December. The journal is designed to inform both academics and the public on issues and practice related to the field of education.

The journal provides academics with a forum to share experiences and knowledge. It also informs the public about issues pertinent to their day to day educational experiences. Sharing information related to education is important not only for academic, professional and career development but also for informed policy makers and community activity in matters pertaining to the field of education.

Editorial

JIPE Vol.9 (2) of Dec, 2017 is a special release for peer reviewed papers presented during DEATA International Conference held at the University of Dodoma (UDOM) in March, 2017. It is comprised of 8 papers mainly focusing in the fields of parents' involvement in teaching and learning process; online learning experience at the OUT; engaging disability learners in technical, vocational and entrepreneurship education and women participation in Open and Distance learning. Other aspects addressed in this release are: students' awareness on the blended mode of teaching and learning; motivation and quality community education; teachers' professional malpractices and computer assisted concept mapping on academic achievement of students with hearing impairments. Other fields include reaching the unreached through moodle learning platform; distance learners support through ICT training and challenges of ICT integration among distance learners. It is the expectation of the Chief Editor that readers of this volume will gain much knowledge and understanding about education process during the epoch of ICT transformation, the time when one cannot separate between ICT and the teaching and learning processes.

Dr. Evaristo Andreas Mtitu

CHIEF EDITOR

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Effects of Computer-Assisted Instruction and Concept Mapping on the Academic Achievement of Students with Hearing Impairment in Ecology in Ibadan, Oyo State, Nigeria

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Abstract

This study investigated the effects of computer-assisted instruction (CAI) and concept mapping (CM) on the academic achievement of students with hearing impairment (SHI) in ecology in Ibadan, Oyo State, Nigeria. Three hypotheses were generated for the study while the pretest-posttest, control group quasi-experimental research design was adopted for the study. The treatment was cross examined with gender and academic self-efficacy among students with hearing impairment for a period of 8 weeks. The Ecology Achievement Test (EBAT, r = 0.67) and the Academic Self-efficacy Questionnaire (ASEQ, α =.79) was used for data collection. Data generated were analysed with Analysis of Covariance (ANCOVA) at p<0.05. Results revealed a significant main effect of treatment on the achievement of SHI in ecology; no significant interaction effect of gender and academic self-efficacy on the achievement of SHI in ecology and no significant interaction effect of treatment, gender and academic self-efficacy on the academic achievement of SHI in ecology. The study concludes that both CAI and CM have positive effect on the academic achievement of SHI in ecology but CAI has the highest significant effect on the participants. Based on the findings, it is recommended that biology and other science subject should be taught to SHI using self-learning, engaging and technologically appealing computer-mediated approach such as the CAI.

Keywords: Computer-assisted instruction, concept mapping, ecology, hearing impairment

Introduction

It has been observed in recent times that the role environment plays in a nation's development process cannot be over emphasized. Environment represents a wide range of external circumstances, conditions and the things that affect the existence and development of an individual, organism or group. However, there is now a wide appreciation of the damages being done to the environment through human activities. Researchers such as Aja (2005); Omofonmwan and Osa-Edoh (2008); Ikitde and Edet (2013) have associated environmental pollution with human activities and albeit persistent human interaction with the environment. More so, with attendant pressure on environment especially in the wake of improved technologies, environmental abuse and pollution is nevertheless heightened with corresponding effects on lives of persons with or without hearing impairment and other living organisms.

Persons with hearing impairment whose disability becomes evident in the context where communicative skills are needed, such individuals may grossly lag behind in the knowledge of keeping environment safe for the future by resolving fundamental issues relating to the current and future use of the world's resources. In other words, the absence or loss of hearing has a pervasive influence on an individual and the primary disability is communication difficulties; both receptive and expressive communication. Students with hearing impairment are heterogeneous group comprising of diverse and complex psychosocial characteristics, which have a significant impact on learning outcomes. According to Nikolaraizi and Theofanous (2012, students with hearing loss are often brought up in the environment where they have a limited access to language, reading and world experiences. Therefore, they develop poor schemata that affect negatively their ability to derive the meaning of a text especially in intermediate or higher grades when texts become scriptually implicit. So far, their understanding requires more background information. Based on this, it has been a point of call to stakeholders to educate their citizens irrespective of disabilities and create awareness through all channels of communication about the

fundamental knowledge of the environment and the tool to manage it effectively. This call for environmental education is hinged on the belief that having basic knowledge of science, its skills and process can improve the quality of life of persons with or without hearing impairment and increase the survival rate of the human race.

In search for a solution to solving environmental problems, ecology holds a unique place in this regard because it is the scientific study of life. Ecology is concerned with life and its processes and a good grasp of biological principles is necessary for human survival. In other words, ecology provides students with an understanding of the structure of living organisms and the relationship of these organisms with their immediate environment. Indeed, environmental ecology has received a lot of attention in recent times. More attention has come especially in the light of renewed campaign worldwide geared towards controlling and improving environmental problems to the survival of human race. A cursory look at the Nigeria situation reveals the need to educate everyone including students with hearing impairment about the environment, which suffers abuse on a daily basis.

In ensuring a safe environment devoid of pollution in Nigeria, the National Educational and Research Development Council (NERDC, 1994) and the National Policy on Education (FRN, 2004) have recognized and drawn up guidelines for the incorporation of ecological issues into the biology curriculum of the senior secondary school programmes. According to Ige (1998), ecology in the secondary school curriculum is one of the most interesting topics. However, teachers of students with hearing impairment rarely teach such topics because of difficulties associated with how to teach and explain some of the ecological concept, however, students with hearing impairment performs poorly in biology when they sit for the Senior Secondary Certificate Examination (SSCE). The chief examiner's report of the West African Examination Council (WAEC) in 2010 as well as Abimbola and Abidoye (2013) observed that there is an increasing yearly enrolment in science subject especially biology.

However, the performance of students including those with hearing impairment in the Senior School Certificate Examinations (SSCE) continues to decline. Research on problems of teaching environmental concepts in secondary schools in Nigeria according to Adu and Sheyin (2014) revealed that inadequacy of resources for teaching ecology, teachers' unsatisfactory use of resources and unsatisfactory performance in practical and field work were some of the factors militating against effective learning outcomes in biology. Ige (1998) and Sangodoyin (2011) as one of the causes of students' dismal performance in biology observed poor teaching method. Dismal performance was particularly noted in ecology. Based on the observation, conventional method of teaching, which involves the chalk-talk principles are not adequate and suitable for the teaching of environmental concept to students with hearing impairment in the 21st century classroom. The reason is that they have poor language skills with reduced opportunity for incidental learning. Therefore, they tend to be effective when used with visual, tactile and stimulating instructional materials that could compensate for the loss in sense of hearing.

Teaching sciences to students with hearing impairment require a series of influential teaching approaches in ways that promote meaningful learning, problem solving, and critical thinking for a diversity of students to increase motivation and achievements and to protect them against the negative effects of the rote-memory based educational system. All around the world, educators are becoming more aware of new teaching strategies and tools. Strategies and tools that can be used in the classroom with initiatives in teaching-learning that integrates the inquiry based learning with information communication technology, audio-visual interactivity packages, visual models using the Computer-Assisted Instruction (CAI) and Concept Mapping (CM) instructional strategies in an effort to aid learning. CAI is an instruction or remediation presented on a computer to illustrate a concept through attractive animation, sound, and demonstration (Yenice, 2006). CAI can be referred to as a self-learning technique usually offline/online, involving interaction of students with programmed instructional materials. Studies

conducted by researcher on the application of CAI on the learning outcome of students have revealed diverse results. For example, Muraina, Adeleke and Rahman (2011) examined the effect of computer-assisted instructional method on students' performance in the introduction to computer science and electronic data processing courses.They concluded that using computer-assisted instructional method does have significant effect on students' performance than conventional teaching method. That enforcing teachers to embrace it, are ways of increasing the educational value, promoting learning and providing students with good experiences.

Christina *et al*. (2006) studied the behavioural improvements associated with computer-assisted instruction for children with developmental disabilities using a pre-test/post-test design to determine acquisition of the targeted concepts using the computer software for all eight participants. The study of Christina *et al*. (2006) demonstrated that children with autism and other developmental disorders were able to learn receptive language, social and cognitive skills via CAI using the teachtown software program. These data were consistent with previous studies indicating that CAI is effective for teaching receptive language skills (Moore and Calvert, 2000). owever, Ahiatrogah, *et al*. (2013) found no significant difference between CAI and traditional groups on their achievement in Adhesives, a topic in pre-technical skills. They had compared the effects of CAI on the achievement of 59 junior high school students in pre-technical skills after exposing them to CAI and the traditional methods of instruction.

In a similar vein, concept mapping (CM) is an instructional tool that is currently gaining popularity in the field of science education. Bello and Abimbola (1997) noted that concept mapping is a product of recent advances in cognitive science and the new philosophy of science. Contemporary perspectives of cognitive psychologists and the new philosophers of science on cognition view learning as an active internal process of construction where the learner's prior knowledge plays a significant role in further conceptual learning (Ausubel, 1968; Ausubel and Hewson, 1986 and Novak, 1991).

Kinchin (2000) discussed the positive impact of using concept maps on instruction and learning in secondary biology education. Building on the researches earlier conducted, Kinchin (2000) demonstrated the relevance of concept mapping for teacher planning and preparing a lesson as well as creating an opportunity for meaningful learning on behalf of students. Kinchin (2000) observed a positive effect on students who used concept maps to revise and summarize the material. The study of Akeju *et al*. (2011) among a sample of 168 senior secondary school class-II physics students in Ekiti State, Nigeria, revealed that there is a significant effect of concept mapping instructional strategy on students' learning achievement.

Udeani and Okafor (2012) studied the comparative effectiveness of the expository and concept mapping instructional strategy of presenting secondary school biology concepts to slow learners using one hundred and twenty four biology slow learners. They were identified and randomly assigned to the expository group and concept-mapping group. The groups were post-tested after two weeks of teaching for any significant differences in their biology achievement. The analysis of post-test scores indicated that the group taught by the concept mapping instructional strategy performed significantly better than their expository group counterparts did. This finding was in accord with the findings of previous studies (Okebukola, 1990; McClure *et al*.1999; Zantinget *et al*. 2003 and Safayeni *et al*. 2005) which provided evidence attesting to the efficacy of concept mapping in facilitating meaningful learning among students irrespective of gender. Although, gender is one of the factors interacting with achievement in biology and other science subjects (Isa, 2005 also Ekwueme andUmoinyang, 2005) studies on how gender actually influences achievement are inconclusive. Some studies (Ifeako, 2005and Obeka, 2007) show that male students have higher achievements and interest scores in chemistry than females. This was attributed to sex-role stereotyping, masculine image of science and female socialization process. Contrary to the above findings, Ekwueme and Umoinyang (2005) reported that gender influenced achievement in favour of females. On the contrary, Danmole and Femi-Adeoye (2004) found no significant difference in

the achievement of students due to gender. Danmole and Femi-Adeoye (2004) revealed that achievement of both males and females can be affected by teaching and learning styles. It is based on this premise that this study examined the influence of gender on achievement in environmental concepts. According to Lagoke *et al*. (1997), the important factors that develop gender difference are sex role identification, culture and socialization. Boujaoude and Attieh (2003) reported better performance of female students in science subjects.

Irrespective of gender, a good academic performance is expected to be exhibited by a student after a period of study. Such academic performance may however be influence by students' self-efficacy. Self-efficacy is the individuals' assessment of their capabilities to organize and execute actions required to achieve successful levels of performance (Bandura, 1986). Hence, students' beliefs in their efficacy to regulate their own learning and to master academic activities determine their aspirations, level of motivation and academic accomplishments. Increased self-efficacy is accompanied by enhanced intrinsic motivation, the ability to sustain high levels of motivation and achievement oriented behaviour, persistence in the face of difficulties, and better problem solving (Bandura, 1997). Numerous studies demonstrate that efficacy beliefs are influenced by the acquisition of cognitive skills. However, they are not solely the reflection of them. For example in 1995, Compeau and Higgins developed and validated a 10-item instrument of computer self-efficacy (CSE) and identified that computer self-efficacy had a significant influence on computer-use outcomes, emotional reactions to computers, and actual computer use. Madorin and Iwasiw (1999) studied the effects of computer-assisted instruction on the self-efficacy of baccalaureate nursing students. The researchers used a nonprobability, convenience sample of second-year baccalaureate nursing students who were assigned randomly to experimental and control groups. The findings by Madorin and Iwasiw (1999) showed that a higher preclinical self-efficacy scores (p<.01) of the experimental group support the use of CAI as an important aspect of clinical education. This finding corroborates the assertion of Akçay *et*

al. (2006) who noted that CAI is a method that uses computers in a learning media to strengthens students' motivation, self-efficacy and educational processes.

Chularut and DeBacker (2004) studied the effect of concept mapping on academic achievement; self-efficacy and self-regulation of students in English classes as a second language was investigated among Seventy-nine ESL students using a randomized pretest-posttest control group design. The findings showed a statistically significant interaction of time, method of instruction, and level of English proficiency for self-monitoring, self-efficacy, and achievement. Similarly *et al*. (2013) investigated if concept mapping as a cognitive tool could contribute to improving self-regulation of students in a reading course. To fulfill the aim of the study, sixty university students from one of the universities in Iran were randomly assigned to two groups: one experimental (concept mapping) and the other control (conventional method). The results from the study of Khajavi and Abbasian (2013) revealed a significant difference between the two groups. The students in the experimental group out performed those in the control group on self-regulation in reading.

However, there are studies on CAI and CM with consideration to those students with hearing impairment. Students who have difficulty to expressing and understanding some basic biological and environmental concepts due to their inability to respond to auditory-verbal stimulus and little access to the regular curriculum of science. That happens so because majority of their teachers are lacking in the required sign language skills to effectively explain scientific concepts to them via sign language. Therefore, this study examined the effects of computer-assisted instructions and concept mapping on achievement in ecology among students with hearing impairment in Ibadan. The study sought to determine the moderating effects of gender and academic self-efficacy on the achievement in ecology among students with hearing impairment in Ibadan, Oyo State, Nigeria.

Hypotheses

HO$_1$. There is no significant main effect of treatment on the achievement of students with hearing impairment in ecology.

HO$_2$. There is no significant interaction effect of gender and academic self-efficacy on the achievement of students with hearing impairment in ecology.

HO$_3$. There is no significant interaction effect of treatment, gender and academic self-efficacy on the achievement of students with hearing impairment in ecology.

Methodology

The study adopted the pretest-posttest, control group quasi-experimental research design using a 3x2x2 factorial matrix with treatment at three levels (Computer-Assisted Instruction, Concept Mapping and Control Group). The treatment was cross examined with gender and academic self-efficacy among students with hearing impairment at two levels respectively.

Table 3.1: 3x2x2 Factorial matrix for the study

Treatment	Academic self-efficacy		Gender	
	High	Low	Male	Female
Computer-Assisted Instruction	11	3	9	5
Concept Mapping	8	6	8	6
Conventional Method	4	9	6	7
Total	**23**	**18**	**23**	**18**

Participants

The participants were senior secondary school II students with hearing impairment who were purposively selected from three integrated special schools in Ibadan, Oyo State. This is because they were more stable, they were not preparing for examinations and they

had been exposed to some biological concepts. The researcher employed a simple random sampling technique to select participants for the Computer-Assisted Instructional Package and Concept Mapping Instructional Strategy.

Data Collection and Analysis

The Ecology Achievement Test (EBAT) and the Academic Self-efficacy Questionnaire (ASEQ) was used for data collection. The EBAT is a 50-item, 5-option multiple-choice objective test, developed and validated by the researchers based on following sub-topics: The ecosystem, functioning ecosystem, food chain, food web, pyramid of numbers as well as pyramid of energy. The reliability coefficients of the EBAT, was determined using the kuder-Richardson'sformula-20 (KR- 20) and the value obtained was 0.67.The Academic Self-efficacy Questionnaire (ASEQ) being a modified version of Morgan-Jinks students' self-efficacy scale (1999) used by Ogundokun (2007) and Awoyemi and Keshinro (2013) was used for this study. The scale is a 20-item questionnaire, which has a five-response format ranging from almost never to almost always. Some of the items of the scale read as follows: (1) I work hard in school, (2) I could get the best grades in class if I tried enough, Scores of 5, 4 and 3 indicates high self-efficacy while 2 and 1 indicate low self-efficacy. The reliability of thecademic self-efficacy scale was determined using Cronbach Alpha and it was found to be reliable at 0.79.

All participants (students with hearing impairment) were pretested on the first week with the Ecology Achievement Test (EBAT) and the Academic Self-efficacy Questionnaire (ASEQ). Participants were assigned to two experimental groups (Computer-Assisted Instruction and Concept Mapping) and control group and taught the same content for a period of six (6) weeks. The treatment session lasted for 90 minutes during each session. Participants in the control group were given a placebo treatment. In other words, they were taught using the conventional mode of teaching. They were encouraged to read their books always.The posttest was conducted on the eighth (8th) week of treatment. Data generated were subjected to statistical

analysis using both the descriptive statistics as well as inferential statistics to determine the achievement of students with hearing impairment in ecology when exposed to Computer-Assisted Instruction and Concept Mapping instructional strategies. The inferential statistics of Analysis of Covariance (ANCOVA) was used to test the null hypotheses at p<0.05.

Results

Hypothesis 1: There is no significant main effect of treatment on the achievement of students with hearing impairment in ecology.

Source	Sum of Squares	df	Mean Square	F	Sig.	Eta Squared
Corrected Model	490.414	12	40.868	6.113	.000	.724
Intercept	194.492	1	19492	29.091	.000	.510
Pre Achievement	.771	1	.771	.115	.737	.004
Main Effects:						
Treatment	297.142	2	148.571	22.223	.000	.614
Academic Self-Efficacy	15.232	1	15.232	2.278	.142	.075
Gender	15.365	1	15.365	2.298	.141	.076
2-way Interactions:						
Treatment x Academic Self-Efficacy	26.893	2	13.446	2.011	.153	.126
	34.817	2	17.409	2.604	.092	.157
Treatment x Gender	1.415	1	1.415	.212	.649	.008
Academic Self-Efficacy x Gender						
3-way Interactions	21.079	2	10.540	1.576	.225	.101
Treatment x	187.196	28	6.686			
Academic Self-	5727.000	41				
Efficacy x Gender	677.610	40				
Error						
Total						
Corrected Total						

The results from Table 1 above show that there was a significant main effect of treatment on the achievement of students with hearing impairment in ecology ($F_{(2,38)}$ =22.223, P<0.05; η^2 = 0.614). Therefore, the null hypothesis 1 is not accepted. This implies that the treatment has a significant main effect on achievement in ecology among participants with an effect size of 61.4%. To further establish and determine the actual source of the observed significant main effect in ANCOVA, a Scheffe Post Hoc Analysis was carried out on the posttest mean score of the three groups as presented in Table 2.

Table 2: Scheffe Post Hoc Multiple Comparison of the Mean Difference of Treatment and Control Groups on the achievement of Students with Hearing Impairment in ecology

* The mean difference is significant at the .05 level.

Note: CAI = Computer Assisted Instructions

  CM = Concept Mapping

The Post Hoc multiple comparisons in Table 2 show the performance of the participants in all the groups. The direction of decreasing main effect of treatment on the achievement of students with hearing impairment in ecology is computer assisted Instruction, concept mapping, control group. It further shows that computer Assisted Instructions was more significant than the concept mapping

(I) (J) Treatment Treatment Groups Groups	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
				Lower Bound	Upper Bound
CAI	6.3571*	1.0213	.000	3.7555	8.9588
CAI	6.8132*	1.0407	.000	4.1620	9.4644
	-6.3510*	1.0213	.000	-8.9588	-3.7555
Control	.4560	1.0407	.909	-2.1952	3.1073
CM	-6.8132*	1.0407	.000	-9.4644	-4.1620
CM	-.4560	1.0407	.909	-3.1073	2.1952
Control					
Control		12			
CAI					
CM					

instructional strategy among students with hearing impairment.
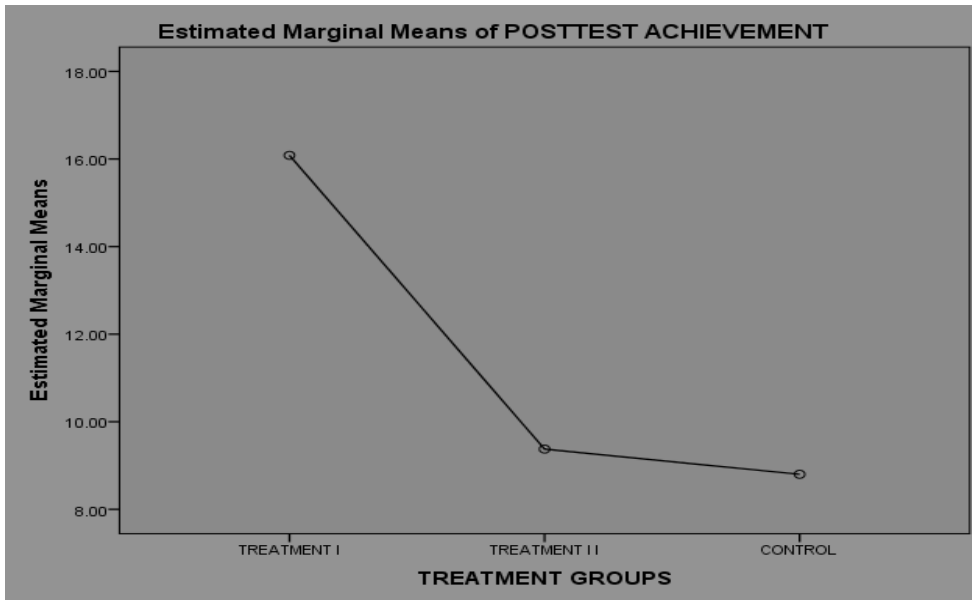
Figure 1: Estimated marginal mean scores of treatments and the control groups.

Figure 1 revealed that computer-assisted instruction had the highest mean value of 15.429 followed by concept mapping with a mean value of 9.071 while the control group had a mean score of 8.615. This implies that students in the computer-assisted instructional group had the highest contribution to observed significant difference in the treatment followed by the concept mapping instructional strategy and the least observed significant difference is from the control group.

Hypothesis 2: There is no significant interaction effect of gender and academic self-efficacy on the achievement of students with hearing impairment in ecology.

The results from Table 1 show that, there was no significant interaction effect of gender and academic self-efficacy on the

achievement of students with hearing impairment in ecology ($F_{(1,39)}$ = 0.212, $P>0.05$; η^2 = 0.008). Therefore, the null hypothesis 2 is not rejected.The mean scores of the participants based on gender and academic self-efficacy are presented on figure 2 below.
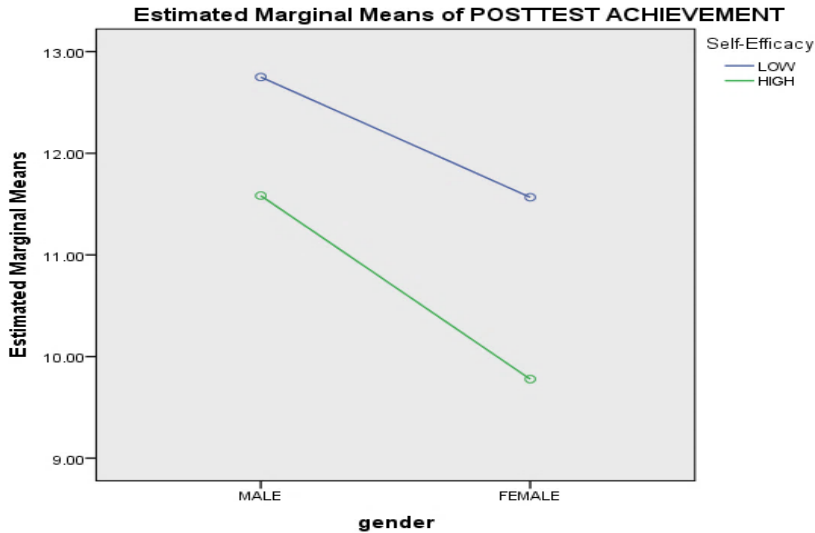
Figure 2: Mean scores of the participants based on gender and academic self-efficacy

Figure 2 above shows the mean scores of genderand academic self-efficacy. It shows that male students with hearing impairment with low academic self-efficacy had a mean score of 10.000 while their counterparts with high academic self-efficacy had a mean score of 13.214. Similarly, female students with hearing impairment with low academic self-efficacy had a mean score of 10.444 while their counterparts with high academic self-efficacy had a mean score of 9.555. This mean score however, is not statistically significant on the achievement of students with hearing impairment in ecology. However, it could predict that male students with hearing impairment would have a high achievement in ecology.

Hypothesis 3: There is no significant interaction effect of treatment, gender and academic self-efficacy on the achievement of students with hearing impairment in ecology.

The results from Table 1 above shows that there was no significant interaction effect of treatment, gender and academic self-efficacy on students with hearing impairment achievement in ecology ($F_{(1,39)}$ = 1.576, P>0.05; η^2 = 0.101). Therefore, the null hypothesis 3 is not rejected. Figure 3 below shows the graphical representation of the estimated marginal meansbased between treatment, gender and academic self-efficacy.
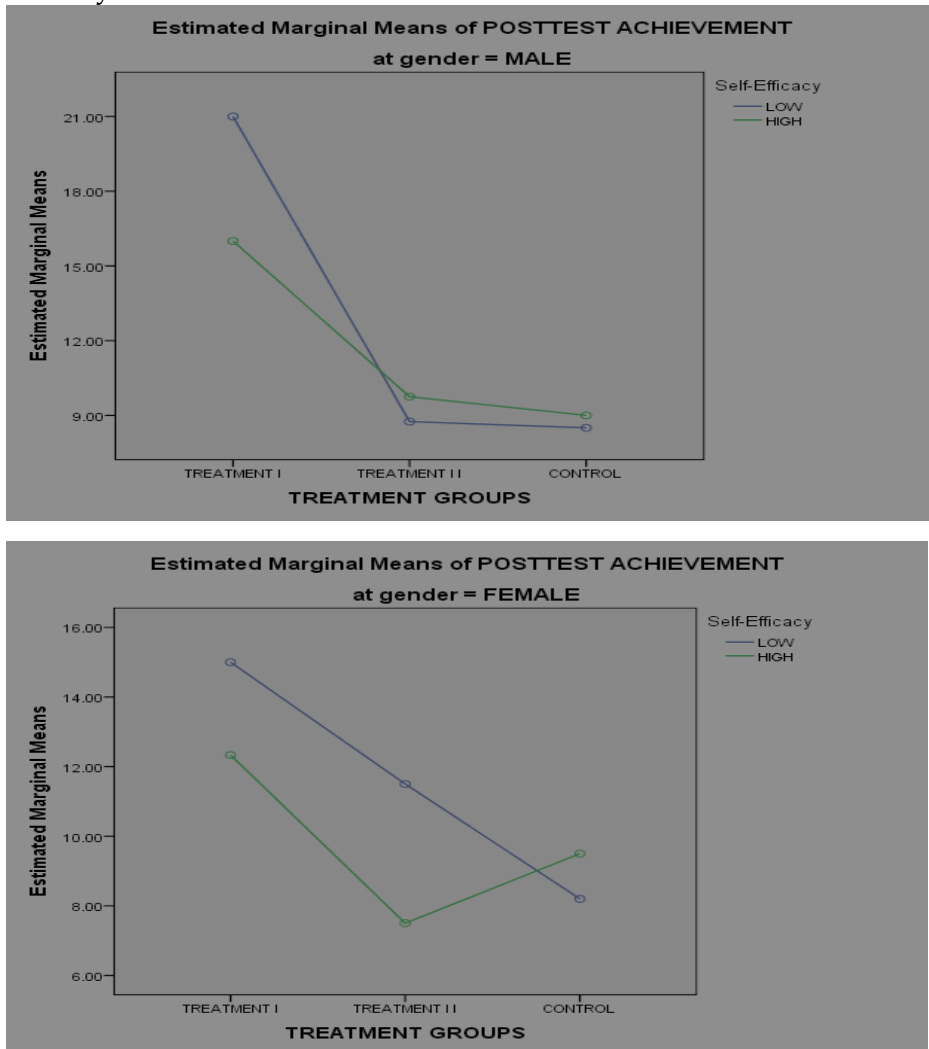

Figure 3: Graphical representation of the estimated marginal means based between treatment, gender and academic self-efficacy

Figure 3 shows the discrepancies in achievement in ecology among male and female students with hearing impairment in Ibadan, Oyo State, Nigeria. The graph reveals a downward slope (from CAI to CM and to the control group) in the achievement in ecology of male students with hearing impairment irrespective of their level of academic self-efficacy. Similarly, female students with hearing impairment who had low academic self-efficacy had a sharp downward slope from treatment group I to treatment group II and to the control group. A downwards slope was also observed between the achievement in ecology of female students with hearing impairment who had high academic self-efficacy but there was an upwards slope between the female participants who had high academic self-efficacy in the treatment group II and the control group. This observed phenomenon may be due to the zeal shown towards the learning process by thosefemale participants who had high academic self-efficacy in the control group.

Discussion of results

The findings revealed a significant main effect of treatment on the achievement of students with hearing impairment in ecology. Therefore, the null hypothesis 1 is not accepted. This implies that the treatment (both computer-assisted instruction and concept mapping) has a significant main effect on achievement in ecology by students with hearing impairment. These findings corroborate that of Moore and Calvert (2000); Christina *et al*. (2006) and Muraina *et al*. (2011) who examined the effects of computer-assisted instructional method on students' performance in different capacities and found that the use of CAI was effective for high academic performances. More importantly, their studies observed that using teaching activities that involves student's interactions with technological application in the classroom promotes meaningful learning outcome, problem solving skills, critical thinking, increase motivation and achievements. Okebukola (1990); Kinchin (2000); Akeju**,** Simpson**,** Rotimiand Kenni (2011) as well as Udeani and Okafor (2012) observed positive effect of concept maps on achievement of students in science subjects, to revise and summarize study materials. Udeani and Okafor (2012) studied the comparative effectiveness of the expository and concept mapping

instructional strategy to determine the achievement of slow learners in biology concepts and found out that those taught by the concept mapping instructional strategy performed significantly better than their expository group counterparts did. However, the current study negates the findings of Ahiatrogah *et al*. (2013) who found no significant difference between the achievement in pre-technical skills of 59 junior high school students who were exposed to CAI and conventional teaching strategies.

The result from Table 1 about hypothesis 2 found no significant interaction effect of gender and academic self-efficacy on the achievement of students with hearing impairment in ecology. Therefore, the null hypothesis 2 is not rejected. Although, mean score is not statistically significant on the achievement of students with hearing impairment in ecology, itt could predict that male students with hearing impairment would have a high achievement in ecology. This study supports Bandura (1986,1997) who stated that self-efficacy is the individuals' assessment (irrespective of gender role) of their capabilities to organize and execute actions required to achieve successful levels of performance, their aspirations, level of motivation and academic accomplishments. Compeau and Higgins (1995) showed higher preclinical self-efficacy scores by their study participants irrespective of sex roles support the use of CAI as an important aspect of clinical education. Akçay *et al*. (2006) also noted that methods that use computers in learning strengthens students' motivation, self-efficacy and educational processes.

The results from Table 1 about hypothesis 3 show no significant interaction effect of treatment, gender and academic self-efficacy on students with hearing impairment achievement in ecology. This implies that gender and academic self-efficacy are not a major determinant in whether or not students with hearing impairment should be exposed to ecology when exposed to computer-assisted instructions and concept mapping instructional strategies. In other words, when students with hearing impairment are exposed to learners-centred educational instructions (such as the computer-

assisted instruction and concept mapping) there is a tendency of enhanced academic achievement, most especially in biology and other related sciences. This finding is in line with the studyby Ige (1998), Basturk (2005), Christina *et al*. (2006), Yusuf and Afolabi (2010), Muraina, Adeleke and Rahman (2011), Sowunmi and Aladejana (2013) and Abimabade (2014) who stated that the use of computers and other innovative instructional strategies in a classroom setting cannot be over-emphasized. More so that computer usage as an educational aid has been effective in stimulating student's interest and in providing individualized tuition at the students own pace and direction. On the contrary, the findings of the current study do not conform to that of Boujaoude and Attieh (2003). Ifeako (2005) and Obeka (2007) who reported that male students have higher achievements and interest scores in chemistry than females. The duo (Ifeako, 2005 and Obeka, 2007) attributed their findings to sex-role, stereotyping, masculine image of science and female socialization process.

Conclusion

The study investigated the effect of computer-assisted instructions and concept mapping on the achievement of students with hearing impairment in ecology in Ibadan, Oyo State, Nigeria. The study revealed that both instructional strategies (CAI and CM) had positive influence on the achievement of students with hearing impairment in ecology. Therefore, students with hearing impairment can be taught effectively by using the two strategies. Between the two instructional strategies, the study revealed that the computer-assisted instruction is a more effective teaching strategy for teaching ecology. The study also concluded that gender and academic self-efficacy are not a major determinant in whether or not students with hearing impairment should be exposed to ecology when exposed to computer-assisted instructions and concept mapping instructional strategies.

Recommendation

Based on the findings of this study, it is recommended that:

- Students with hearing impairment in the biology classrooms and other science subject should be motivated to use self-learning, engaging and technologically appealing instructional strategies such as the computer-assisted instruction (CAI) and concept mapping (CM) so thattheir usage will not serve as a burden or waste of time.
- Concerted effort should be made by school administrators and the Ministry of Education to provide schools of students with hearing impairment with enough funding for the purchase of necessary materials like ICT facilities that will improve the learning outcomes in biology.
- Pre-service teachers should also be trained to gain new skills for facilitating learning in a technology-rich constructivist-learning environment.

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The Contribution of Moodle Platform in Reaching the Unreached People: A case of the Open Univeristy of Tanzania

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Abstract

This paper focuses on the role of Moodle platform on reaching the unreached people. The main objective of this paper was to evaluate the contribution of Moodle learning system on educating people living in different geographical location in and outside the county. Specifically, the paper establishes the perception of learners towards Moodle platform; establishes the benefits of Moodle platforms to learners and determines challenges facing Moodle platform learners' and tutors. The study involved 14 postgraduate students enrolled in the Faculty of Arts and Social Sciences (FASS) in the Open University of Tanzania (OUT). 2 Moodle technicians and 3 course instructors. The study adopted descriptive research design. The data was collected using questionnaires, interviews and direct observations. The findings revealed that enrolment and retention of students have increased and different categories of people are enrolled at the OUT as studies do not disturb their work. Despite the fore mentioned benefits, the challenges facing moodle platform include learners negative attitudes towards Moodle platform, little understanding of the Moodle platform by some lecturers; shortage of power or electricity block-out interfere the system; unavailability of the OUT web page or network connectivity; resistance in adopting the Moodle platform by staff members who do not want changes. From the findings, the study recommends that more training should be provided to faculty staff and students. Moreover, OUT should ensure stable connection to OUT-web and make sure the internet is available all the time.

Key words: Moodle Platform, Perception, The Open University of
Tanzania, Reaching, Unreached

Introduction
Open and Distance Learning (ODL) is becoming an important and
alternative mode of study to meet the huge unmet demand for
education at all levels and especially for higher education (Nyandara,
2012). With technologies, challenges facing distance learners are
lessened to some levels. Application of technology should be used as
a tool to provide a platform for achieving objectives and standards
(Reigluth, 1999). Information and Communication Technology (ICT)
has opened a new avenue to globalization in education (Aguele,
2014). In higher education levels, ICTs are being used for developing
course material; delivering content and sharing content; facilitate
communication between learners, teachers and the outside world.
ICT has also enabled the creation and delivery of presentation and
lectures; academic research; administrative support and student
enrolment (Mondal and Mete, 2012).

Learning Management Systems (LMS) have been widely adopted by
higher learning institutions globally for over a decade (Mtebe, 2015).
LMS are now installed in many higher education institutions in Sub-
Saharan Africa including Tanzania. The web-based LMS are intended
to support teaching and learning activities. Web-based course
management system is the latest pedagogical tool based on
technology (Zakaria and Daud, 2013). Moodle is a course
management system, which enables delivery of online education/
courses. It allows instructors to plan and designate activities for the
students (Zakaria and Daud, 2013). With Moodle platform, learners
can learn anywhere or wherever s/he is, interacting with themselves
and their teachers. LMS consist of various features that enable faculty
members to share learning material as well as providing interaction
with their students both synchronously and asynchronously (Vovides
et al. 2007). The most widely adopted LMS in the region are
Blackboard, Sakai, Knowledge Environment for Web-Based Learning
KEWL and Moodle (Unwin *et al*. 2010) The Open University of
Tanzania adopted Moodle platform. Application of technology

should be used as a tool for providing a platform for achieving objectives and standards (Reigluth, 1999 also Zakaria and Daud, 2013). Moodle is also known as Learning Management System (LMS) or Virtual Learning Environment (VLE) that is a protected on learning space. A VLE usually combines multiple tools and activities for teaching and for organizing learning. In contrast to online providers that offer a single blog, wiki or open, public forums and chats; the Moodle VLE combines all such communication tools in one space. Moodle is an open source of learning management system that is provided freely and can be run on many operating systems (Adesope and Ahiakwo, 2016). Moodle is an acronym for Modular Object Oriented Dynamic Learning Environment.

It is free to download, change, share, improve and customize to whatever you want it to be. It is basically used for online or hybrid courses but can be used to supplement a face to face course. Moodle was developed by Martin Dougiamas as part of his PhD in Education thesis (Dougiamas and Taylor, 2003). The underlying philosophy of Moodle is maximum instructor control and minimal administrator control (Dougiamas and Taylor, 2003). Moodle is based on the philosophy of socio-constructivist pedagogy, which encourage discovery and provide collaborative activities (Zakaria and Daud, 2013). However, Moodle allows instructors to plan and designate activities for their students. Students are given time to read the materials uploaded in the moodle, and then respond to assignments and discussions. The interactions are among the students themselves and between students and lecturers.

Literature Review
The Open University of Tanzania and Moodle Platform
The Open University of Tanzania (OUT) is the first University in East Africa region to offer educational programme through Open and Distance Learning (ODL) mode. Thus, the OUT is an ODL government institution with the mission of providing quality and affordable education for all. Since 2001, the Open University of Tanzania has been running a number of postgraduate programs, which lead to the awards of Postgraduate Diplomas, Masters and

PhD degrees. The number of students admitted per annum at postgraduate level has increased from 150 in 2001 to 3,149 in 2014/15 (OUT, 2015). The university has five faculties, which are Faculty of Arts and Social Sciences (FASS), Faculty of Business Management (FBM), Faculty of Education (FED), Faculty of Science, Technology and Environmental Studies (FSTES) and Faculty of Law (FLAW).

Faculty of Arts and Social Sciences (FASS) is the pioneer of Moodle platform at the university. It was the first faculty to transform its teaching from evening and executive mode to Moodle kind of teaching. Through Moodle platform, learners can easily interact with the course instructors more often than ever before. Through Moodle system, learner can continue doing all work while interacting with fellow students as well as course instructors. FASS is now using Moodle platform as its main delivery mode to all undergraduate and postgraduate programmes. Moodle platform is still a new mode of study, which needs strong and aggressive advertisement in order to capture clients' attention from the experience gained in different regions, Moodle platform is a good LMS as both tutors and students interacts. Reading materials are uploaded in the Moodle platform in which students read them, interact themselves under the guidance of the lecturer, there after actual teaching or face-to-face sessions follows.

Study Rationale
There has been an exponential expansion of Open and Distance Learning (ODL) all over the world (Gilroy *et al*., 2001). ODL has been an alternative to conventional universities. The demand for education has gone up due to population increase, as the result conventional universities failed to enroll all students with qualifications, as the solution, the OUT become an alternative. The OUT is an ODL institution, which use blended mode of delivery mixing distance and limited face-to-face sessions. Moodle platform was introduced as a way of taking on-board all students residing in remote areas and those at proximity to the university. Under normal ODL, it was difficult to conduct face to face sessions in regions with few students. As the result, these students were denied face to face sessions, which

was a requirement to complete their studies. With Moodle Platform face to face was declared option as student could interact in the system. Moodle is a very effective virtual learning environment. With moodle, teachers and students are notified of new forums, new posts, assignments uploaded in the Moodle, quizzes, assignment and other tasks. Ceteris peribus, the moodle platform has no geographical boundaries provided there is improved technology (ICT). With all these arguments, there is a need to ascertain the contribution of Moodle platform in reaching the unreached people living in remote areas. For this case, this paper ought to examine the contribution of Moodle Platform in reaching the unreached people. The objectives of this study were to: (i) examine lecturers and students perceptions towards Moodle platform, (ii) find out the benefits of Moodle platform (iii) determine challenges encountered in the application of Moodle platform.

Methodology

This study adopted a descriptive research design to find out the contribution of Moodle platform in reaching the unreached people. A descriptive research design was opted for because it allows description of issues in details and it accommodates narratives. The population of the study comprised of 14 postgraduate students, 3 course instructors and 2 ICT technicians who were randomly selected from the Open University of Tanzania in Dar es Salaam. Simple random sampling technique was applied in the selection process. The instruments used for data collection included structured questionnaires, and interviews Ms Excel and content analysis for data analysis where data were presented in tables and figures. The data collected were also presented in frequencies and percentages. The Likert scale was used to capture lectures and students perceptions towards Moodle platform. The Likert scale ranged from agree, neutral and disagree.

Findings

Demographic Information of Respondents

Table 1 shows respondent's demographic information. In this study, 52.6% were male and 47.4% were female. Employment status shows

that 94.7% were employed in different areas, of 5.3% of the respondent were not employed. The other information presented in the table is the programme pursued by respondents.

Table 1: Respondents Demographic Information (n=19)

Respondents Profile	Classification	Respondents	Percentages
Gender	Male	10	52.6
	Female	9	47.4
Types of programme	MA NRAM	2	10.5
	MSW	2	10.5
	MA ICD	2	10.5
	MA Kiswahili	2	10.5
	MTPM	2	10.5
	MA History	1	5.3
	MCED	2	10.5
	MSc Economics	1	5.3
	MA M&E	2	10.5
	Lecturers	3	15.8
Employment status	Yes	18	94.7
	No	1	5.3

As depicted in Table 1, students involved were postgraduate pursing various programmes and majority 97.4% were employed.

Perceptions and Experiences towards Moodle platform
Perception is the way people think about something, while experience is the knowledge (skills) or mastery of an event or subject gained through involvement in or exposure to it (Webster, 1959). Experience is also the way people are familiar or used to something. This section focuses on the perception of students and lecturers on the use of Moodle platform for learning (Table 2). In this regard, the perceptions are grouped into positive and negative perceptions. Moodle platform enable learners to learn before actual teaching, increase enrolment as

students can learn wherever they are, and it is flexibility for learners to ask whatever the problem encountered.

Table 2: Perceptions of Lecturers and students towards Moodle Platform

Perceptions	Agree	Neutral	Disagree
Moodle encourage students to read	14 (73.7%)	4 (21)	1 (5.3%)
Increase enrolment	1 (5.2%)	9 (47.4%)	9 (47.4%)
Enable learners to learn before face to face	14 (74%)	5 (26%)	0
It has no geographical barriers	14 (74%)	3 (16%)	2 (10%)
Convenient to learners	11 (58%)	5 (26%)	3 (16%)
Learning materials are regularly updated	15 (79%)	2 (10,5%)	2 (10,5%)
Internet connectivity (availability)	3 (16%)	5 (26%)	11 (58%)
Computer accessibility	4 (21)	7 (37%)	8 (42%)
Course content are organized logically throughout the course	15 (79%)	4 (21%)	0
Availability of learning support	16 (84.5%)	2 (10,5%)	1 (5%)
Availability of instructors in online sessions	9 (47%)	7 (37%)	3 (16%)
Results are available in time	17 (89.5%)	2 (10,5%)	0

Moodle platform encourage both lecturers and students to read
The findings indicated that, the majority (73.7%) of respondents agreed that Moodle system encourages students to read. This implies that, students have to read in order to answer quizzes, assignments and participate in discussion forums. This is also supported by responses from interviews. For example, one student interviewed said this,

> *……since reading materials are in the Moodle system and without reading them no way you can be able to answer*

> *assignments, answer term papers and participate in different forums, reading is a must. With this argument, Moodle system encourages students to read…...*

One lecturer interviewed had this to say, "

> *…. Lecturers have to read and be prepared before face to face sessions because students would have read what is to be taught before the face to face sessions, otherwise lecturer(s) may be asked questions by students but fail to respond….."*

Overall, Moodle platform encourage both tutors and student to read.

Moodle platform increase enrolment

When respondents were asked to comment on the premise that, Moodle platform increased enrolment, 47.4% were uncertain, were neutral. It was so because respondents did not have access to enrolment data for comparison. The same 47.4% of the respondents disagreed with the premise that, Moodle platform increased enrolment. Only 5.2% of the respondents, the lecturer commented that, Moodle platform had increased enrollment by saying that,

> *"before Moodle system, my program attracted 10 students, with Moodle system the number has almost thrice, this year enrolled students are 28.*

The Moodle system enables learners to learn before face-to-face sessions

Students can access reading materials in the Moodle before meeting with lecturer to discuss callenging areas. The majority of the respondents (74%) agreed that, the Moodle platform enabled learners to access and read before face-to-face sessions (Table 2). However, 26% of the respondents were neutral, were uncertain whether Moodle systems enabled learners to learn before face to face sessions or not.

With Moodle platform, no geographical limitation

Moodle platform is not affected by geographical location. Distance is not a problem in Moodle platform as learners can learn wherever s/he

is. S/he does not need to come to class as it is used to be in conventional universities. Student can interact with tutor wherever they are, using mobile phone and internet provided network is available. When respondent were asked to rate if Moodle platform has no geographical barriers, 74% of the respondents agreed that there was no geographical barrier with Moodle system (Table 2); 10% of respondent disagreed while 16% were neutral, did not know whether Moodle system had geographical barrier or not. One student interviewed had this to say,

> ……*Moodle is suitable as learners can learn wherever they are, they have not to come to class, instead internet has bridged the gap…..*". Lecturer had this to say, "*With Moodle platform large geographical location is covered as students in remote rural areas and outside the country can learn through this system*.

Convenient to learners

Convenient means allowing someone to do something easily or without trouble or hindrances. Moodle platform allows learners to engage in more than one activity. When respondents were asked to comment on convenient of Moodle system to their activities, 58% agreed that Moodle platform is convenient mode of study to them, where 16% disagreed (see Table 2). However, 26% of the respondents were not sure whether the Moodle was convenient to them or not. One student interviewed said this,

> "*Moodle platform is convenient to me because I am employed; I have to attend work at the same time studying. With Moodle this is possible*".

Another respondent had different view,

> "*it is not convenient to me because I need to have a computer which is very expensive and internet access which is also difficulty here at Serengeti National Park*".

Learning materials are regularly updated

The findings indicated that, most of learning resources posted in the Moodle platform are regularly updated timely. This implies that, the instructors were adding new materials and updating learning resources they post in the system regularly. When respondents were asked to rate if learning resources were regularly updated and references were current and relevant, 79% of the respondents agreed (see Table 2). When students were asked to provide comments regarding learning resources, the majority indicated that instructors were updating learning resources such as posting new notes, new assignments; new discussion forums and quizzes. New resources were posted in the system as new cohort or intake starts.

Internet connectivity or availability

Internet connectivity and availability is the blood of the Moodle system, without which Moodle system is defunct. About 58% of the respondents had no access to reliable internet connection (see Table 2). However, only 16% of the respondents agreed that they had stable and reliable internet access because they were residing in urban areas, while 26% were uncertain about internet accessibility. The most affected students were those using internet connection in their offices or at home using modem. Sometime the system is very slow which takes long time for one to get what is needed. One of the students interviewed had this to say,

> *"My employer does not allow workers including me to use the office internet or computer for private activities including studies".*

Computer access

The majority of respondents (42%) had no access to computer as shown in Table 2. Most students commented that, they have to travel some kms to access computer services for typing their work and submit it to instructors. About 21% of the respondents had access to computer as they live close to the university premises where they could use computer in the university library. One of the students interviewed had this to say, *"Have to get a computer from my neighbor*

for typing assignment, hove to pay some money fir that". However, 37% of the respondents were neutral, uncertain about computer access (see Table 2).

Course content are organized logically throughout the course

Course content is very important to learners. It gives learners knowledge and skills. When respondents were asked to rate the appropriateness and sequence of content and learning activities within the course, more than two-thirds of the participants (79%) agreed while only 21% were neutral, were not sure whether content is appropriate or not (see Table 2). Moreover, when asked if all modules (Knowledge areas) were covered in the course content uploaded in the system 82% agreed, 10% were neutral. Only 8% disagreed (Figure 1). One student interviewed said that, "*All knowledge areas contain what is to study per course; it is in line with the course outlines*".
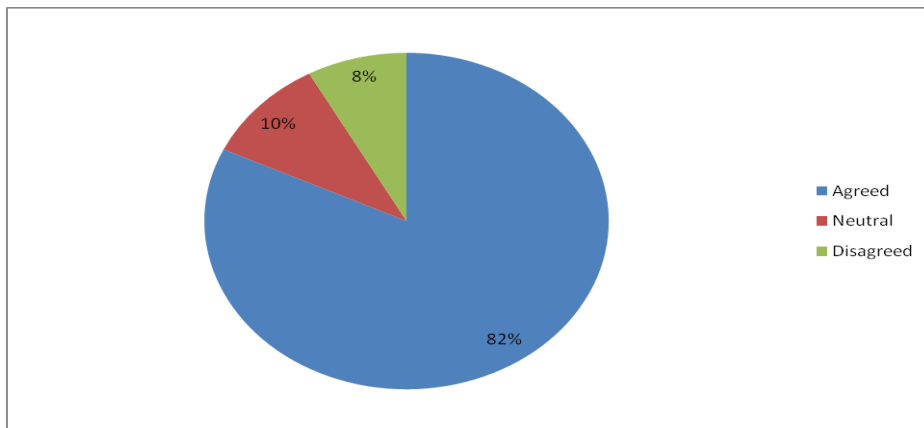
Figure 1: All Modules or knowledge areas were covered in the course content uploaded in the Moodle system

Availability of learning support

Respondents were positive on learning services provided prior and during course delivery. 84.5% of the respondents agreed that lecturer, IT technicians and other university workers were supportive to them in case of any problems or advice asked for while 10.5% of respondents were not sure of availability of learning support.Only 5% disagreed on the availability of learning support. Some of the libraries did not have enough reference books and students were unable to

access online resources. When respondents were asked if they were able to access online resources from the library, 40.4% of respondents agreed; 5.8% were undecided and 53.8% disagreed (Figure 2). Likewise, when asked if there were enough reference books at the centres, the majority of respondents (over 80%) disagreed.
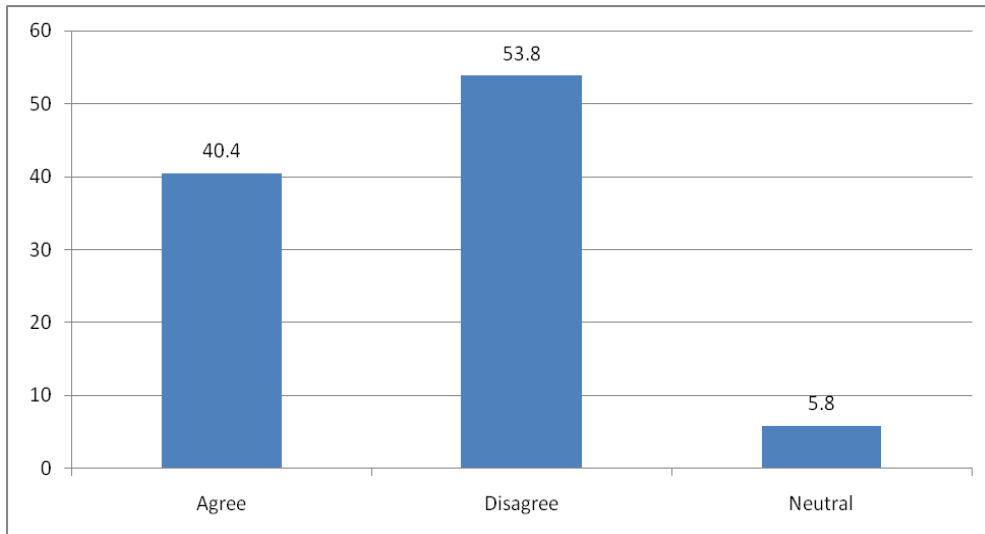
Figure 2: Convenient access to online learning resources

Availability of instructors in online sessions
Moodle platform require active interaction between instructor(s) and student(s). When the respondents were asked how often, instructors appeared in online sessionsthe majority of respondents said instructors were not available in most of live chats. For example, one student said that, "In m*ost of the time, lecturers are not available online during session hours*". Another student said that, "*lecturers are taking long time to respond to their queries*". However, nearly half of respondents (47%) agreed that instructors were participating in asynchronous discussion forums, and were providing timely and meaningful feedback while 37% of respondents were neutral and 16% disagreed. On the other hand, students suggested that face-to-face sessions should be increased from three days to at least five days. For instance, one respondent suggested that, "*….the college should increase allocate more time for face to face in the learning centre to give lecturers ample time to teach*".

With Moodle platform results are available in time

Before the operation of Moodle system at the OUT, complains loss of results was a major problem. Students were not able to get their results in time. With Moodle system and strictness of the Directorate of Examination Syndicate, complains on lost results have been lowered to almost zero. Overall, respondents were positive on the uploading of their results in SARIS on time. The majority of respondents (89.5%) agreed that, Moodle system facilitated the process of uploading results in the SARIS on time. 10.5% of the respondents were uncertain, nothing has changed, the results were uploaded as it is used to be. The information technology technician interviewed had this to say,

> *"Students answer assignments, term paper and other tasks in the Moodle system. Marking are done on the Moodle system and the results are kept in the system for many years, in case results are not found, it is easy to retrieve the results in the Moodle platform and upload them in the SARIS".*

Technical issues

When respondents were asked if they encountered any technical difficulties when participating in Moodle platform or blended learning delivery, almost 68% said YES, while 32% said NO. When the students were asked to explain some of the difficulties they were facing in Moodle platform, the majority of them ascribed it to be inaccessibility of PDF and Video clips. For example, one student said, *"…… there are some materials which are not downloaded while you want to"*. Similarly, another student said, *"….. Some pdf files and video clips are not shown or playing"*. However, many respondents indicated that, CDs were useful and effective in providing an alternative means to access learning resources. Moreover, most of course notes, videos clips and animations were accessible on CDs. As shown in Figure 3, 95% of respondents agreed and 5% disagree that CDs were effective and courses were accessible.
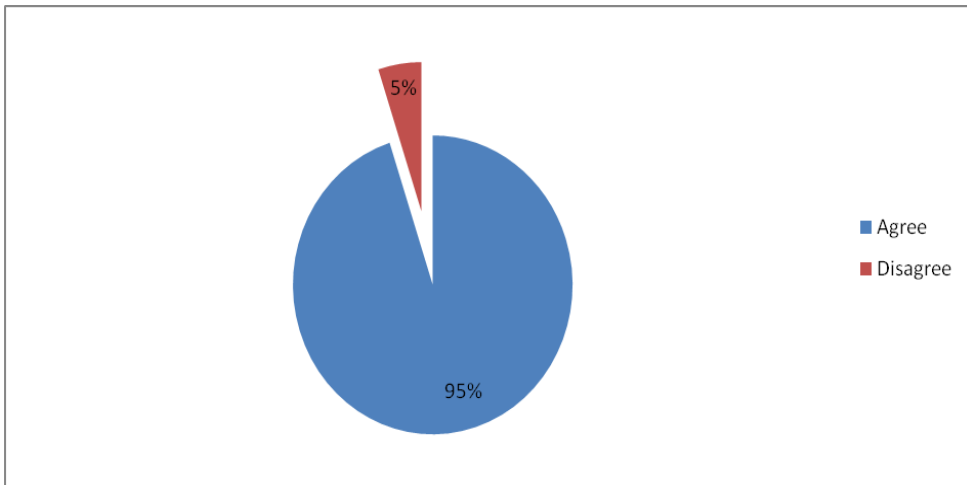
Figure 3: Accessibility and effectiveness of CDs

Advantages of Moodle platform
Respondents listed various benefits of Moodle platform in learning as presented in Table 3.

Table 3: Summary of benefits from the application of Moodle platform

S/no	Advantages for the application of Moodle system	Frequencies	Percentages
1	Lecturers, learners and IT experts are active in the Moodle platform all the time.	17	89.5
2	Provide room for interaction between students themselves and with their lecturers/tutors.	18	94.7
3	It is very good your fellow students, as well as lecturer can challenge learning system as you. You can be directed to come back in case you go astray.	12	63.2
4	Moodle is beyond comparison; it is the best ever; imagine one is sick; s/he can interact using his	10	52.6

	smart phone, I-pad or Laptop. Learners can study wherever s/he is, in the bus, on the bed or elsewhere, moodle is marvelous.		
5	It is good for employees as you kill two birds with one stone i.e. working at the same time engaging in studies. You don't need to leave your job/employment for attending studies as in the case of conventional universities.	7	36.8
6	It is very convenient for every age group, professionals, business people, farmers, pastoralist and others; it is user friend system to everyone.	6	31.6

Findings in Table 3 show that, 89.5% of the respondents reported that Moodle system influence lecturers, learners and IT expert to be active all the time in the Moodle platform. Lecturers have to post assignments, discussion and quizzes in the system, while students have to respond to the tasks posted in the Moodle lecturers are guiding the process. Almost all respondent (94.7%) agreed that, Moodle platform provides a room for interaction between students themselves and with their lecturers/tutors.

Moodle platform helps lecturers to provide students with things to cover before coming for face-to-face sessions. Before face to face, student will be aware of what to be covered during the face-to-face session and be able to pre-determine the difficult areas, which will be emphasized during the face-to-face sessions. About 63.2% of the respondents agreed that, Moodle system is a good learning system as one can be challenged and criticized by fellow students, as well as lecturers. A student can be directed to come back in case s/he goes wrong or posts a wrong answer. With Moodle platform, students are

free to post their arguments supporting or not supporting comments from their colleagues and from the lecturers. One student interviewed said that, "*One day I was appointed to provide a modal answer to one question, my colleagues criticized my answer and at the end I found that I was wrong, I had read wrong books*".

As depicted in Table 3, 52.6% of the respondents were of the opinion that, Moodle platform is beyond comparison; it is the best ever; imagine someone is sick; s/he can interact with others using smart phone, I-pad, Laptop or any other devise. Learners can study and learn wherever s/he may be. Moodle is marvelous. A student taking MA Kiswahili said this,

> "*I was sick admitted at Mnazi Mmoja Hospital and I had to submit assignment, the deadline was near, what I did was to ask my friend to bring my laptop, I did the assignment and submited it before the deadline*".

In conventional universities, if you are sick, you have to postpone submitting assignments. The study also found that Moodle is a good learning system for employees as reported by 36.8% of the respondents. Working at the same time studying is possible with Moodle platform. One does not need to leave a job/employment for attending studies, as is the case in conventional universities. One student working with TANAPA had this to say,

> "*I applied studies at one of the Conventional University in Tanzania, but I was denied permission for studies by my employer, then I applied at the OUT, I was given permission as I am doing my work as usual. I am expecting to graduate this year*".

So far, about 31.5% of the respondents agreed that Moodle system is very convenient for every age group, professionals and business people. It is a user-friendly system to everyone. Overall, people interviewed declared that, Moodle platform is a system suitable for learning and teaching. It is a revolution in education delivery.

Challenges facing Moodle Platform in OUT

Although the initiative of Moodle platform in Tanzania is blossoming at fast speed, it is important to note that there are some challenges that might prevent the smooth or further growth of the platform. 58% of the 19 respondents said that, cost involved in Moodle platform is one of the challenges facing Moodle delivery system (Table 4). Learners must invest money in the technology applied in Moodle platform. Learners must purchase or own various devices like smart phones accepting whatssap, I-pad and laptop, modems and have money to recharge the modem in order to access information (internet). access library materials, interacting with others and be able to participate in discussions. One of the students interviewed said that,

> *"Cost involved in the technology is a challenge; before I started studies, I had no computer, modem or smart phone. After enrolling in the MA NRAM program I was forced to invest 1,530.000/= to buy computer (Tshs 1,100,000/=); smart phone (Tshs 400,000/=) and modem of Tshs 30,000/="*.

This sum of money is much at start, as you pay once.

Table 4: Challenges facing Moodle platform

S/no	Challenges	Frequency	Percentages
1	Technology (Buying computer, I-pad, smart phone)	11	58
2	Unreliable infrastructures, power or electricity cut	15	79
3	Unavailability or instability of the OUT web page or network connection	12	63
4	Learners negative attitude and perceptions towards Moodle platform	8	42
5	Students and staff has little	5	26

	understanding of the Moodle platform		
6	Members who do not want changes continue to resist the platform.	4	21
7	Age limit, people with high age are reluctant to accept changes.	3	16

The second challenge facing Moodle platform is unreliable infrastructure. Infrastructure to support Moodle platform is still a challenge to most areas in Tanzania. This challenge was supported by 79% of the respondents. Issues like internet or network connection, computer and associated facilities; electricity in some areas is not available to users. One of the student taking MSc. in HACD who had terminated studies, was asked why termination, he had this to say this,

> *"I decided to terminate studies due to inaccessibility of internet. I joined the program when I was in Dar es Salaam, then I was transferred to Mkuranga. In Mkuranga, the internet connection is a problem, very difficult to get network, I tried several time but in futile. As the result I decided to terminate studies".*

For Moodle platform to work smoothly, reliable internet connectivity is necessary. Since urban area is well connected to internet, the Moodle system favored areas with internet network and excludes areas, which have not. In this case, urban learners benefit more than their counterpart in rural areas. Another challenge mentioned by respondents was unavailability of the OUT web page or poor network connection as agreed by 63% of the respondents (Table 4). It was noted that internet accessibility is not stable in some places, mainly remote ones. The student taking MA Kiswahili interviewed in Ilala district has this to say,

"I commended the OUT for embarking on Moodle system, the problem with Moodle platform is internet; internet is very slow and sometimes is not accessible or available. He is employed and mainly accessing computer during working hours, this time the internet is very slow because, this is the time where many people are using internet. Despite this challenge, I enjoyed Moodle system. The lecturer interviewed said that, the problem with Moodle platform is internet connectivity, which affects both students and lecturers".

The perception of both tutors and students towards Moodle platform was mentioned by 42% of the respondents (Table 4). Any change must face resistance; tutors have their reasons for not accepting the Moodle platform. One of the lecturers interviewed said that,

"Moodle platform will stop lecturers going to teach in the regions which in turn we will not get money i.e. per diem". The second tutor said that, *"I am a computer illiterate how can I teach using Moodle, my eyes are not ok? Moodle is for you youth".* One of the students had perceptions that, "*Moodle is difficult because I have no computer and my knowledge with computer is not good, I used to take work to stationeries, type them , ask them to print, then I take it to my supervisor*".

Lack of expertise and experience in Moodle are other challenges. In order for a person to apply moodle, appropriate knowledge is needed. The two days set for moodle training is not enough for serious issues like academic. More days are required for Moodle training. Un-readiness of staff to use Moodle platform is also a challenge. The lecturer interviewed commented that,

"ICT instructors should circulate friendly manual which I believe they have to course instructors to remind them on some technical parts such as how to mark and grade students' tasks".

Another challenges mentioned was, some students and staff have little understanding of the way Moodle platform works as agreed by

26% of the respondents (Table 4). However, 21% of the respondents continue to resist the platform, they do not want changes. They prefer blended Model (executive, evening and distance). Old or aged people are wise, but people with high age were reluctant to accept changes that Moodle system. 16% of the respondents mentioned their eye as a problem to them. They cannot read on the computer screen, thus, Moodle is not suitable to them.

Discussions

This paper reports on the contribution of Moodle platform in reaching the unreached people. The study revealed that Moodle platform has increased the possibility of people acquiring high education than before. Before starting of Moodle platform at the OUT, people (students) were unable to enroll for further studies because of their responsibilities. Under conventional universities, attending lectures regularly is necessary, with ODL or Moodle platform is an option. Interaction is done without been in direct contacts with media like internet and computer. Review of literature have shown that computer and internet can be used in distance education to systematically complement course delivery, facilitate access to course and resources, improve interaction and communication with students and for provision of feedback to students and support (Nihuka, 2010).

Infrastructures supporting Moodle platform is still a challenge to most countries in Africa. Issues like network connection, computers and associated facilities, electricity in some countries are not available to users (Nihuka, 2010). The ICT infrastructures and facilities are still inadequate, but the prevailing issue of broadband connection and availability of high bandwidth through National Research and Education Networks (NRENs) is believed to solve the ICT infrastructure in terms of broadband connectivity. Unfortunately, while solving the issues of broadband connectivity, electricity is becoming a scarce resource in most of African countries. The students interviewed indicated that, they had knowledge and skills related to internet for browsing of resources, email and for sending documents as attachments. Similar results were also reported in

previous studies by Abdel-Wahab (2008). Knowledge of using internet is necessary for students because it facilitates searching of resources for students studies on the web (Nihuka, 2010). It enables important communication between lecturers and students and among students themselves (Pena-Bandalaria, 2007). It allows provision of feedback to students on their learning. ICT experts plays crucial role in providing support to students on the use of the technology (Pena-Bandalaria, 2007). It is therefore through ICT that distance education programs are provided to the learners in their remote social and geographical location.

This initiative has led to an increasing interactivity between students and other ODL personnel. Through the internet and mobile phones, technology has assisted the learners to enjoy the services of the ICT personnel. Through ICTs, students can seek clarification on issues bothering on their program and get reply immediately.   It was found that, some students lack knowledge and skills on the use of computer and internet. This hinders students searching materials in the net and doing tasks provided by lecturers. Knowledge of internet is necessary for distance learners because it facilitates searching for resources on the   web (Nihuka 2010). These benefits are relevant to OUT because of the wide spread of the student population all over the country. In Moodle platform, skills and knowledge on computer and access to internet is the prerequisite because without it students cannot learn.

The challenge of infrastructure for Moodle platform was looked at. Investment in the use of ICT in distance education is an ideal endeavor, which must be supported by everybody in the institution. According to Koohang and Durante (2001) knowledge and experiences of some forms of technologies have great influence on perceptions regarding whether or not to use technologies in education. This means that students' decision to use computer and internet in education for learning depends on their perceptions about the benefits of using such technologies. The results of this study have demonstrated that, students benefit by using computer and internet in distance education at the OUT. The results of this study have also shown that using computer and internet in distance education

(Moodle platform) makes students more responsible for their learning. This means that, students are able to access various sources including internet unlike before. With Moodle platform, students feel more responsible for their learning as opposed to depending on lecturers for learning resources and other academic needs.

According to Siritongthaworn *et al*. (2006). students agree to use e-learning technologies such as computer and internet because they are convenient in terms of access time and place. The results of this study have shown that, the application of e-learning technologies (computer and internet) in Moodle platform have increased enrollment and access to education. The results of this study have demonstrated that students' awarenessthat the use of computer and internet in distance education have the potential to enhance their learning. Students also know that the application of these technologies facilitate easy access to resources (learning material), assignments and course outlines. This realisation is not unique in this study because numerous studies have reported similar results (Kochanga and Durant, 2003). However, students positively perceive that, web-based distance learning promote students learning (Kochanga and Durant, 2003).

In the light of the results of this study and my own experience on e-learning implementation, this study has highlighted the potential of using computer and internet for education at the Open University of Tanzania. The current efforts towards e-learning integration should be appreciated and systematically monitored for effective implementation to realise success. The results of this study imply that students' knowledge and skills on computer, internet and their perceptions must be seriously considered during course(s) designing for e-learning delivery. We may not be able to begin with all students in every course/programme but certainly with a few who seem to be technology-literate.

Conclusions and Recommendations

The paper has provided information on the role of Moodle platform in reaching the unreached people. Before the introduction of Moodle

platform, it was difficult, sometimesimpossible to run evening or executive sessions in regions or centers with less than 10 students. With Moodle platform, it is possible for students to learn even if it is one student. Because of this study, it is concluded that, Moodle platform is a tool for teaching at the university as student and lecturers and students themselves do interact. With Moodle platform, universities and institutions have opportunities to bridge the gap and provide access to education to all regardless of distance. This can be through mobilization of technologies that are appropriate for tutors and learners. Moodle platform is among the delivery mode, which needs strong and aggressive tutors and students. This platform has improved delivery of education at OUT. It has solved the problem of learning materials to some extent as reading materials or resources are part of Moodle platform. With Moodle platform students are free to study wherever they are, provided have computer and internet accessibility.

This paper recommends the following: the university should ensure availability and access to internet all the times. Students and lecturers should use internet in the late hours or early in the morning, as this time the internet is stable and fast as few people are using internet. Students should download reading materials, print them and read them offline when there is no internet. Students can also respond to tasks or assignments given and post them when the internet is available. Where there is no internet student can read the printed materials, respond to assignments on paper or type the work on the computer, and then submit the work when there is internet connectivity. In case of difficulties, students are free to contact tutors and ITs experts for help. Experts should be available to assist Moodle users all the time. Electricity is another challenge to Moodle users. It is advisable to work hard when there is power. Alternatively, students can use solar or generator to produce power as a substitute to electricity. The study recommends that more training should be provided to faculty staff and students. Moreover, OUT should ensure stable connection to OUT-web and make sure internet is available all the time.

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Assessing Students' Awareness of the Blended Learning: A case Study of Open University of Tanzania

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Abstract

This paper presents the findings of the study that assessed students' awareness of the Blended Mode of Learning (BML) in ODL context, Open University of Tanzania (OUT) as a case study. Specifically the study assessed the level of students' awareness on BML, examined the usefulness of BML to OUT students and lastly identified challenges facing students in learning through BML. The study was mainly qualitative by nature. The study also employed a phenomenology research design. Data were collected through both telephone and face-to-face interviews. Population of this study involved all postgraduate students from Faculty of Arts and Social Sciences who pursue their studies through BML. Moreover, the study employed a sample of forty (40) continuing postgraduate students. The named sample was collected through convenience and snowball techniques of sampling. In this study, data were analyzed qualitatively by forming themes and sub-themes. The study findings revealed that most of students are not well informed of the concept BML apart from the fact that it is the mode of learning they use in their studies. However, students seem to be well informed of MOODLE as an on-line learning platform of the BML. Students credited positively the usefulness of BML as compared to other learning modes used by OUT. The findings further indicated BML meets students' learning expectations. Moreover, findings revealed a number of challenges impeding the effective use of BML. Finally, the paper concludes that BML is useful as an instructional and learning mode in ODL context.

Key words: Distance learning, Blended Mode of Learning, Online learning, Face to face instruction.

Introduction

The Open University of Tanzania is a public institution mandated to conduct its academic programmes leading to the award of certificates, diplomas, undergraduate and postgraduate qualifications using open and distance learning methods. The main function of OUT as an ODL institution is to provide opportunities for higher education to a broader segment of the population (OUT, 2006). The institution has its headquarter in Dar es Salaam and it operates through a network in all regional centers in Tanzania Mainland and Zanzibar. In fulfilling its instructional role, traditionally, the OUT used print study materials. Later, this went hand in hand with the use of audio-tapes and then, the use of CDs where learners were required to register for courses in a particular academic year. Then, they were given course outlines and reading notes in form of the named technologies.The provision of study materials was accompanied with some days of face-to-face sessions where tutors met students for clarification of difficulty areas, and in the recent years. Kissassi (2013) noted that Students Progressive Portfolio (SPP) has now replaced face-to-face activities. The above named mode of ODL instruction requires the OUT students to study on their own while there is little interaction amongst students and between students with course instructors.

In trying to address this ODL instructional pitfall, in 2015/2016 academic year the OUT particularly the Faculty of Arts and Social Sciences (FASS) devised an innovative mode of instruction to all postgraduate programmes. This involved teaching and learning through Blended Mode (BM) where students learn through e-learning platform called MOODLE (Modular Object-Oriented Dynamic Learning Environment). The adoption and use of MOODLE as a learning system is the result of the university's effort for enhancing the use of ICT in teaching and learning hence replacing traditional mode of instruction (OUT, 2013). This is to say, transformation has been made by improving quality in T/L by blending the learning methods used by the OUT with online learning. The moves towards BML are a global move as most higher education institutions turn to it. This is recognized as one of the greatest trends in education and

training today. This has led to a point that Blended Mode becomes the popular mode for delivery in distance education context (Drossos *et al*. 2006). It has been proved that the use of computers in learning communities enabled learners to engage in shared learning activities (Holmes and Gadner, 2006). With blended mode, the distance between learners and tutors is minimized as it enhances student-tutor interaction and increase students engagement in learning through discussions moderated by tutors and assignments. Hence, BML has the potential to transform higher education (Garrison and Kanuka, 2004 also Haythorthwaite and Andrews, 2011).

In supporting the usefulness of the BML, Skill and Young (2002) thought that the mode is one of the most effective new educational strategies. Therefore, the use of blended mode tries to join the best features of face-to-face T/L with the best features of online T/L, thus optimizing achievements of learning objectives by applying the right learning technologies to match the right person at the right time (Singh and Reed, 2001). The above positive credits and results in the pilot FASS programmes regarding the use of the BML led to OUT in this academic year 2016/2017 to adopt the approach to all of its non-degree, undergraduate and postgraduate academic programmes. Blended Mode of learning has just been introduced in all OUT academic programmes in 2016/2017 academic year. What remains unknown and thus become the motive of this paper is the level of awareness about BML amongst OUT students. Therefore, this study aimed at assessing students' awareness of Blended Mode of Learning (BML) in open and distance learning contexts taking OUT as a case study. Specifically, the study aimed to attain the following objectives:
   (i) To assess the level of students' awareness on BML
   (ii) To examine the usefulness of BML to OUT students
   (iii)To identify challenges students face when using BML

Literature Review

Open and Distance Learning (ODL)
The terms Open Learning and Distance Education refers to methods or approaches that focus to open access to education and training

opportunities whereby learners have flexible learning environments. Learners are free from constraints of time and place (UNESCO, 2002). ODL is a rapidly becoming a preferred mode of education delivery due to advancement of Information Communication Technology (ICT). In 1992, the Parliament of the United Republic of Tanzania endorsed the establishment of the Open University of Tanzania (OUT) which opened the door to higher education through distance education in 1994 (Mnyanyi and Mbwete, 2009). The OUT was established with the aim of increasing access to higher education in Tanzania.

OUT as an ODL institution is freeing learners from the constraints of time and place through flexibility in learning. This has unlocked doors for education opportunities to a number of Tanzanians and non-Tanzanians to have access to higher education. The teaching and learning at OUT as a distance learning institution has transcended technological and media changes from printed, audio tapes, CDs and soft copy materials supported with face to face sessions. The fact that the above generations of instructional media/technologies had inadequately addressed issue of facilitating active interaction and communication amongst OUT students and instructors, OUT introduced Blended Mode of Learning (BML) to bridge distance learning and the increasing revolutions of technology and communication. This is because, what was initially viewed as technological option became viewed as a technology imperative (Holt and Thompson, 1998). Blended Learning is an important building block of new teaching and learning environment that offers students both flexibility and convenience (Al-Saai *et al.*, 2011).

Moreover, communication between teachers and learners is a necessary component in distance education. Therefore, OUT's decision to invent into Blended Mode of Learning (BML) is thought to be a panacea to the long-lived challenges of communication in ODL contexts. Therefore, the Blended Mode of Learning at Open University of Tanzania is expected to improve distance learning by reducing such experienced distance and problems of lack of effective

communication between learners and teachers. Thus, this paper assessed the awareness of BML amongst OUT students.

Blended Learning
Defining BML
There are different sources which have tried to coin the meaning of the concept Blended Mode of Learning (BML) (Singh and Reed, 2001; Driscoll, 2002; Sands, 2002; Rossett, 2002 and Graham, 2006). For instance, Graham (2006) defines Blended Learning as the combination of instructional delivery media. Graham (2005) also defined Blended Learning as the system of learning which combine face-to-face instruction and computer-mediated instruction. Moreover, Bonk and Graham (2006) defined Blended Learning as a combination of face-to-face instructions with online instructions.

BML is also defined as the combination of instructional methods (Discoll, 2002 and Rossett, 2002) and as the combination of online and offline instruction (Sands, 2002; Rooney, 2003). Throne (2003) explained Blended Mode of Learning as the learning that integrates the innovative and technological advances offered through online learning with the interaction and participation offered in the best of traditional learning. Generally, the working definition for this paper is that Blended Mode of Learning (BML) is explained as a system of learning that combines face-to-face instructions with online instructions in teaching and learning.

Rationale of BML at OUT
Graham *et al*. (2005) identified three main reasons for introducing blended learning which are improved pedagogy, increase access and flexibility and increased cost- effectiveness. The goal for OUT to introduce blended learning is to promote effective teaching and learning with technology. At the Open University of Tanzania, the move towards Blended Mode of Learning does not replace traditional learning methods such as the use of printed and soft copies of study materials. It has been pointed out that Blended Learning is a complement to traditional education and not a replacement (Pailing,

2002 and Trasler, 2002). Therefore, Blended Mode is complementing the existing teaching and learning modes to improve the quality of output. Hence, this paper focused on assessing the awareness of students to this new mode of learning at the Open University of Tanzania. The learning through Blended Mode needs a Learning Management System (LMS) which is a software application for administering the delivery of e-learning educational courses (Ellis, 2009). At OUT MOODLE is a learning management system or learning platform that has been applied for while, the system started to be used in FASS postgraduate programmes. On MOODLE is where students find and interact with their learning materials, online discussion forums and communication with instructors and within students is enabled. MOODLE covers the online instruction in Blended Learning. Marsh II *et al*. (2004) identified that in Blended Learning face-to-face instructions are to fill the gaps in online instructions.

Requirements of blended learning

In the implementation of Blended Learning, Learning Management System is compulsory for facilitation of online instructions. Watson and Watson (2007) claims that the LMS is necessary technology. There are numerous forms of LMSs including MOODLE. Students and tutors should be trained on the use of LMS because LMS allows learners engagement through discussion forum, access to learning materials and enhance student- teacher interaction. There is also a need for students to acquire a personal computer, laptop or tablets and skills to use such devices for easy access to learning materials and assignments with internet connectivity. However, the design of instructional materials needs to be initiated in such a way that students are engaged in learning activities to meet the desired learning outcomes. Comprehensive and well designed materials may stimulate self- directed learning and thus influence the quality of the system as a whole (UNESCO, 2002: 26). Moreover, communication between teachers and learners is also necessary.

Advantages of blended learning

For students, Blended Learning provides active learning environment and flexibility in using time and resources. Moran and Myringer (1999) explained flexibility in learning as freeing up time, place and methods of learning and the use of appropriate technology in a networked environment. Blended Mode increase students' engagement in learning and widen access to learning recourses. For example in Srilanka Distance Higher Education, before Blended Mode was introduced learning was through print-based system with very few face-to-face seminars or tutorials. With Blended Mode, online components were introduced and learners were able to access course materials. Garrison and Vaughan (2011) revealed that students appreciate Blended Learning as it gives them greater flexibility and improved learning outcomes. In addition, Bath and Bourke (2010:01) stated that:

> *Blended learning is about effectively integrating ICTs into course design to enhance the teaching and learning experiences for students and teachers by enabling them to engage in ways that would not normally be available or effective in their usual environment, whether it is primarily face-to-face or distance mode.*

Consequently, the OUT transformed to Blended Learning to improve distance teaching and learning for quality output. Blended Learning reduces geographical distance through communication between students and teachers and online discussions than itwas previously used with printed learning materials. Through Blended Learning, the institution widens access to course materials (Garrison and Vaughan (2011). Thus, this paper assessed the OUT students' awareness on Blended Mode of Learning.

Methodology

Research approach and design

This study on the students' awareness on Blended Mode of Learning (BML) applied a qualitative approach in data collection and analysis.

Preference of using this approach based on the fact that, researchers sought of getting students' opinions, views and experiences particularly regarding the usefulness and challenges of BML. The fact that BLM at OUT is a new phenomenon, which needed to be explored, the best approach according to Cresswell (1998) was qualitative approach. Among the vast types of qualitative research designs, a phenomenology design was applied in this study. A phenomenological study describes experiences of individuals about a concept or a phenomenon (Cresswell, 1998). In the case of this study, researchers aimed at assessing OUT FASS postgraduate students lived experiences on the use of BML.

Data collection
Interview method particularly face to face and telephone interviews were used in data collection. Face to face interviews were conducted to continuing postgraduate students from FASS in Iringa regional center. Telephone interviews involved continuing postgraduate students from FASS who were from other regional centers including Mbeya, Mwanza, Unguja, Pemba and Dar es Salaam, to find out their opinions and awareness on Blended Mode which is a learning mode in their studies. Data were collected and analysed qualitatively using content/thematic analysis.

Participants
Participants were OUT postgraduate students from the FASS. The study involved 40 students from three different programs, which included Masters of Arts in Kiswahili (MA Kiswahili), Masters of Arts in Governance and Leadership (MAGL) and Masters of Arts in Monitoring and Evaluation (MA M&E). The students were also from different regional centers since the OUT is extended to all regions in Tanzania Mainland and Zanzibar. The centers include Iringa, Mbeya, Mwanza, Unguja, Pemba and Dar es Salaam. Snowballing and convenience sampling technique were used to get the sample of postgraduate students in FASS.

Findings

Students awareness of the blended learning
The first objective of this study sought to assess the level of students' awareness of BML. To achieve this, interviews were held with FASS postgraduate students. During interview, students were firstly asked whether or not had ever heard about BML? Responses from 40 postgraduate students from three different Masters programmes (MA. Kiswahili, Governance, Leadership, and MA Monitoring &Evaluation) revealed that 23 students, which is equivalent to 57.5%, had never heard of BML, while 17 students, which is equivalent to 42.5%, agreed to have ever heard about BML. The above findings show a close match between those who have ever heard and those who have never heard of BML. This real connotes that there somehow mixed feelings regarding how informed are the interviewed OUT student about BML.

Although, a close look into the findings also reveals that, the number of students who are not well informed about BML exceeds that of who are informed. This may have an implication that information regarding BML is not well disseminated to students as to FASS postgraduate students were supposed to be well informed. This is because, to them, this particular mode of Teaching and Learning has existed for about 2 consecutive years since its commencement in 2015/2016. This might be attributed to the fact that students are inadequately oriented on the mode, which is contrary to what is advised when it comes to adopting innovation in education, where to be the beneficiaries of the new system. Likewise, for the BML, it is advised that early and regular face-to-face contacts between learners and their teachers are required for familiarization (Ali and Leeds, 2009; Frank *et al*. 2002; Khine and Lourdusamy, 2003; Schuhmann and Skopek, 2009). Secondly, for the students who admitted to be informed about BML were asked to explain what they understand of BML. 17 responses were obtained from research participants. From them, 8 responses explained it as a hybrid mode which involves online learning with face to face interactions. Nine (9) responses mentioned and explained BML as a mixed form of learning whereby

online instructions are mixed with face-to-face instructions. Both of the responses imply that students are aware of BML as a learning mode that involve online learning with face-to-face interactions. The above findings, which show the hybrid nature of BML match with what Skill and Young (2002) and Brown (2001) conceive about Blended Learning and Hybrid instructions to be commonly used to explain the learning form whereby online instructions are combined with face-to-face instructions. On the other hand, for those who said NO on whether or not they had ever heard of BML. The study required them to mention which mode of learning they employ in their studies and programmes at large. Response from all 23 (100.0% of those confessed to be not informed of BML) participants mentioned MOODLE as a mode of learning they use in their studies. These findings mean that all these postgraduate students are confusing BML with MOODLE which is just a component of the entire BML for the on-line part. In fact, this further confirms that there are inadequate orientations to students.

In Blended Mode of Learning, MOODLE is a learning management system that enables learners to log inn with a user name and password for accessing learning resources, assignments and online discussion forums. Bates (2015) added that, most LMS such as blackboard, desire to learn and MOODLE are in fact used to replicate a classroom design model. LMS have been designed to fit the online learning environment. Tutors use MOODLE for teaching and assessment and they are advised to be online to guide learners. Therefore, these students understood much on MOODLE platform than the blended learning because during orientation they were much trained how to use MOODLE in their learning as it was a new learning system in the OUT for online learning. Thus, MOODLE covers the online learning but to have a complete BL face-to-face instruction is another part.

The Usefulness of blended learning to OUT Students
The second research objective desired to examine the usefulness of BML to OUT students as ODL learners. Specifically, the first question

asked whether the named mode of learning is useful or not to ODL learners? Responses revealed that all 40-research participants (100%) agreed that BML is useful in their learning. This means that those who responded that they had never heard of BML and mentioned MOODLE as the learning mode in their courses meant for BML and not otherwise. Therefore, when asked on the usefulness of BML they were together with those respondents who agreed to be informed on BML. The responses imply that BML is useful to students learning in ODL as has been mentioned by Lucey (2014:32) that: "*Blended Learning has numerous advantages for all distance learning students*".

Moreover, respondents were also required to explain how useful BML is in their learning. A number of responses were collected from participants regarding the usefulness of BML. Forty (40/40) responses revealed that with BML students get easy access of learning materials. Through BML students can access learning materials at their convenient time and favorite spaces. Bath and Bourke (2010) that blended learning supports the provision of information and learning resources to students support. This communication with teachers and among students has also been mentioned whereby 40 responses expressed that before BML, it was not easy to know the specific teacher for a specific course. They added that, with BML all information and instructions are online through MOODLE platform andduring face-to-face sessions, students ask for clarification difficulty areas that have not been covered online.

The same has been mentioned by Garrison and Kanuka (2004) that bblended learning provides open communication and limitless access to information on the Internet. Inline with that 33 out of 40 responses credited BML as useful to distance learners because it intensifies asking questions through online discussion forums. Likewise, Delioglou and Yildirim (2007) in their study found that majority of students indicated their enjoyment in taking a hybrid course because the interaction with their tutors was motivating. Again, Weaver (2005) highlighted that discussion forums helps learners to learn from others by gaining opinions, advice or responses and receiving help

from moderators. Therefore, access to easy communication among learners and student teachers reduces the experienced distance between teachers and students. Moreover 38/40 responses remarked BML as a learning mode that enhances active learning. This has been a reason for Distance learning institutions to opt for BML as students participate in learning through online discussion and assignments (Bonk and Graham, 2006 also Graham, 2005). In addition to that, Some Universities have seen blended learning approaches increase the level of active learning strategies, peer-to-peer learning strategies, and learner centered strategies (Collis, 2003; Morgan, 2002 and Smelser, 2002). Also 16/40 responses indicated that there were students who were computer illiterate but with BML, they acquired computer-use skills. Flexibility in learning was another comment on usefulness of BML whereby 34 responses revealed that students learn at their own time and place.

Thus, the part of online instruction in blended learning free distance learners from time and place constraints and allows flexible learning as students control their learning (Frank *et al*. 2002; Piskurich, 2004; and Lucey, 2014). In addition, BML has been useful to OUT students since 30/40 responses expressed that it enhances social interaction among students as they communicate through social networks such as WhatsApp, where they form groups. Together with this, Garrison and Kanuka (2004) added that with BML learner can be connected to community of learners anytime and anywhere without being time, place or situation bound. OUT as mentioned before, has centers in all regions in the country, therefore, students in different regions who share courses can have social interaction. This is different compared to the time before the introduction of BML when it was not easy to organize dispersed students. One of the six reasons mentioned by Graham (2003) that make one to choose BML is social interaction. Therefore, blended mode of learning is a convenient mode of learning and it serves time in learning. Online instructions improve interaction among students. With teachers, it provides a room for discussion and question asking, facilitates students social interaction, promote acquisition of other skills like computer skills, promotes students'

independency, self-confidence and it easier access to varieties of teaching and learning materials. Addition to that, Garrison and Vaughan (2011) observe that, BML enhance student-teacher interaction, increase student engagement in learning, flexibility in the teaching and learning environment.

Concerning the usefulness of the BML, the study also was interested to find out whether or not blended mode of learning meets students expectations. Reponses to this question revealed that all 40 respondents agreed on the assertion by answering ''YES'' which signifies that BML fulfills students learning expectations. This big support on the usefulness of BML in meeting students' learning expectations was further confirmed by students' opinions regarding usefulness of BML as it showed that students credit it positively. BML has been useful as compared to other learning modes used in OUT like distance and executive mode of learning. With that, BML is also said to meet students learning expectations. For instance, some students commented that:

> *…in fact this system is very useful as it has enabled me to study as if I'm in a normal class. With this mode I reach my teachers and my fellow students very easily at any time I want…''* (Interview, Kisw-ST-Mbeya; November 2016).

Another student added that:

> *In my view, BML is a good mode of learning, as we students get many resources posted by our tutors on-line. On the other hand, there is a room for us as students to share and discuss using the system. To me this system is more useful especially in this particular time of ICT.* (Interview PA-ST-Iringa; November 2016).

The Challenges of blended mode to OUT Students
Apart from the fact that BML is credited positively as useful to OUT postgraduate students, the third objective of this study aimed at identifying challenges encountered by students when learning through BML. Responses acquired during interviews revealed that; most respondents 22/40 confessed that computer illiteracy is a

challenge to them as some of them were adults and had never used computers before. This is a challenge that associates the use advanced technological media. To support this, Survey and Duffy (1995) urged that familiarity with instructional media could affect learners' attitude towards online learning. Moreover, Hofmann (2014) expressed that we can be successful in creating content but our participants cannot be successful in using it.

Furthermore, Hofmann (2014) added that if participants run into technical difficulties that cannot be easily fixed, the content might be abandoned completely. Therefore, with BML the OUT must ensure availability of computer training to students during orientation and face-to-face sessions. Apart from the challenge of computer illiteracy, secondly 28/40 responses mentioned lack of internet connections as another challenge facing students who reside in rural/peripheral areas where there is limited internet connectivity. In addition, in some regional centers like Iringa there is no wireless internet for that reason students are forced to extra costs for buying internet bundles. For instance, one student from Pemba had this to comment:

> *In our area there is no internet connectivity, I cannot get in to MOODLE, therefore I use to travel to town so that I access internet and do an assignment and reading notes, this is very costing to a student……… (Interview PA-ST-Iringa; November 2016).*

These responses imply that at OUT, students are not supported with technical facilities. Much more, students without computers or smart phones cannot access online learing. Garrison and Kanuka (2004:102) noted that:

> *There need to be a dedicated students service support center to help students with technology access, which includes not only access to a computer with the necessary software and Internet connections but also with the skills necessary to succeed in a blended learning environment.*

Therefore, for the Faculty and institution at large to succeed in BML technical support is highly encouraged. Minimal time of face-to-face

since students needs more time for face to face to clear things that were not understood during online instructions. Furthermore, inappropriate scheduling of face to face along with face-to-face sessions being located in distant areas to some students hence it is costing and some teachers are delay in uploading learning materials. It is shown that learning scheduling for FASS postgraduate students is not accommodated with distance learners. Kauts and Kaur (2014) pointed that; blended environment also adds additional scheduling and communication challenges as course meet both online and face-to-face. However, Garrison and Kanuka (2004) noted that BML requires considerable thought to the scheduling of courses. This would create flexibility to distance learners.

Conclusion and Recommendations

There is no doubt that, for distance learners blended mode of learning provides many opportunities because students learn while working and taking care of their families. Students are motivated for futher studies with institutions that do not consume their work and family time. Gabriel (2004) shows that being able to access information at a time of their own choosing provides students with many opportunities to further their studies. However, some students are not aware of BML due to inadequate information during orientation whereby they had misconception between blended learning and MOODLE as online learning platform. With the mentioned challenges, the OUT has to develop blended learning environment technical resources for students and staff for a successful blended learning. The role of teachers is to develop interactive activities and students' role is to understand what is expected and required to accomplish their courses. According to the University of Western Sydney (2013), the role of students is to understand what is expected of them and the mandatory requirements for successful completion of the unit.

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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, $\alpha= .87$) 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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Challenges of ICT Integration among Distance Learners at the Open University of Tanzania: A case of Tanga Regional Centre

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Abstract

The study focused on the challenges of ICT integration among distance learners at the Open University of Tanzania: a case of Tanga regional centre. Two objectives guided the study: to determine barriers facing distance learners as they integrate ICT in their learning and establish effects of weak ICT integration in students' learning at OUT. The study was guided by qualitative research design. The study used 37 respondents. The findings reflected that lack of and inadequate skills and knowledge on using ICT, problem of power in rural places, high cost of internet services, negative belief that ICT device are luxurious items and the weak financial position to purchase the ICT devices like I Pad were identified as barriers in ICT integrations among the OUT students at OUT. The findings further showed that poor grades in examinations, shortage of the relevant study sources and the isolation were the effects of low ICT integration among these students at OUT. Recommendations to improve the ICT integration at OUT are attached.

Key word: ICT integration, Open University of Tanzania, Barriers, I pad, CD ROM.

Introduction

The Open University of Tanzania (OUT) was allowed to operate under the Parliament Act of 1992. The university uses distance-learning mode to deliver its education to more than 29 regional

centres and to coordination centres located in Egerton-Kenya, Kigali-Rwanda, and Windhoek- Namibia. Other centers are in Malawi, Zambia and Uganda. In 2008, the Open University of Tanzania adopted an ICT policy in many of its operations. This made OUT to reduce reliance on prints. For example, in the opening of the academic year, the university would distribute disks, CD roms contained - course outlines, lecture series and any relevant material for the students' studies. This meant students to learn and use ICT in their learning. Other faculties introduced moodle learning management system, which would allow the students to see lecturers' postings, discuss and submit queries about their learning. However, in a course of adoption of these learning management systems (moodle, internet and CDs) some of the students were highly challenged. Others had to drop and join conventional system where they could assemble and listen to lecturers. Other students had to take time to learn on this new innovation(Singano, 2015).This study, thus, investigated on challenges facing learners in integrating ICT in their learning at (OUT), case of Tanga regional centre.

Statement of the Problem

The purpose of establishing OUT was to allow mass population to access education (Muhehe, 2002 and Rwejuna 2008). As OUT adopts ICT policy (integrate) (ICT) in delivery of education, it seems adult learners are challenged with this innovation. This has resulted to some of the distance learners to opt to join other universities, and the continuing students to take too long to complete studies (Rwejuna, 2013). Others have dropped from studies. This scenario cannot allow OUT achieve its mission and vision of allowing more people to study / access education at OUT using distance learning mode.

Objectives of the Study

The purpose of this study is to investigate the major challenges OUT students face in integrating adopting ICT in their learning.

The specific objectives are to analyze:

i. Identifyig barriers facing distance learners at (OUT) as they integrate ICT in their learning

ii. Establishing effects of weak ICT integration in students' learning at OUT.

Research questions

i. What are barriers facing distance learners as OUT students integrates ICT in their learning at OUT?

ii. What are the effects of weak ICT integration in students' learning at OUT?

Significance of the study

The University expected to get feedback on the barriers facing ODL learners as OUT students integrate ICT in their learning, thus be able to see what improvement is needed to improve students' learning using ICT. The study provides feedback, which will guide toward resources improvement in students learning such as ICT infrastructure (internet and computer facilities). The study is likely to reveal the needed level of training needed to both students and lecturers so that ICT integration can be effective in delivery of education at OUT.

Literature Review

Concepts of ICT

Information and communication technology (ICT) is the technology used for communicating, transmitting, storing, creating, sharing and exchanging information (URT, 2007). It involves the use of such devices like radio, telephone (mobile and fixed lines), computer, iPad, computer, internet, hardware and software. It also includes equipment associated with these technologies, such as electronic mails, text messages, radio and television broadcasts (URT, 2007). In many settings today, distance education utilizes modern ICT (UNESCO, Institute for Information and Communication Technology

in Education, 2002). The use of ICT in teaching and learning enhances learners' motivation, skills, concentration, cognitive processing, independent learning and critical thinking abilities. It ensures positive learning attitudes among students of all ages (UNESCO, Institute for Information and Communication Technologies in Education, 2002).

Overview of information and communication technology
ICT includes varieties of technologies for manipulation and communication of information, that is; totality of technologies used for collecting, processing, communicating, storing, transmitting, sharing, retrieving and analyzing information (Maro *et al*. 2008). ICT includes devices, which process information, like computers, and other devices, which disseminate information, such as telecommunication systems (Gunton, 1993). In this century, ICT enables people to access education, including university education, smoothly, efficiently and effectively. At OUT, ICT is now one of the means of delivery of distance education. Other means include telecasting, correspondence, enhanced face to face, seminars and combination of two or more of these means.

Recently (in 2016) OUT has adopted teleconference facilities. ICT tools which are widely used are computers, internet, mobile phones, LCD, audio/visual cassettes, CDs, DVDs, blogs, wikis, podcasts and social networks and televisions, radios, one way video conferences, emails and discussion forums, (Chen and Bonk, 2008; Usluel and Mazman, 2009 and Maro, 2008). The use of ICT in open and distance learning system satisfies distance learners with their continuing educational needs since it bridges the barriers of time and space, simplifies accessing the learning materials and enables a kind of interaction among distance learners and between the learners and their tutors (UNESCO, Institute for Information and Communication Technologies in Education, 2005, Mushi, 2006). ICT enhances the

quality of education; as the world is moving rapidly into digital media and information.The role of ICTs in education is becoming more important in the 21st century (Toro and Joshi, 2012). ICT enables availability of relevant and best course materials and help to share those (Joshi *et al.*, 2012). The OUT formulated a policy in 2009 to govern and guide the integration of ICT in the delivery of distance education (Nyandara, 2012). ICT has become a commonplace entity in all aspects of life. Across the past twenty years, the use of ICT has fundamentally changed the practices and procedures of nearly all forms of human activities and responsibilities. Education is a socially oriented activity. Quality education has traditionally been associated with strong teachers having high degrees of personal contact with learners. Nowadays the use of ICT in education lends itself to more student-centred learning settings and as the world moves rapidly into digital media and information, the role of ICT in education is becoming more and more important.

The Role of information and communication technology in distance education

ICT increases the flexibility of delivery of education so that learners can access knowledge anytime and anywhere. ICT can influence the way distance learners are taught and how they learn, as now the teaching-learning processes are learner-centred and not teacher-centred. This in turn would better prepare the learners for lifelong learning as well as to improve the quality of learning (Moore and Kearsley, 1996). ICT has the potential to innovate, accelerate, enrich, and deepen skills, to motivate and engage students, to help relate school experience to work practices, create economic viability for tomorrow's workers, as well as strengthening teaching and helping schools change. ICT improves educational content and teaching that is more effective and learning methods. ICT improves the learning process through the provision of more interactive educational materials that increase learner motivation and facilitate easy acquisition of basic skills (Price water house coopers, 2010). The use

of various multimedia devices such as television, videos, and computer applications offers more challenging and engaging learning environment for students of all ages (Pricewaterhousecoopers, 2010). Active and collaborative learning environments facilitated by ICT contribute to the creation of a knowledge-based student population. Education leadership, management, and governance can also be improved through ICT by enhancing educational content development and supporting administrative processes in schools and other educational establishments. ICT also enables distance learners and tutors to be creative and able to develop relevant course materials through electronic courseware development (Moore and Tait, 2002).

Since distance learners are geographically separated from their tutors, they need a close follow-up to get solutions to various problems related to their studies. They also need encouragement, advice and personalized assessment of their academic tasks. ICT provides solutions to all of these matters (Kagugu, 2011). ICT tools enable distance learners interact with a great number of learning resources, including universities' learning management systems. With those resources, they can upload and download anything, as a need arises, including their progressive results and examination timetables. Learners can also chat among themselves and their tutors to share their experiences and knowledge and send queries to their tutors, which need immediate solutions (Kagugu, 2011). Mushi (2006; cited by Kagugu, 2011) holds that ICT tools like e-mails, chat rooms, and bulletin boards are useful to tutors to keep them in touch with their distance learners. In this way, they can monitor distance learners' participation, evaluate learning, pedagogy and the effectiveness of teaching-learning. Effective integration of ICT in distance education eliminates the problem of learner-tutor isolation.

Challenges of information and communication technology integration in distance education

Reviewed literature revealed several setbacks, which hinder the integration of ICT in open and distance learning. Guo and Cai (2006; cited by Kagugu, 2011) maintain that ICT has not effectively integrated into everyday distance teaching and learning delivery; it still relies on traditional methods. Connection to the internet is very expensive in developing countries and the hidden cost of end-user in accessing internet is also very high (Guo and Cai, 2006; cited by Kagugu, 2011). On the part of the distance learners and their tutors, studies show that many of them lack technical and pedagogical skills relevant for using ICT tools, like computers, internet and tablets in the teaching-learning process at a distance. (Chapman *et al*. 2004; cited by Kagugu, 2011). Sife *et al*. (2007) found challenges of lack of awareness and negative attitudes towards ICT, inadequate funds for ICT infrastructure and staff development, insufficient qualified ICT staff and lack of systematic approach to ICT implementation.

In their study, Swarts and Wachira (2010) found that the use of digital and e-learning environments has not been widely adopted in most of the universities in Tanzania with the exception of OUT and the University of Dar es Salaam. Swarts and Wachira (2010) depicted the following challenges in deploying and using ICT effectively in education: inadequate ICT and electricity infrastructure, especially in the rural areas. In the rural areas, telecommunication was limited to the commercial and business centres, internet access was unavailable or less available and costs of accessing internet were high. Rural areas were still underserved owing to internet access, electric supply and their costs (Swarts and Wachira, 2010). Only 10% of the total population of Tanzania was connected to the national power grid in 2006. With 1% of these being in the rural areas; the cost of connectivity was very high in Tanzania which created barriers to the spread and use of internet, which is a major vehicle for data transfer

and access to information. This resulted into low level of internet penetration and patterns of using ICT (Swarts and Wachira, 2010). Those challenges create barriers for effective use of ICT in open and distance learning, particularly to distance learners (Swarts and Wachira, 2010). In turn, the challenges contributed to open and distance learners' negative perceptions to integration of ICTs in open and distance learning (Swarts and Wachira, 2010).

Research Methodology

Qualitative research design was used in this study. Patton (2009) holds that qualitative design is flexible. It is suitable to accommodate studies searching for experiences of phenomenon. This study sought to find barriers of ICT integration among OUT distance learners. To capture how, and what is exactly the experience of challenges of ICT integration in ODL, qualitative design was an appropriate design, as it allows flexible questions that generate in-depth information about the phenomenon. An advantage seems to be difficult for quantitative design with survey method.

The sample of the study composed dropout students and continuing students at OUT in Tanga. Their total was 37 informants. Qualitative design was guided by purposeful sampling techniques (Patton, 2009). Therefore, the same technique was employed to get potential respondents to respond to the interview questions. Patton (2009) insists of the few sample size, what matters is the sample, which gives maximum information for the study. Two methods were used to collect data. These were interview and focus group discussion. Interview was conducted by the research assistance who wrote the responses in the transcript and latter repotted the information to the principal researcher. Focus group discussion was done to a group of continuing students who were available at Korogwe TTC at the time of attending the examination session in 2015. The analysis of data was done thematically as Bogdan and Bicklen (1998) propose it.

Information were read, used picture, synthesied, put into categories and themes to inform audience on the barriers of ICT integration in the students' learning at OUT.

Findings

Barriers Inhibiting (OUT) learners in integrating ICT in their Learning

Lack of and inadequate skills and knowledge on using ICT

It was revealed through interviews and focused group discussion methods that there were a good number of distance learners of the OUT who did not have skills and knowledge on using and working with ICT devices. Others have inadequate knowledge and skills for working with those devices. Inadequate and lack of skills and knowledge on using ICT devices were found to impede distance learners of the OUT in using ICT devices and develop negative perceptions on ICT integration in ODL. The following are views of one of the respondents during focused group discussion:

> I have no ABC of using a computer. As such, I am not willing to use with a computer. However, because some of my work should be typed, I sometimes use my daughter who types for me. In her absence, I take my work to nearby stationery and hire a servant there to type my work.

During interview another respondent had the following to say on lack of skills and knowledge of using ICT devices:

> We were taught ICT theoretically, mainly on how to use a computer. The lessons discouraged me much and made me hate the use of ICT devices because we were learning things, which we did not see.

The following are explanations of another respondent during an interview at Magoma, Korogwe:

I have no interest on computers and tablets or ipads mainly because I do not know how to use them. I tried to undergo private training but, with family and work obligations, I failed to cope.

High costs of internet connection and of buying ICT Devices
Interview and focused group discussion revealed that high costs of internet connection and of buying computers, laptops and other ICT devices is another barrier to ICT use and a reason for the distance learners of the OUT to have negative perceptions on ICT integration in ODL. The following are words of a respondent who dropped from studies she gave during an interview:

> With my low salary I cannot manage to own a new laptop. In the beginning of my studies I thought I could manage the cost of internet connection at the internet café. However, in reality this was not the case. T.Shs.1000/= for every 30 minutes of internet connection at an internet café is so high that I could not manage to pay frequently.

During a focused group discussion session, another continuing OUT student explained about high costs of ICT devices, she said:

> If you want a new and good computer you must have not less than T.shs. 650,000/=, yet you must possess an external hard disc which is about Tshs.150,000/=, a moderm about T.shs. 30,000/=, a printer of at least T.shs. 150,000/= and frequent internet bundles to access internet. Total cost of all those items is high to many common civil servants and me. Even if one decides to turn to a smart phone which you can use for distance learning it will cost one not less than T.shs. 200,000/=.

A Belief about ICT Devices as Luxurious
In the villages of Korogwe, Handeni and Lushoto respondents during focused group discussion and interviews revealed that some students

of the OUT believe that computers, smart phones, tablets and similar devices are items of the well-off people. One of those respondents said:

> We civil servants in the villages live and work according to how situations in villages allow us to. I do not think of using such luxurious things of the well-off people, like a computer and tablet in my work or studies while the environment is not conducive for using such items.

Lack of internet network and weak internet network in the rural areas

During the interviews and focused group discussion respondents explained that there are areas in the rural areas with no internet connection while others have weak internet connectivity which hinder distance learners from smoothly using ICT and stimulating negative perceptions on ICT integration in their learning. One respondent who dropped from studies had the following to say:

> Look at your mobile phone. Is there mobile network? No connection! You can't even make a call. That means no internet connection in this area. If you need internet network, you should follow that road going to Dindira Tea Factory. How can one convince me to develop interest in owning and using a laptop or Smartphone in a study area where there is no connectivity?

During an interview at Manka villge in Korogwe district another respondent claimed:

> Internet network is unavailable at some places here at Manka village. In other places it is weakly available. Sometimes I buy a 24-hour bundle or bundle of a week but I fail to get internet connection during the whole duration

of a week or 24 hours. My android tablet shows that I am connected but I do not access internet services.

During an interview, another respondent of Songe - Kilindi had the following views:

> I naturally loose interest in the new technology. To be able to use the technology effectively I have to update myself in many things - training, buying devices and practicing. Busy as I am now, I do not think I can get enough time to undergo ICT training. When thinking that I cannot get time for learning how to use a computer or tablet, I naturally feel reluctant to adopt the technology.

Lack of Electricity in the Rural Areas and Frequent Electric Cut-off

The interviews and focused group discussion revealed that there are rural areas, which do not have electric power supply. The views of some respondents justify this reality, including the following views of a respondent who lives at Kwematuku village in Handeni District:

> Lack of electricity is a big problem at our village. Even if you have a computer or smart phone, you cannot work with them here because those items need reliable electric power supply to use them effectively. Kwemsala had not been supplied with electricity. This limits the use of smart phones and computers, demoralizing me to own and learn how to use a computer.

Another rural dweller respondent Zege village in Korogwe district said:

> Great emphasis is placed on using computers, mobile phones and other ICT devices but lack of electricity in our village and other villages is a challenge to implementation of this innovation.

Another interviewed respondent at Mghambo village, Korogwe district said:

> You can see yourself how the situation is at Mghambo; there is no electricity and mobile networks. This means internet network is inaccessible here.

Another respondent of Kwagunda village, Korogwe said during a focused group discussion:

> Due to my low economic level, I own a second hand desktop. When I use it and electricity runs off unexpectedly, all my work disappears. If I was downloading an important thing at that moment, I cannot go on. One day my friend came to register herself using my computer. As soon as she connected to internet network, there was power cut-off. That was around 9:00 a.m., we waited until around 11:30 p.m. but power could not turn back. Just imagine, this was the last day to register for the examinations.

Distance Learners' Financial Constraints
The interviews and focused group discussion showed that many distance learners are of low economic status and so they cannot easily purchase quality ICT devices they are supposed to own. The following are views of one of the respondents during an interview:

> Many of my fellow distance, learners and I are of so low economic status that, with many family obligations, we fail to manage the costs of good laptops, moderm, desktops and external hard discs.

Effects of Weak ICT Integration in Students' Learning at OUT
The barriers presented above have various effects to the distance learners of the OUT, as revealed during the focused group discussion and interviews.

Difficulties to get information and study materials

Difficulties to access enough and relevant materials, which are relevant to the courses of study of distance learners is one of the effects revealed by the respondents during focused group discussion and interviews. A continuing OUT student of Songe, Kilindi had the following to say in a focused group discussion:

> *As I cannot access internet at this village, I face a problem of shortage of study materials relevant to my course. Sometimes the books I use do not have the content I need and mobile phone internet is inaccessible.*

Lack of intrinsic motivation to pursue studies

The barriers described above contribute to distance learners' lack of intrinsic motivation to pursue studies through a distance mode, as revealed by interviews when an interviewed primary school teacher at Mahenge, Korogwe:

> *In the beginning, I thought it is easier to study at a distance while working than joining a conventional university. Now I have realized that it is not such easy due to lack of internet connection, electricity and inability to use a computer.*

Increased loneliness

The interviews and focused group discussion revealed that loneliness of the distance learners is deepened by low use of ICT devices, as one interviewed respondent at Muheza said:

> *Inability to use and own a laptop makes me very lonely as a distance learner as I cannot communicate with my fellow students, OUT administration and my lecturers.*

Another interviewed respondent living at the Korogwe-Kwameta town said:

> *At my residential area at Kwameta I cannot receive a call as there is no mobile network. Mobile internet is also a problem*

here. This makes me feel lonely. If I want to call somebody, I must go to a place about seven to ten metres from my home place.

High cost for travelling

The interviews and focused group discussion showed high costs, which distance learners of the OUT, incur in travelling to distant places with internet cafés and stationeries. The following are words of a primary school teacher of Dindira during a focused group discussion:

> *Internet connection here at Dindira-Kwefingo is very weak and in some places, it is inaccessible. Moreover, I am not competent in working with a computer. I have to travel to Korogwe town to access internet at the internet café or to have my work printed at stationery whenever a need arises. A go-and-return bus fare is T.shs. 6,000/=, I have to breakfast and get lunch there for at least T.sh. 12,000/=. Stationery (typing, photocopying editing and binding) and internet services (downloading, communicating with fellow students and tutors and accessing important information) cost about T.shs. 15,000/=, making a total cost of T.shs. 33,000/=.*

Another continuing undergraduate student of the OUT commented the following during an interview:

> *There are no internet and stationery services here at Tewe village and frequent visits to internet cafés and stationeries at Korogwe town is very expensive in terms of money and time.*

High costs of internet

The interviews and focused group discussion found high costs which distance learners incur in accessing internet and having their work typed, printed, photocopied, and other necessary internet and stationery services. One of the interviewed respondents with such views said:

Imagine you have 135 pages to type, print, photocopy and bind. At Korogwe typing a normal black and white page on Microsoft word costs T.Shs. 500/= a page, on Microsoft excel and tabulated Microsoft word the cost is T.Shs. 1,000/= printing costs T.Shs.500/= a page and T. shs. 1,000/= for a tabulated page. Photocopy costs T.Shs.100/= a page. For 135 pages, the total cost is not less than T.Shs.150,000/=. To get internet connection at an internet café it is necessary to pay about T.shs. 1,000/= per hour.

Another respondent said during a focused group discussion:

Even if you have your own device for accessing internet, the cost of internet bundles is high - 1GB for about T.Sh. 1,000/= or T.Shs.1,500/= per day; 1GB for about T.Shs. 3,000/= or 4,000/= per week. Yet there is a cost of printing the downloaded materials, which is necessary for my fellows and me, as we do not have storage devices, like flash discs, memory cards and external hard discs.

Low pass grades

Focused group discussion found low pass grades to be another impact of the challenges of using ICT in distance learning. One of the interviewed respondents with such views said:

In the first year of my course of study overall academic performance was very low. The reason is that I could not get enough and relevant study materials, as there is no electricity in our village, no internet and mobile networks and no internet cafés. Even if you have your smart phone, it is useless in this village. In my second year I failed 'OEG 223: Remote Sensing and Quantitative Methods in Geography' and I was required to sit for a supplementary examination for that course.

Prolonged course completion

Focused group discussion revealed that there are distance learners of the OUT who do not complete their courses of study on time due to barriers to integrating ICT in ODL. One of the respondents had the following to say:

> I postponed sitting for the examinations when I found myself unprepared for the examination. I do not own a computer or smart phone, and several times, I failed to manage high costs of stationery and internet café. The state of having fewer and shallow study materials reduced my study speed and morale…

Discussion of Findings

Barriers Inhibiting OUT learners to Use ICT in their Learning

Lack of and Inadequate Skills and Knowledge on using ICT Devices

Research findings revealed lack of skills and knowledge on using and working with ICT devices among distance learners of OUT to be one of the barriers of using ICT among distance learners. This contributes to their negative perceptions about learning through ICT devices. The findings showed that some of distance learners were taught how to use computers theoretically, which made those lessons difficult to them and not interesting, hence they almost acquired nothing. The findings also showed that OUT students who could not use computers, ipads and tablets take their work to commercial stationeries where they would have stationery attendants type and organize their work. Others use their relatives, like daughters to help them do their work. The study findings also noted that there were individuals who underwent private ICT lessons but failed to complete their courses due to lack of enough time and financial resources owing to family obligations. These findings concur with the findings by Nihuka (2011; cited by Nihuka and Ngimi, 2013) who revealed that many of the OUT students have low competences on

basic and internet applications. This finding established under this section extends the finding established by Galusha (1998) that the majority of adult distance learners are not conversant with use of ICT equipment and have thus negative attitudes towards ICT.

High Costs of Internet Connection and Buying ICT Devices

Research findings revealed that high prices of desktops, laptops, smart phones, external hard discs, modems and other digital devices contribute to distance learners' negative perceptions about ICT integration in their learning. Research findings revealed that most of the distance learners of the OUT have low salaries, which cannot finance family basic needs (like food stuffs, clothing, transport costs, children's school fees, etc.) and remain with a sufficient amount of money with which to meet ICT cost. An example cited by a respondent in the findings shows that a new and good computer costs not less than T.shs.650,000/=, an external hard disc around T.shs.150,000/=, a modem about T.shs.30,000/=, a smart phone about T.shs.200,000/=, a printer at least T.shs. 100,000/= and frequent internet bundles to access internet. The total cost is so high that many distance learners of the OUT fail to manage, contributing to negative perceptions about ICT integration in their learning.

Regarding the costs of internet connectivity, the majority of the OUT students cannot manage the costs of the bigger and most efficient digital bandwidth, like those of Uhuru one and TTCL. As such, the majority of them depend on the internet provided by the mobile phone companies, like Vodacom, Airtel and Tigo. As such, in areas where there is no or there is unreliable mobile network, there is also no internet network or there is unreliable internet network. It was noted in the research findings that many students of the OUT incur cost of internet connection at the internet cafés for about T.shs.1000/= per hour. When one buys one GB-bundle of 24 hours one incurs the cost of between T.shs.1000/= and T.shs.1500/= or between

T.shs.25000/= and T.shs. 35000/= for an internet bundle of one month. It is clear that with frequent use of the mobile internet, many students of the OUT fail to incur cost for internet connection. This inhibits them to use ICT in their learning effectively. These findings concur with the study done by Nyandara (2013). who noted that the access to internet is very expensive in case of connection and hidden cost to end-users in accessing the internet. Rwejuna (2013) who established that ODL learners are not able to meet the costs of ICT such as purchasing the laptop computer supports this finding and paying for the internet café, browsing materials charges; as a result they drop and join other system of learning confined to prints.

A belief that ICT devices are luxurious

Research findings revealed that the OUT students particularly those who live in the rural areas regard smart phones, tablets, laptops and similar ICT devices as luxurious items to be owned by the well-off people. Individuals with such a belief include the civil servants working in the villages, who claim that due to their low economic status, they cannot buy ICT devices and so they do not think of purchasing them. The findings also reflected views of civil servants working in the villages that the villages are not conducive for ICT devices to operate, as their socio-economic and physical environments are less developed. This contributed to the negative perceptions among the distance learners of the OUT. These findings concur with those of Swarts and Wachira (2010) who found the widespread view that many people consider owning and using ICT tools as a status symbol rather than important working tools.

Lack of internet network and weak internet network

Research findings identified that internet network in the country does not cover all areas in Tanzania. The rural areas are more affected by this problem. It was noted that because of lack of internet connection, distance learners of the OUT at the villages do not find the

importance of owning ICT devices, like tablets and laptops. There are other places of the villages with mobile network but with weak and unreliable internet network. When distance learners connect themselves to internet network they get messages that they are connected, but actually, when they attempt to access specific websites or download various materials internet fails and they cannot do anything. This has for long discouraged distance learners in owning and using ICT devices, consequently it has contributed to low integration in using ICT devices in their studies. The above findings concur with those of Swarts and Wachira (2010) who noted that internet connectivity and other supporting infrastructures are inadequate, unreliable and do not covered wide areas of the country. They found insufficient ICT infrastructure particularly in the rural areas (Swarts and Wachira, 2010, Agyemang et al., 2010, Mushi, 2006).

Lack of electricity in the rural areas and frequent electric cut-off
Research findings disclosed lack of electricity in the rural areas and frequent electric cut-off in almost all parts of Tanzania as a barrier, which limit distance learners of the OUT unable to use ICT devices effectively. The findings revealed that many Tanzanian villages have not been connected with electricity of TANESCO, limiting the rural distance learners in using such ICT devices, like laptops, tablets and desktops. Lack of electricity is a big challenge in many villages, like Mghambo and Zege in Korogwe such that, a computer, tablet or smart phones in those villages is almost useless because they need reliable electric power supply to effectively use them. This demoralizes distance learners in rural areas to own and learn how to use computers. The findings show further that while great emphasis is placed on using computers, mobile phones and other ICT devices, little has relatively been done to ensure that the villages are electrified. Regarding frequent cut-off of electricity, findings of this study reveal the tendency of the frequent power cut in various places in the country. The findings identified that for distance learners with second hand laptops with batteries, which do not save power for

long, abrupt cut-off of electricity causes a loss of their unsaved academic works. When electricity runs out, a student cannot work anymore with a computer and all that he/she had planned to do cannot be done as planned. Many of their activities, like printing, typing, downloading and charting cannot be done. These findings concur with the findings by Swarts and Wachira (2010). who found that inadequate electricity infrastructure, such as that which happened in 2006; only 10% of the total population of Tanzania was connected to the national power grid with only 1% of that figure being in the rural areas.

Financial constraints

The findings of this study showed that many distance learners have low financial abilities thus; they cannot easily purchase quality ICT devices. bearing in mind that they have other family and personal obligations to meet. An example is a primary school teacher, whose take home salary is about T.shs.540,000/=. With such a low salary, the teacher fails to meet family prerequisites and remain with enough cash for purchasing ICT devices. Such findings are similar to the findings by Rwejuna (2013) who found that, due to their low incomes; distance learners of the OUT face the problem of paying tuition and examination fees as they have other family obligations.

Effects of weak ICT integration to the students' learning at OUT

Study materials and information

The findings by this study have shown that there are distance learners at OUT who face the shortage of relevant study materials. The findings indicated that while those learners find it difficult to buy and use computers they could use for downloading study materials relevant for their courses of study, they find it more difficult to collect varieties of relevant study materials, which are necessary for their studies without using ICT devices and internet. The findings revealed thedifference in understanding lessons between students who did not

have ICT devices and those who owned and used them.. Study findings revealed also that distance learners fail to get necessary information related to their studies, like information on examination timetable, dates of examination registration and information on academic progress. These findings relate with the findings of Mshangi (2013) who found that ICT facilitates self-assessment and improves students' learning as they can have access to online web. This finding also extends the findings established by Rwejuna (2013) who holds that some of the OUT law students scored low grades in their courses and had to write supplementary examinations. That was caused by their inability to use and integrate ICT in their learning.

Lack of intrinsic motivation

The findings also showed that distance learners did well at the beginning of their studies but, later performed poorly as they faced challenges related to ICT. Such challenges included; lack of internet network, inability to own and use ICT devices, like laptops, desktops and tablets, lack of electricity in many rural areas and unreliable electricity in many parts of the country, high costs of internet connection, willingness and intrinsic motivations of those distance learners to pursue studies through a distance mode weakens. In turn, this causedlow academic performance and drop-out among distance learners of the OUT. This finding relates with the finding of Noor-Ul-Amin (undated) who identified that ICT provides motivation to learn. It enhances the quality of education by increasing learner motivation and prolonged engagement.

Loneliness

Findings of the study showed that distance learners who do not use ICT devices and internet do not communicate with their fellow students and tutors. The study revealed that distance learners also fail to sort and download study materials from the internet, which could keep them, busy most of the time leading to mastery of course

contents. This increases their loneliness. The study found that inability to call or e-mail a fellow student, or tutor or accessing internet students feel very isolated and helpless in some areas. This is supported by Noor-Ul-Amin's findings (undated) who found that ICT promotes student engagement, in a learner-centred environment. Noor-Ul-Amin also found that with the use of ICT a student can have easy access to resource persons, mentors, experts, researchers, professionals and peers all-over the world.

High transport costs
Findings of this study revealed that distance learners' inability to use and own ICT devices together with challenges of electricity in the rural and urban areas force them to seek stationeries and internet cafés, in places where they are located, particularly in urban areas like Korogwe, Lushoto, Songe and Tanga. The study findings revealed that distance learners living in towns and its outskirts, who have limited access to ICT devices are supposed to incur some costs for movement by *"bodaboda"* or town buses to access stationery and internet cafés centers in town for downloading important information and study materials.

The fare may be about T.shs. 4,000/= while stationery and internet café cost may be around T.shs. 15,000/= making a total cost of T.shs. 19,000/= for a single visit to internet café and stationery. This cost is so high for most of distance learners to afford. So far, distance learners living in rural areas have to incur costs fare and meals (breakfast and lunch) apart from stationery and internet café costs. The findings found that distance learners have to travel from their home villages to nearby towns. The minimum bus fare may be around T.shs. 6,000/=, breakfast and lunch may cost for about T.sh. 12,000/= and stationery (typing, editing and binding) and internet services (downloading, communicating with fellow students and tutors and accessing important information) may cost T.shs. 15,000/=, making a total cost of Tshs. 33,000/= just for a single journey. Research findings indicated

that distance learners would want to visitstationery and internet cafés frequently but they fail to do so because the cost is high. Moreover, learners have to incur cost of time, as they have to put off other activities insearch for ICT ervices. The above findings are supported by Niwagila (2014) who holds that rural students do not have ICT facilities thus, for one to access them, needs more additional costs.

Conclusion

As OUT moves towards digitalization, there some barriers that make students fail to adapt to this ICT integration in their learning. This is reflected in the low ICT integration among students. This is not a healthy scenario, as the university cannot achieve its objective of mass education to attain the EFA philosophy. It needs to be noted also that, no one was born with the computer skills, all learnt it. Therefore, even the OUT students should be given the chance to learn and master computer skills, if the university intends to improve ICT integration, the following are recommendations to be noted. There should be computer training should be offered frequently and continously. The ICT personnel in regional centers can do this. Students should be given freedom to use regional ICT facilities free of charge. This will motivate even rigid students to develop the interest toward the use of ICT in their learning. Regional centers may start to organize seminars and trainings on the use of ICT in education.OUT may start projects to boost ICT growth and stability, for example by selling tablets to students.

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Issues on the Examination Grading System of the Open University of Tanzania Undergraduate Students' Academic Programmes

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Abstract

Assigning grades to students' academic performance is a significant part of learning. This article highlights some of the issues in the Examination Regulations of the Open University of Tanzania (OUT). The main objective of the article is to stir up OUT stakeholders' critical outlook at issues raised. The main issues raised are the lack of grading Student Progress Portfolio (SPP); the un-proportional weight given to the Annual Examination relative to Main Tests; the rationale of having 40% as a pass mark for a course in a degree programme; the classification of Failure; the big range of Grade "A" relative to the other grades; and the question of only giving "C" to re-sitters and repeaters regardless of their performance in respective courses. Several recommendations have being advanced in regard to the above issues.

Introduction

Assessment of students' academic performance is one of the major tasks of a lecturer at a university. Allen (2004) points out that educational assessment involve specific procedures of documenting data on students' performance on the expectation of refining programs and improving student learning. At the Open University of Tanzania (OUT) the course lecturer is involved in the whole process of assessment in the form of setting, marking and grading Main Timed Test (MTT) and the Annual Examination (AE). This undertaking has great impact on the students' motivation to learn in form of expectations and also their future, professionally and academically. Also, assessment determines the quality of education offered by the university and it is a mechanism for quality assurance.

Thus, it is imperative for a lecturer to be conversant deeply and broadly with all that is in the university assessment mechanism.

Statement of the problem

This article highlights some of the issues and questions that emerge upon reflections on the assessment mechanism of OUT. Thus it intended to critically analyse OUT Examination Regulations and identify the issues therein that have contradictions or ambiguities.

Conceptual framework

Most of the content in this article is a subjective reflection on what is found in the section on General University Examination Regulations for Undergraduate Courses in the Open University of Tanzania Prospectus 2013/14 (pages15 and 16); and classification of degrees on page 22 and 23). This paper assumes that the lecturers and students have access to the Prospectus and hence the examination regulations. The regulations indicate the weight allocated to each component in the assessment process, grades for marks acquired and the classification of degree received at the candidate's completion of the respective programme.

The information provided is conclusions or resolutions passed by the institution's responsible organs. The Prospectus does not provide rationale for the regulation; and neither does it indicate nor suggest where these discussions can be accessed. Thus, from the very beginning the author acknowledges as having a limited knowledge on the background of assessment mechanism of the OUT. Also, the article does not make a comparison between OUT regulations and that of other higher learning institutions in Tanzania or elsewhere. This is based on the belief that what matters to OUT stakeholders are the existing examination regulations and the current practices of the institution. In identifying the issues the article assumes that OUT grading mechanism is a reflection of some of the functions of grading as mentioned by M. Scriven (1974). These include:

- To describe the worth and value of work accomplished

- To improve student's self-evaluation
- To stimulate and encourage good work by students
- To communicate teachers' judgment of the student's progress
- To select people for awards and continued education

Also, the article assumes that there is a positive correlation between student's grade and his/her academic performance. Grades derived from examination marks provide information on how well the students are learning (Erickson & Strommer, 1991) and demonstrate students' mastery of knowledge and skills.

Scope and objectives of the study

It also aims at sensitizing the stakeholders to have a critical look at this very important component in students' academic progress and achievement. This paper is only limited to the grading component of the assessment mechanism employed at OUT. It is assumed that the examination marks are an accurate summary of students' performance on the course based on valid assessment instruments. Ignored in this article are negative side effects of examinations and grading e.g. test anxiety, cheating (passing without learning). sense of inferiority (for being labeled "Absolute Failure") or deterioration of knowledge since when the grade was obtained. It is assumed that OUT examinations/tests are fair and the marking process is reliable.

The article has not exhausted all the issues that can be raised in regard to the OUT grading system. The main objective is make stakeholders have a critical look at what is practiced with the aim of having a serious discussion on these important issues that are rarely discussed.

Methodology

This study deployed the documentary research method. Payne and Payne (2004) describe the documentary method as the techniques that are commonly used to investigate, interpret and identify the limitations of commonly written documents. Mogalakwe (2009) points out that although this method is not very popular in social science research, however it is acceptable as a scientific research method. The prime document for assessment of this study was the

OUT Prospectus, solely in section describing Examination Regulations. A critical analysis of the regulations was used to identify the issues highlighted here. According to essaypro.com (Retrieved 2018) critical analysis refers to an academic paper designed to understand certain written work that expresses the personal opinion of the writer. Thus the opinions in this article in reference to OUT examinations are subjective in nature.

Why is Student Progress Portfolio (SPP) not graded?
The OUT's academic assessment system for undergraduate students' courses normally consists of three components, namely: Student Progress Portfolio (SPP), Main Test (MTT) and Annual Examination (AE). A Student portfolio is a " compilation of academic work assembled for the purpose, among several, of evaluating coursework quality, learning progress, and academic achievement; determining whether students have met learning standards or requirements for a course; and helping students reflect on their academic goals and progress as learners (2016, edglossary.org>portfolio).

Portfolios can be used in different levels in education system and be in form of collection of student's work as the evidence of learning. Normally the institution, depending on objectives of the portfolio, decides on how and if to grade the students' portfolio. When the institution is looking for overall mastery of the course then there is need to grade a portfolio through a rating scale (McDonald, 2011). SSP is mandatory to all OUT students. SPP is not allocated any score or grade although it is assessed and used to determine student's preparedness for examination. According to regulation 3.5 it is stated that no mark will be awarded for SSP (OUT Prospectus 2013/14). However, a student is not allowed to attempt AE without first submitting SPP for assessment by academic staff.

SSP component is very demanding, especially when compared to MTT and AE. In SPP the student is required to summarise, in one page, by giving a description of what s/he considers to be the most important knowledge and skills gained from the respective subject.

Relatively, in MTT a student only learns half of the course content and his/her performance is reflected by a score. In AE the student has to cover the whole course content and his/her performance is reflected by a score. A critical analysis of the three components leads one to conclude that SPP is more demanding since the student has to make a self evaluation on his/her competency in the subject; sort the important knowledge and skills gained from the subject and then come out with a one page summary. It is not a small feat to summarise a whole course in a single page paper size A5.

In making an assessment, one expects the outcome to be a pass or fail. In case of OUT SSP results lead into being eligible (pass) or ineligible (fail) to get Examination Hall Ticket (EHT). Total failure of SSP may lead to student being asked to withdraw from the university. However, one observes that the SSP results are solely based on subjective judgment, i.e. both by the student and the academic staff. When a student submits SPP s/he has already evaluated himself/herself and believes that s/he has gained the required levels of competency to attempt AE. The assessing academician on the other hand can judge that the student has failed or totally failed hence contradicting student's self evaluation. Also a different academic staff assessing the same SPP can judge that the student has passed. The issue is why not be objective in assessing the SPP and come up with a score that clearly indicates whether the student has passed, failed or totally failed? Introducing the score and grade will necessitate the institution to establish criteria and benchmarks in the assessment process of the SSP.

Why should the annual examination component weigh so much and marginalize the timed test?
The Main Test accounts for 30% of the total course marks and the Annual Examination accounts for 70%. The total marks for the two components are thus 100% i.e. having scored the highest possible marks in each of the components. [The total marks of 100 indicate a perfect score for both the Main Timed Test and in the Annual Examination]. Theoretically the total score is assumed to reflect the

amount of effort expended by the student on the course and his/her mental ability. So, with the regard to distribution of marks, a student is expected to spend more energy and time on Annual Examination than on the Main Timed Test. The article assumes that if the scores in the components are on interval scale, the total scores of Main Test weigh approximately 42.9% of the Annual Examination. The proportion between the two components i.e. Annual Examination and the Main Test is 7:3. Thus, the Annual Examination outweighs the Main Test greatly; implying that the Annual Examination's great significance in the process of assessing students' academic performance. However, some aspects in the assessment mechanism reveal that the real situation does not reflect the above assumptions. Specifically, the Main Timed Test covers half the material that is covered in Annual Examination. In ideal conditions the marked Main Timed Test is returned to the students before they sit for the Annual Examination so that they can identify their weaknesses and strengths in the course in preparation for Annual Examination.

Hence, preparing for the Final Examination is making revision of the material learned for the timed tests. The pass mark for all undergraduate courses is 40% of the total marks. According to the current regulations if a student gets 40 marks in the Annual Examination and gets a zero in the Timed Test s/he will still pass the course. In order to complete a course one is obliged to attempt all three components of the examination. In an extreme case one can get an Honour's Degree solely based on the Annual Examination marks. Thus, once a student knows that s/he can do well in the final examination s/he may become motivated not to study for Main Test. The issue is, why is the weight of one component of the examination so big that it can alone make one pass the course? If the aim is to be competent in the course, the regulations of the examination should compel students to study hard for all components. One option is to reduce the weight of the Annual Examination to the point almost impossible to pass the course entirely depending on it alone. Another option is requiring a minimum of 40% in each component for an

individual to pass the course i.e. 40% of the Main Test and 40% of the Annual Examination.

Why award marks for breaking a fundamental Assessment Regulation?

OUT Examination Regulations for Undergraduate Courses clearly state that, "The assessment shall consist of a two hour written test in the middle of academic year and a three hour annual examination at the end of the academic year" (OUT Prospectus 2011/12, Regulation 1.1, pg. 15). The word "shall" imply that this condition is obligatory to all students without an exception i.e. the two components are integral part of course assessment and that the test will precede the annual examination. However, Examination Regulation 1.8 undermines the above condition by stating, "A candidate who attempts the annual examination without having done the test in that year will be awarded the mark zero for the test" (OUT Prospectus 2013/14, pg. 16).

Although out of scope of this paper, this regulation assumes that in open learning mode a student has to attempt the test and the annual examination in the same academic year. The researcher believes that a student can attempt the test in one academic year and then the annual examination in that year or in the following year. The test marks obtained in the previous year cannot be equated to zero if the student does not attempt the Annual Examination in that academic year. This seems unfair to the respective student. Getting 35 marks out of 40 in the previous academic year can never equal to a 'zero' in this academic year in an ODL mode of delivery. From my perspective this student is much better than students who got 25 out of 40 in the previous or current academic year.

This regulation can, at worse, make a student who attains very low mark in the test to deliberately miss the Annual Examination that academic year with the hope of starting the course anew in another academic year in the future. A 'zero' in interval scale has a quantitative value. A student who attempts a test and does not have a

single response correct is awarded a 'zero'; and the one who has all responses correct is awarded a full mark of 100%. So, based on regulation 1.8, awarding 'zero' for attempting the Annual Examination without having done the examination rewards the students for going against regulation 1.1. This implies that the student is treated the same as a student who attempts the test and obtains a 'zero'. The researcher is of the opinion that a student who prepares for a test cannot be treated the same as a student who does not prepare for the test. A student who attempts the test and gets a 'zero' is theoretically academically better off than the one who deliberately does not prepare to take the test. Briefly, the issue is what is the rationale of having a regulation that permits and rewards one for breaking a fundamental component of the learning process and assessment procedures? The researcher proposes to delete Examination Regulation 1.8 and make all students adhere to Examination Regulation 1.1.

A Pass Mark of 40%!
One objective of having examinations in any institution is the acknowledgement of setting a level of proficiency that one must achieve to be accepted as competent in that particular area of study. This is much more so where criterion reference performance mode of assessment is used, such as at the OUT. Performance above the set level is "Pass" and below that level is "Fail". When joining the OUT, students are aware of the examinations and thus aim to work hard in every course they register for to be in the level of "Pass" and avoid "Fail".

According to Examination Regulation 1.3 for undergraduates "The pass mark for both continuous assessment and annual examination shall be 40% except for the Foundation course which is 50%" (Prospectus 2013/14 pg 16). Coursework evaluation for Master's Degree at OUT for 'pass' is 50% and for Postgraduate Diploma in Education courses the minimum 'pass' is 'B' which is equivalent to 50%. The main concern here is "Why is 40% of the performance considered a 'pass' at undergraduate level and 'fail' for the

Foundation Courses and Master's courses which are one level below and one level above the undergraduate courses respectively?" The author strongly believes that there is a need for the OUT to openly elaborate the rationale for setting 40% as pass mark for undergraduate degree programmes. One wonders the reasons behind setting different points for 'passes' when the institution is using the same interval scale (0-100) to evaluate performance for its programmes. Students at postgraduate programmes are demanded to have a higher performance level than that they had at undergraduate programmes i.e. pass mark of 40% at undergraduate and of 50% at postgraduate.

However, the situation is contrary when moving from Foundation Courses to undergraduate programmes. Pass mark for Foundation courses is 50% and at undergraduate is 40% i.e. the performance bar is lowered when one successfully moves to a higher level! What does this say with regard to the expected level of performance to Foundation students when joining the undergraduate programmes? The same rationale applied for raising the bar at postgraduate level should be used for undergraduate programmes, i.e. pass mark greater than that of the Foundation Courses. On one hand this point is too low to reflect the accepted level of performance at the end of the course. A mark of 40 implies that the student only knows 40% of what s/he is supposed to know. Or in other words, the student **does not know 60%** of what s/he is supposed to know as determined by the assessment mechanisms of the institution.

The implication here is that the institution is satisfied with state of affair since in regulation 10.9 it is indicated that 40% counts as "satisfactory" (Prospectus 2013/14 pg 22). Imagine employing an English Language teacher whose mastery of the language is only 40% of the stated level. Couple that level of language proficiency with the Teaching Practice assessment of only 40% level of competency. Expecting him/her to be a qualified teacher in the field is doubtful. Secondary school students trained only by such a teacher cannot be expected to be fluent in English language. The same can be said to

students' performance in other professions. On the other hand if teachers with performance level of 40% are competent in classroom teaching then there is something odd about the definition of a pass. It is odd since superficially the 40% looks very low while in reality the outcome from such a student is of high quality. Or is it that the examinations and the tests are artificially very difficult that the level of pass must is set very low so that a great number of students can pass the respective course?   One of the objectives of examinations is to motivate students to study hard. Without examinations few students would bother to work hard. Extrinsically motivated students will only aim for 40% performance to realize their goal. On the lecturers' side, those not interested in helping each student realize full potential will be satisfied with 40% performance. Raising the bar to a higher level will necessitate both the students and lecturers to work harder and to raise the quality of OUT outputs and learner outcomes.

Why have Fail, Marginal Fail, Absolute Fail and Total Failure?

Fail can be defined as being unable to attain the required standard as in examination (Collins English dictionary, retrieved 2018) In the OUT examination regulation there is no specific part precisely stating what "Fail" constitutes. Part of Examination Regulation 3.7 reads "Only in cases of *total failure* and on recommendations of the Faculty Board, a student may be asked to withdraw from the University" (OUT Prospectus 2013/14, pg. 17). Going through the Open University of Tanzania Prospectus 2013/14 the author was unable to identify the definition of the term *total failure*! Is failing one course a total failure or is it failing all courses in a given period? There is need to have quantitative definition of *total failure* based on assessment processes for each programme so that the institutional responsible organs can make decisions based on objectivity. (I am just thinking aloud, what happens to a student who rejects the "request to withdraw from the university" after obtaining a total failure? Decisions based on objectively obtained information should be clear, i.e. a student obtaining total failure should be terminated outright from the university and not be requested to withdraw). Examination Regulation 10.9 in specifying range of marks identifies

Marginal Fail (35%-39%) and Absolute Fail (0%-34%). The issue here is why have two categories or levels of Fail? Normally the Fail mark zone starts at the point just below the pass mark. For OUT undergraduate degree programmes there is no need to classify the Fail zone. The consequences of Marginal Fail and Absolute Fail to a student are the same, i.e. one has to do Supplementary Examination or repeat the whole course in case of failing the second time regardless whether it is a Marginal Fail or Absolute Fail. To make the two categories have value one can suggest that for Marginal Fail a student be required to do Supplementary Examination and for one with Absolute Fail be required to repeat the respective course.

OUT has a "fail one fail all policy" i.e. to get a certificate one has to pass all the required courses in the respective programme and failing one course means failing the whole programme. If one gets 90% in all courses except one in which s/he gets a Marginal Fail or Absolute Fail after Supplementary Examination and repeating, s/he is counted as having failed the whole programme. So, why have these different categories/levels of Fail in degree programmes when the repercussions to the concerned students are the same? The author is of the opinion that the classification in the degree programmes should have a bearing on the respective students. The "fail one fail all" policy should be modified whereby a student who passes all core courses but gets a Marginal Fail in one or two elective courses gets a degree. A student who gets a Marginal Fail in a core course should do Supplementary Examination and the one who gets Absolute Fail should repeat the whole course without be given a chance to do Supplementary Examination.

Why should more effort or higher ability amount to no difference?
At OUT the total marks of the course assessment (Main Timed Tests + Annual Examination) is assigned a letter grade as follows (Regulation 10.9, pg 23):

Table 1. Classification of Marks

Letter	Quality	Range
A	Excellent	**70%-100%**
B+	Very Good	**60%-69%**
B	Good	**50%-59%**
C	Satisfactory	**40%-49%**
D	Marginal Fail	**35%-39%**
E	Absolute Fail	**0%-34%**

The source: The OUT Prospectus 2013/14

The letter grades give the examination score a qualitative value with "A" having the best performance and in descending order to "B+", "B", "C", "D" and the lowest is "E" indicating the worst performance. The letter indicates the general area where one's score falls. Being called an "A" student is a great honour in a university. A critical look at the allocation of letter grades relative to scores reveals a number of issues that need clarification. The first one is why should there be a **"B+"** but no "B-", "A+", or "C+"? Is there something special about "B+" or the range of "B" that makes it necessary to be classified into two categories but not so in the other grade letters? Or is the sign "+" representing the word "Very" since "B" is "Good" and "B+" is "Very Good"? The best explanation that the author can think of is that the letter grades are a nominal scale representing an interval scale. The score range among the grade letters differs quantitatively. The table bellow illustrates this, starting with the grade letter with the biggest range in descending order:

Range of Marks

Grade Letter	Range (Marks)
E	34
A	30
B+	10
B	10
C	10
D	5

The source: The Author (2014).

This range of marks of the OUT examination scores are on performance based criterion. The letter with the biggest range is "E", at one of the extreme end which represents the Absolute Fail i.e. a range of 34 marks. The second letter with the biggest range is "A" with 30 marks and then followed by "B+", "B" and "C" with each having a range of 10 marks and the smallest range is "D" with 5 marks. The issue here is why the range of "A" so big? The rationale for having the big range of "E" at the other extreme cannot be applied in the opposite extreme. The principles of normal distribution cannot be applied to university students' performance since what is being measured is related to mental ability and level of competency in the respective field. Those in the general population with low learning or mental ability have already been screened out in the previous levels in the education system, so it is impossible to have them at a university level. One would expect a negatively skewed distribution at a university level in regard to mental related performances.

In OUT the grade letter is more important than the marks it is based on. There is no difference between getting 40%, 45% or 49% since all are "C" amounting to "2" points, also 50%, 55% and 59% are "B" and amounting to "3" points each. Grade letters determine the Cumulative Grade Average Point (GPA) and the classification of the degree awarded and, as such acts as a factor in student motivation to learn. In many cases GPA has impact on the future of the respective student e.g. to purse a Master's degree programme at OUT the prospective student must have at least a cumulative GPA of 2.7; to be a Tutorial Assistant or Assistant Lecturer at OUT one must have a cumulative GPA of 3.8.

In theory a student who wants to have a better grade is motivated to study harder to get more marks that will be translated to in higher value letter grade. However, the range of "A" may have a negative impact on students needing to achieve the optimal performance in the course. The range of pass mark area is 61 i.e. 40%-100%. The range of "A" is 31 marks, making it more than 50% of the pass mark area! In

fact the combined range of "C" to "B+" is 29, less range than that of one grade letter. An increase of 10 (sometimes as little as 0.5%) marks moves one from "D" to "C", "C" to "B", "B" to "B+" or "B+" to "A". At an extreme situation an increase of 16 marks moves one from "E" to "B" and an increase of 25 marks from "E" to "B+"   i.e. from "Absolute Fail to Good" or "Absolute Fail to Very Good" respectively! Once one gets 70% s/he is motivated not to learn since even an increase of 29 points makes no difference in the letter grade, GPA or the classification of the OUT degree certificate. The issue here is why an increase of 10 points or less is more important and significant in one's future while not acknowledging an increase of 30 points. Is OUT satisfied with motivating students to acquire only 70% as the optimal performance and uninterested in making her students realize their full potentials?

 If 70% is "A" with qualitative value of "Excellent" is it possible for 85% -100% to be "A+" with a qualitative value of "Marvelous"? (Just thinking aloud, "If the range of 50%-69% is categorized into "B" and "B+" why not categorize the range of 70% -100% into 70%-79% as "A-", 80%-89% as "A" and 90%-100% as "A+"?). The author is of the opinion that a student with 100% material is quantitatively and qualitatively superior to the one with 70% material. Treating them as equal or ignoring the differences in performance is unfair and detrimental to the development of students' full potentials in their respective courses or professions. One can also speculate that there are lecturers who are eager to facilitate learning conditions that can lead students to perform in the range above 70%.

When "more" is equal to "less"!
In criterion reference based performance all candidates can pass or fail depending on the level set for acceptable performance. The performance of one individual or all individuals has no effect on the performance of the other individual(s). At OUT there are students who fail in one or more courses. A fail requires doing Supplementary Examination i.e. do the Annual Examination of the respective course only and not the Main Test. A second fail means relearning the course

and redoing the Main Test and the Annual Examination. A third fail leads to discontinuation from the programme. Giving students who fail a chance to do supplementary or repeat the course implies failing once or twice is not the end of the world and there are chances to the respective individual to improve his/her academic performance to the extent of passing the course. Sadler (2005) point out that grading refers to evaluation of course in degree program whereby scores serve as raw material that is converted into a different symbolic representation of overall achievement. Grading symbols used by OUT are A, B+, B, C, D and E. the table below indicate the symbolic representation as used by OUT.

Grade	Quality	Marks	Grade Point
A	Excellent	80%-100%	4.4-5.0
B+	Very Good	70%-79%	4.0-4.3
B	Good	60%-69%	3.0-3.9
C	Satisfactory	40%-60%	2.0- 2.9
D	Marginal Fail	35%-39%	0
E	Absolute Fail	0%-34%	0

The source: The Author (2014).

Examination regulations 1.4 and 1.5 state the maximum grade attainable in a supplemented subject and/or repeated subject for the respective student is a C. So, according to OUT regulations any marks above 40% (pass mark) in the second or third attempt is counted as a "C" and translated into 2 points. Thus, whether one gets 40%, 50%, 60%, 85% or 95% it all amounts to "C"! The issue here is, is the second attempt performance of 85% the same as the first performance of 40% and worse off than the first attempt of 50% or 60%? Translating these scores to language proficiency for example, who is a better English language teacher, the one with 50% proficiency in the first attempt or the one with 75% proficiency in the second attempt? By giving "B" for 50% to one teacher and "C" for 75% for the other teacher, the employer will think that the first teacher is better in English language proficiency than the second teacher. The author acknowledges that being given a second chance to pass is a privilege and that second learning of the same material is often easier than the first learning.

Also, those who pass in the second or third attempt cannot be treated equally as those who pass in their first attempt. However, based on using the criterion reference assessment the letter grade should at least reflect to some degree the level of performance of the student in the respective course. Also the letter grade for repeating students should act as a motivation to achieve a higher score as possible rather than just passing the course by getting 40%. For the second attempt the score for pass could remain the same but have a higher score for "B", "B+" and "A". An example is illustrated in the table below:

Conclusion

This paper has identified some of the issues in the OUT grading system that needs to be discussed and explained so as to remove ambiguities to the concerned community. The objective was not to show the deficiency of the system but rather use the information provided to raise a healthy academic discussion on this very important aspect of the learning process. In the end the OUT grading system should motivate students to learn to their fullest potential; be accurately assessed and get the score and grade that reflects student true academic performance.

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Lesson Preparation Experience on Learner-Centred Education among College Tutors in Tanzania

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Abstract

This study explored the practice and perceptions of social studies' tutors in preparing lessons based on learner-centred teaching approach in teacher education colleges in Tanzania. It used a qualitative case study design. Four data collection methods including focus group discussion, semi-structured interviews, documentation, and reflective journals were used. Eleven tutors in social studies and college leaders were purposively selected from Government teachers' education colleges to volunteer in the study. Critical discourse framework blended with electronic software was used to analyze data. The results revealed partial knowledge of tutors in learner-centred teaching that influenced their pedagogical and professional competences in teaching preparations. For example, tutors showed partial competences in dealing with large classes, negotiating cultural aspects, teaching in dual instructional language education system, and setting assessment for students' learning. The study recommends for collective efforts among educational stakeholders to enhance the efficacy of college leadership, continuous professional development, instructional language policy, and teaching materials to implement new approaches for quality teaching and products. Further, the study recommends the need for a similar study that could investigate tutor's practices on learner-centred teaching in classroom context.

Key words: Learner-centred teaching, lesson preparation, college tutors, social studies, teacher education, Tanzania.

Introduction

Shifting perspectives from knowledge-based to learner-centred education is the current critical literacy debate for practitioners in schools and colleges worldwide. Putting the student at the centre of teaching and learning reflect the philosophy of information processing to which the individuals tend to understand the world following the existing reality (Piaget, 1977 & Vygosky, 1986). This view advances that teaching is ought to engage a student in an authentic activities, previewing individual experience, critical analysis and debates to enhance awareness of the existing situation for holistic learning (Taylor, 2009). Holistic learning embrace values of teaching centred on student traits. The values include collaboration, deep learning, reflection, engagement with evidence, and caring of others during knowledge generation. Arguably, when curriculum practitioners successfully design such values, they were not only engaging learners in knowledge construction but also developing them physiologically and psychologically (Windschitl, 2002).

Literature

Scholars view teaching as inclined to the learner's traits needs well-designed lessons that consider five aspects: What to teach, how to teach, how to evaluate, time of learning and consolidation (Adams, 2006; Hunt, Wiseman & Touzel, 2009; Karagiorgi & Symeou, 2005). These aspects are ought to engage a teacher in collaboration with a student to plan learning activities. Adam (2006) noted that, asking pupils what they wish to consider [important for learning] and how they wish to investigate and present their work engenders feelings of importance and worthiness in the upcoming learning session. Participation in the organization of learning activities promotes student's sense of ownership in learning session itself, as Cranton (2010:185) explains:

> *The participatory planning process creates enthusiasm and even excitement regarding the upcoming classes. It also challenges*

> *their perspectives that the teacher always needs to be in charge of content ... it is well worth the effort when learners know they have designed "our course.*

Teachers are important in the setting and organising what a student wants to learn, how to learn, and in what context because of their professional and pedagogical knowledge, which a student lacks (Hunt *et al.*, 2009). That means students are more likely to participate in activities related to deciding and preparing, assessment tools, teaching-learning materials, time of learning as well as methods of learning. This mode of student engagement in lesson preparation reflects that an individual student is responsible to her own learning. Apart from being a lesson co-planner, another role taken by teachers is to support students through scaffolding to be able to plan for their learning effectively.

For example, Baviskar *et al*. (2009) organised the ideal procedures for successful knowledge construction in classroom, which could be abbreviated as ECAR: eliciting prior knowledge of the individual, creating cognitive dissonance, applying the knowledge and giving feedback, reflecting on process of knowledge construction. According to Baviskar *et al*. (2009), these procedures help to accommodate all activities related to knowledge generation including learning tasks, assessment, use of learning materials, management of class behaviour, and the content and learning strategies.

Designing a lesson that triggers thinking of students regarding their prior knowledge is of importance to teachers (Karagiorgi & Symeou, 2005). When the student's prior knowledge is not linked to the new process of knowledge generation, there is a possibility of this student to acquire nothing in the current construct. Therefore, teachers are urged to plan lessons that are rich of formal pre-tests or quizzes, informal questions on the lesson, formal interviews for students, teaching aids, tasks which require students to present in classroom, and assessment tools to check students' completion of learning activities (Kitta & Tilya, 2010). Teachers are urged to create higher-

order learning tasks that enhance divergent thinking and confrontation in non-competitive and harmonious environment for knowledge generation (Adams, 2006; Karagiorgi & Symeou, 2005). Tasks which are more likely to engage students in interrogating about their prior and foreground experience between themselves in relation to concepts and principles of their subject being taught. Such cognition process needs teacher's attention during lesson preparation, the failure to integrate divergent thinking in learning tasks the students might not learn anything or the learning experience will be superficial. Students in classroom are expected to generate knowledge and apply it in life context to determine relevance and possibilities of improving it (Langan *et al.*, 2009). To achieve this, teachers are to prepare learning tasks that promote dialogue among students and develop new constructs as they modify their preconceptions.

In addition, teachers need to prepare tasks and guidelines to be used in assessing the validity of the knowledge created and setting tasks for student discussions and presentations as well as conducting quizzes. Whilst students are engaged in such tasks, they are expected to utilize their experience in dealing with new learning by establishing concept links within the subject or field of study and in other disciplines. Reflection on the learning process is important for teachers and it allows them to prepare assessment guides to determine students' performance on what they learned, how they learned and on the practicality of knowledge in addressing the present and future life situations (Schon, 1987). Teachers may design tasks that involve students in reflective journaling, stating the strengths and weakness used in knowledge construction, and explaining an issue to colleagues.

Nevertheless, student-centred view recognizes assessment as a strategy used to understand the connection between learning process and tasks in the context. Student biased teaching embraces assessment integrated with learning and teaching activities. The students play an active role to assess what they have been learning

and the ways they have used to preview their experience (Karagiorgi & Symeou, 2005). In this view, assessment is carried out through portfolios, peer and self-assessment, negotiated assessment, diaries, logs and journals, profile assessment, practical tasks, group work, oral examinations, performance assessment and projects, just a few (Kitta & Tilya 2010; O'Neiland McMahon, 2005). According to Adams (2006) and Karagiorgi and Symeou (2005), these assessment methods serve four main functions in learner-centred teaching:

a) It enables teachers to gain insights regarding knowledge created by learners and the way of improving those results. It deals with the means to differentiate issues that can be learned by students without support and those which need support from teachers.

b) It motivates teachers and students to predict the needs of learning for future. Teachers and students, through talks and dialogue, can determine issues that need further discussion – a motivational function.

c) It is a means to obtain feedback and feeding forward regarding the issues taught or learning process.

d) It enables teachers to assess various ideas, concepts, and opinion based on goals and non-goals assessment through multiple assessors – assessment methods.

More importantly, teaching and learning strategies are crucial in organising the manner in which activities are implemented by teachers and students. The student-centred view recognises learning strategies that are active, authentic, collaborative, and which embrace multiple perspectives. For example, teachers may design lesson that involve students in case studies, excursions, computer-aided tasks, and portfolios writing which stimulate active learning (Baviskar *et al.*, 2009). However, to promote authentic learning environment teachers are expected to prepare their lesson to enable the students to interact with the environment or real life practices. Authentic practices organised around case-based and reflective thinking, problem posing and deep learning tend to enhance relationship among students and teachers. Such practices help students to learn reasoning and arguments building skills. Teachers are urged to set lessons

integrating tasks that could help students develop such skills to (i) provide a set of directions to make arguments, (ii) use question prompts to promote construction of argument, (iii) collaborate with individuals to build arguments, and (iv) set scenarios that support students to view the arguments through symbols and graphics (Taylor, 2009). Collaborative learning environment strategy enables teachers design cooperative learning activities that stimulate critical reflection among individuals and justification of their ideologies (Karagiorgi & Symeou, 2005; Taylor, 2009). The strategy requires teachers to eliminate social inequalities and promote heterogeneous group compositions. This learning strategy typically reflects Dewey (1950: 198) views that, "*the teacher is a learner and the learner is a teacher without knowing it, a teacher-and -upon the whole, the less consciousness there is, on either side, of either giving or receiving instruction, the better*".Collaborative activities should be planned in dialogue form for students to hold discussions, conversations in small groups and presentations. Hence, collaborative learning establishes a social avenue to realise conditions for exercising effective discourse, abides by a holistic view that integrates cognitive abilitties and develops critical reflection on individual's beliefs.

However, teachers need to set some scaffolding and coaching strategies to assist students with limited knowledge to share about the studied issue. Teachers are urged to consider multiple approaches when setting lessons to allow divergent representations of various themes. According to Karagiorgi and Symeou (2005:20), "*any specific concept must be approached through a wide range of learning contexts to transfer knowledge in broader range of domains*". To achieve the transfer of knowledge to range of domains, lessons should be prepared to accommodate different cases and conditions of understanding concepts in varied seating styles and motivational strategies. Stated somewhat differently, lessons need to be designed to constitute multiple learning techniques, teaching aids and seating arrangement to vary the situations in which concepts are constructed and promote knowledge retention and transfer to real life. Therefore, it is the role of tutors (or lecturers) to utilize their pedagogical and

professional knowledge in preparing such learning environment. Students engage in such environment for deep learning of similar concepts in different learning situations and apply it in real world. However, it is questionable to whether the Government college tutors design their lessons in compliance to the new teaching paradigm to enhance quality education among students. This doubt, hence, generated three key questions for investigations in this study: How does tutors prepare lessons cognisance with learner-centred approach in teaching social studies. What are the beliefs of tutors towards students' roles to prepare for learning on learner-centred teaching? In addition, what are the tutors' perceived challenges in preparing lessons on learner-centred education? To achieve this, the methodology for the study was thoroughly described.

Methodology

This study used a qualitative case study that investigates tutors' experiences in lesson preparation on learner-centred teaching. Case study is a powerful design to investigate social science disciplines: sociology, anthropology, social studies, political science, law and education (Johnson & Christensen, 2012). Case study selection was based on its ability to view a phenomenon from different dimensions including contemporary, multi-methods, social and structural, holistic and controllability (Grunbaum, 2007). Thus, case study was used to explore meanings attached to learner-centred teaching phenomenon as participants experienced it from their social and cultural environment. The study was conducted in three research sites based on three Government teacher education colleges – located in urban and peri-urban areas – were selected. A sample of eleven social studies tutors with 3 years minimum job experience including college leaders were purposively selected to volunteer in the study. The researcher collected data from 9 tutors (3 each) by reviewing teaching rubrics (schemes of work, lesson plan, lesson notes, teaching materials, and syllabi) and using in-depth semi-structured interviews regarding their perceptions and practices in designing lessons that embrace learner-centred teaching. College leaders (4 leaders each) were engaged in a focus group discussion and their necessary official

documents were reviewed. As Magashoa (2014:111) urges, "a reflective stance is incorporated wherein researchers cannot be neutral observers" some issues observed and considered to be useful for research during data collection were recorded through reflective journals by the researcher. Critical discourse analysis model was considered appropriate for a qualitative study, as it needs multiple disciplines to understand the ways language is used to communicate knowledge when building social institutions (Magashoa, 2014). The model subscribes to critical theories that deal with the understanding of behaviour in social interactions, reasons for interactions, relationship between social groups and individual by employing positivist and non-positivist designs (McLaren & Kincheloe, 2007). Critical theories study issues of politics, economics, education, gender, religion, culture, justice, power and how these can influence individuals and social life and how they can change human sufferings.

Critical discourse analysis takes different forms: thematic, print text and oral text analysis (Magashoa, 2014). Critical discourse analyses the ways various man-created symbols and events describe human behaviour including strengths and weaknesses and how these behaviour relate with those events. Based on the understanding of this forms, the researcher analysed discourses in language and artefacts generated by participants to capture their position, ideologies and ideas as they are spoken, or produced in the form of written texts, pictures, drawings and oral messages for sense-making. Documents reviews were recorded in different forms, interview transcripts, and journals obtained from participants were processed based on analysis model and presented findings in themes and written quotes. Electronic software backed up the organisation of some data, which were presented in charts and figures. Triangulation of methods, member checking, and consideration of research ethics, informed consent, and anonymity were observed in carrying out the study to ensure trustworthiness.

Findings

The study findings were organised in different themes that responded to research questions that guided the researcher to investigate practices and perceptions of social studies tutors in teaching preparation based on learner-centred approach in teacher education colleges. The key study findings focused on tutors' beliefs on learner-centred teaching, preparation experience and their perceived challenges in preparing lessons on learner-centred teaching.

Beliefs of tutors on learner-centred teaching

Results generated from interviews, observation, and review of tutors' artefacts revealed that there were different names, which referred to learner-centred approach. Such names include the social constructivist teaching, learning by doing, participatory approach, learner-centred, shared learning, competence-based teaching, and paradigm shift teaching, as examples. They described features of the approach to justify their beliefs on the use of the approach, which were synthesised to capture their common understanding about learner-centred teaching. Findings indicated that tutors had the belief that the approach embraces collective learning responsibility, harmonious learning relationship between tutor-and-student, authentic learning, resource-rich learning environment, motivational and supportive learning setting, and students' learning of pedagogical knowledge to be able teach crosscutting issues. The beliefs informed what they considered significant aspects when planning to teach social studies, as one of the tutors said:

> There are some common issues to consider in preparing the lesson plan; you have to consider time of [student] learning, learning materials, student ability, and the situation of the class ─ the location of the period in a day.

Tutors' preparation experience in learner-centred teaching

Results based on interviews, documents reviews and reflective journals revealed that lessons were organised cognisance to seven premises including culture of the place and institution, content organisation, assessment and evaluation procedures, facilitation and learning techniques, facilitation and learning aids, time allotment for student learning, tutors' perceptions on student participation and dominance in lesson preparation.

Place and institutional culture

Culture of a place was an important aspect considered by tutors when designing their lessons for teaching. The culture included the formal and informal aspects, such as language of instruction, teaching artefacts, norms of institutions and social obligations tied up tutors' role of facilitating students to learn social studies. The institution norms involved collaborations with college community and the people around on social matters including attending funerals and celebrations. The majority of tutors considered such occasions during their teaching preparation by indicating either the dates and time of the events or setting learning activities to be provided to students. Kiswahili as the national language was used for teaching different subjects including social studies.

However, tutors noted that there were few teaching materials written in Kiswahili and the situation made it difficult for them to teach social studies. However, tutors translated English materials into Kiswahili to use them in teaching. It appears that they were not confident with their translation. Meanings they assigned to different concepts and words translated in Kiswahili seemed to be vague and somehow difficult for the students to comprehend. Findings revealed that the preparation of teaching aids reflected the tutors' creativity of utilising local materials to improvise teaching aids. For example, teaching aids were improvised from crops: banana leaves, ashes, millet, cassava floor, clay soil, and bamboo woods attracted attention of students in learning. As one narrated:

> *During classroom teaching, we tell them to gather some of the information concerning a certain event — for example in this environment, they can collect information related to tea production, banana production, and so forth. Therefore, they have a lot of information that relate to the learning environment.*

Moreover, some tutors planned lessons which intended to engage students to interact with cultural environment. It was noted from findings that the college owned small farms in which the students were engaged to learn cultivation of different crops and animal keeping. As one argued that, *'the students apply knowledge of our college farms in improving the college surroundings'*. Thus, tutors appeared to believe that planning lesson in account of such cultural environment provided the opportunity of students to relate classroom learning to their real cultural setting. This view of linking actual learning to real life setting appears to corroborate with what tutors' believed on learner-centred approach.

Content organisation

Results show that content organisation for student learning involved tutors analysis of syllabi. The results showed that preparations considered the knowledge level, ability of the student to learn, teaching methods and strategies, the context and class size as well as possibilities of accommodating crosscutting issues for student learning. Moreover, the lessons in social studies were organised to facilitate short-and-long-term learning plans. While short-term plans (lesson plan) relied on long-term plan (scheme of work) to organise classroom logistics and day-to-day interaction activities with the maximum of 3hours period per week, the long-term plans accommodated the construction of wide coverage of activities to be accomplished within a period exceeding a week, a month or semester. Thus, tutors organise student-learning activities around the prescribed national curriculum and none of the student or the tutor had the opportunity to transform the mandated curriculum. Students

and tutors have the opportunity to search for materials that solely address the mandated curriculum, as one tutor explained:

> *Sometimes, I cannot follow the order of topics in syllabus. Instead, I check if there are means to obtain books with knowledge related to the topics from syllabi. Perhaps, the books that have relevant knowledge of the topic are not found; I can just skip to teach [it] until when the materials are available. Let say, if I search and obtain the [teaching] materials from the internet, I just decide to teach the topic.*

It was noted from the findings in Table 1 that the emphasis in the preparation of long-term plan engaged tutors to organising learning competencies cognisance to topic (s) time of learning, teaching and learning activities that were accompanied by statements of assessment procedures, teaching materials, and interpretation. Moreover, every teaching and learning activity was planned to achieve a particular competency, to which the tutor indicated the assessment tool to be used to determine whether the learning activity or task assigned to the student has been completed based on the prescription/instruction. This way of planning suggested a reflective practice among tutors and students during teaching and learning process, which was a recommended procedure for lesson emphasising on achieving some specific competences to individual learners.

Table 1: Scheme of work Extract

Competence	Topic/ Sub-topic		Periods	Teacher's activities	Student's activities	References &Teaching aids	Assessment activities	Remarks
Develop competence to understand the concept of poverty as it manifest in different contexts and strategies to address it.	Poverty	Indicators of poverty	4	• Instruct a student to read about the concept of poverty, and types of poverty. • Secure learning materials on the meaning of poverty indicators from internet, books, and journals. • Explore different levels/types of poverty in various sources. • Prepare assignments and instructional activities	• Read from different sources about the concept of poverty. • Find out the different levels of poverty and its indicators • Explore types of poverty from different sources.	Nyerere, J. K. (1967, March). *Education for self-reliance*. Dar es salaam, Tanzania: Government Printer. Flip chart illustrating levels of poverty and its indicators	Instruct and check if a student is motivated to read the concept of poverty, levels of poverty, and types of poverty via brainstorming.	• The poverty concept and its types are taught correctly and completed on time. • The importance and stages of investigation were not completed. • There is a need to repeat teaching.

Moreover, results based on interviews and documents reviews showed that content organisation included the consideration of widespread global issues. Such issues related to terrorism manifestation, gender, civic education, moral and life skills education, drug abuse, and HIV/AIDS education were cited as examples. In the preparation of lessons, teachers reviewed the syllabus including the recommended global issues to be taught in conjunction with a particular topic for emphasis. As tutors asserted:

> *For instance, the issues of terrorism are historical events. Where can a student learn these? …We can put some of the crosscutting [widespread] issues in the syllabus, such issues of entrepreneurship and technology, which the world works with them now.*

Another tutor added:

> *We are encouraged to put such issues as gender balance during lesson planning. Maybe I indicate the number of girls and number of boys who will be assigned to a task, to draw a map. … How many girls and boys will be assigned to present a certain theme?*

Further, it was deduced from the findings that integration of those new ideas in teaching would be exposing the students to the current global information that influence their daily life. Students should not be isolated from the exposure to global opportunities to help them think beyond their context of classroom and society, the situation assumed to engage students in the deconstruction and construction of new knowledge relevant to the context. Hence, preparation for lesson facilitation that integrates critical issues intended to link students to what they observe, hear, and experience in their daily life but lack ways and knowledge of alleviating them. In doing so, tutors are expected to help students to share experiences which could prepare them adapt strategies towards solving existing life inconsistencies

and trauma in society. As the results indicated that the majority of tutors in social studies subjects considered the inclusion of diverse contemporary issues in preparing their lesson for teaching with one tutor arguing had this to say, *"currently there are some emerging issues ... students have low ability to express things. So, we facilitate knowledge to students up to a level that we can...!"*

Teaching in large classes

Furthermore, the study revealed some tutors who believed that when the class size and student ability to learn a particular content is balanced with the time of learning, they are were likely to achieve positive impact on student's construction of knowledge. In this study, the noted large classes ranged between 80 and 250 students. The study indicated that the student ability and class size determined the choice of facilitation strategies, content level of difficulty, teaching aids, and time of learning. Hence, it was revealed that the weaker the student ability, the more resources were needed to prepare for supporting the student to learn.

Correspondingly, findings report that the larger class, the more teaching materials were needed by the tutor to prepare for facilitation. Therefore, results suggest that as tutors needed to prepare more resources (learning aids, time, and energy) to facilitate student learning, there was increase in cost of mobilising those resources from different sources. Such complications of lesson preparation for knowledge generation were reported to be the most tedious task for tutors to accomplish than the actual classroom facilitation itself. Furthermore, it was revealed that teaching in large classes was the most challenging practice in colleges particularly when tutors needed to decide the best strategy for organising learning activities, which could engage students effectively in knowledge construction. One tutor commented:

> *The number of students is bigger than the size of the room. ...*
> *Civics is not [like] mathematics! You have to read ... then they*

> *listen. You have to... [involve] them. You have to use groups.*
> *How can I form groups [of students] in such environment? It is*
> *discouraging grouping students - who are to do movement from*
> *one part to another in the room.*

Considering this situation, the study reported successful facilitation strategies and student supports, which were considered by tutors' preparations for effective teaching in large classes. For example, the study indicated brainstorming, interactive lecture, whole class discussion, demonstration, drawings, small group discussions and presentations, group work, internet search, fieldwork, case studies, library search, questions and answers as effective techniques in teaching large classes. Such strategies were believed to enhance cooperative learning in which weaker students learned from stronger ones through sharing views as colleagues in knowledge building process. Thus, the study noted that lessons designed with cooperative strategies were expected to create harmonious learning situation among students.

Assessment and evaluation procedures

Furthermore, the study reports different assessment types organised by tutors to facilitate teaching and learning activities. As documented from their teaching artefacts, such assessments included criterion-referenced and norm-referenced forms. Results highlighted that students wrote portfolios, seat for quizzes, write exercises, semester, and annual exams. In addition, results indicated that tutors included some assessment questions to reflect in their teaching and learning actions during interacting with students – norm-referenced assessment. For example, norm-referenced form of assessment was designed to determine the overall performance regarding teaching and learning process including assessment on the use of teaching methods, teacher-student conduct, discipline issues, and general class conduct. Results showed that a few questions were designed to guide tutors to solicit information from students concerning their

facilitation process in classroom. Such questions gathered student beliefs regarding learning and teaching behaviour and more areas for support. As the reviewed documents indicated:

> *Assessment strategies in lesson plan involved the statement of student learning that explained what an individual student or group of students were required to achieve. The tutor indicated student's assessment procedures including portfolio writing, exercises, tests, quiz, and tutor assessment questions for example, did the student define the concepts planet and earth, explained the shape and size of the earth, and the sources of energy on earth?*

However, the study showed that tutors prepared summative evaluation as tools to determine student's achievement in the mastery of content on weekly, monthly and semester exams basis. Unlike the formative assessment that was mainstreamed in the learning process, summative evaluation was done separate from the normal teaching and learning activities. Table 2 illustrates the assessment and evaluation procedures organised by college tutors in social studies in long-and-short terms.

Table 2: Assessment and evaluation procedures

Assessment types prepared for long-term plan	Assessment types prepared for short-time facilitation
° Providing project work, ° Providing student teachers tests, ° Providing exercises, ° Checking individual or group tasks, ° Providing portfolio tasks, ° Observing student participation in learning activities, ° Essay questions or project work ° Monthly tests, ° Semester exams,	° Checking student's answers to questions, ° Making follow-up of student's participation in learning and group discussion, ° Checking attention of student teachers in learning, ° Providing student teachers' quiz, exercise, tests, assignments and to mark them, ° Checking student teachers' explanations if correct during learning, ° Providing essay questions and project

° Single lesson teaching practice (SLTP).	work, ° Listening to student teachers' remarks, ° Lecturers ask themselves a question: did the student teachers achieve what I wanted them to do?

Facilitation and learning strategies

The study reported that facilitation strategies subscribed to the social constructivism paradigm whose emphasis bases on active methods of knowledge construction. Active methods of learning were organised depending on the learning situation as proposed in the subject syllabus. It was noted that tutors expected to collaborate with students to design strategies for both long-term activities and short-term activities that could be accomplished according to learner-centred teaching. Learning tasks in long-term and short-term plans were linked to a facilitation strategy appeared to support learning aids for effective student learning. Tutors seemed to dominate the preparation of learning process. They selected from the syllabus some techniques that were relevant to enable students generate knowledge. They organised learning activities based on such facilitation techniques as interactive lecture, problem solving, mingling, discovery method, jigsaw puzzles, visiting elders, survey, individual work, assignment, and inviting expert speakers, which were considered effective in their context of teaching.

However, findings indicated that although tutors designed and selected these facilitation techniques, they demonstrated limited competence in describing learning activities and tasks for long-term and short-term. The learning activities were worded using similar action verbs and tenses. Such wording and tenses sounded as to guide student, to brainstorm, to explain, to guide demonstration on, to guide group discussion, to present, to investigate, just to mention a few. These wording styles suggest similar instructions for both plans. Ideally, whilst the instructions for long-term could propose what the tutors and students should design or prepare to achieve and

particular learning outcome. The short term plan instructions could appear in simple present tense, suggesting the roles of the tutor and student in the learning process. For instance, in writing activities for students' preparation to learn in the long-term plan, one tutor wrote, *"the student to seat in groups to discuss the different levels of poverty and its indicators"*. The same statement was observed in the short-term plan. The preparation practice was to copy learning tasks for the long-term preparation schedule and paste them to learning task of the actual instructional plan. This practice of copying and pasting of learning task among tutors reflected limited pedagogical competencies in learner-centred approaches.

Furthermore, it was noted from the findings that the selection of facilitation strategies in the short-term plan was organised based on learning objectives. Examples of techniques that were observed in short-term plans included brainstorming, small group discussion, group assignment, internet and library search, drawings, demonstrations, class discussion, questions and answers. These were the most selected strategies, which tutors used to organise facilitation of learning activities. Informed by learner-centred beliefs, tutors categorised facilitation of learning activities into four stages; previewing the past experience of students, generating knowledge from the past, applying the knowledge in diverse setting, reflection on the knowledge generation, and consolidation. Accordingly, activities for the student and facilitator were clearly distinguished stage-by-stage in their respective column. The facilitation of learning activities in each stage were intended to involve students sequentially in one or more techniques, which were expected students to test their thinking in a variety of learning communities, as one tutor explained:

> *The issues I consider, first is the learning objective. I plan the learning objective because it [lesson plan] helps me to know the issues to teach when I enter the class. I ask myself: What activities should I do in this stage? What activities should the student do in this stage? Therefore, I put more emphasis on the*

specific learning objective and the stages of lesson presentation particularly at the knowledge generation stage because I deliver the new knowledge here [in this stage].

Facilitation and learning aids/materials

The findings show tutor's consideration of learning aids and technological resources to prepare for teaching. It was revealed that learning aids were designed cognisance to student-learning outcome for enhancing relevance and effectiveness during knowledge generation. Moreover, it was found from this study that technological resources such as CDs, DVDs, internet, radio, and computers were used to organised content for student learning. The use of technological resources in teaching preparations was mostly limited to tutors. Students hardly had the opportunity to use them because of strict rules and schedules provided by the college management on student use of computers.

Findings showed that students were allowed to use computers under supervision only when allowed to do so. This situation was reported to be caused by two reasons: First the fear of the college management about the students to damage the computers and second the shortage of computers in the college. For example, it was noted from the findings that one college with more than 300 students had 25 computers, a situation posed serious problem of demand ratio between computers and users. Hence, the geographical factors limited access to power sources, as noted in one of the college that was not connected to the national grid. Alternatively, the college used solar power, which appeared to be not sufficient to support computer use. This situation provided difficult moment for tutors in preparing lessons.

Likewise, the findings revealed that tutors resorted in improvisation of teaching aids and use of ready-made materials to prepare their lessons. Some of the ready-made and improvised materials were charts, globe, samples, photographs, pamphlets, maps, diagrams, and

real things. In addition, it was found that most of the books were written in a foreign language apart from their instructional language. For example, while books were in English language, the medium of instruction was Kiswahili Language. Tutors had to translate the books into Kiswahili in order to prepare their lessons. However, they appeared to be not confident with the translation exercise because the translated concepts in some instances provided them different meanings. One tutor asserted:

> *We do not have books that are in Swahili. You [We] are forced to read various books from different sources and yet they are written in English language. You [we] need to translate them. Therefore, you [we] find that the meaning of the translated information is different from the original ones.*

Thus, the study proposed the college to be enriched with teaching materials published in Kiswahili, which is the medium of instruction and well known by students and tutors. Given the limited access to opportunities of technological resources and non-technological resources, tutors and students had difficult to collaborate effectively in lesson preparation.

Allocating time for learning

Findings analysed from interviews and documents revealed that time allotment was one of the major factors considered by tutors when designing learning activities, deciding teaching aids and teaching and learning strategies in relation with ability of students to learn. It was noted from this study that tutors differed in allocation of learning time depending on the content the individual tutor expected to cover in a week or a year. The differences in time allocation to the learning activities appeared to contradict the learner-centred ethos, which needs provision of enough time for the students to engage in knowledge generation. For example, one tutor argued, "*students will*

> *spend more time when you opt for techniques that involve them more in the learning process*".

Additionally, findings showed that learning time was planned based on short-term and long-term works. In this context, teaching and learning time for social studies was 194 days per year in which weekends and other important events including examinations and college wide meetings were inclusive. However, the number of periods indicated in the syllabus appeared to be the same in social studies subjects regardless of the large content coverage in the subject. For example, it was noted in the findings that while geography had seven topics, history constituted 14 topics. The study revealed that the Ministry of Education combined topics of the two subjects to form a single syllabus – called 'integrated social studies' syllabus. However, topics for each syllabus remained independent from one another. Indeed, this was a technical problem of curriculum organisation. The disparities in content coverage between civics, history, and geography subjects appeared to complicate the decision of learning time among tutors to address the content effectively. As reviewed documents indicated:

> The syllabi have combined history and geography topics. *According to current teaching guide, there are two periods per week, which cannot match the … number of days to teach both subjects in the syllabi. Therefore, there is a big difference between the allocated time of teaching and the number of topics. The time allocated is not enough to teach the large number of topics. Although they have combined geography and history topics, in practice they are taught separately.*

Nevertheless, findings revealed variation in time allocation per content in the long-term plans that appeared to influence tutors' decision of actual learning time as shown in the short-term plans. This suggested the likelihood to have in-effective instructional

activities. Figure 1 illustrates the variation of tutors in time allocation per topic (s) designed to facilitate learning in classroom. For example, Figure 1 shows that while Edgar and Fusi allocated 18 and 15 hours to facilitate two topics respectively, their counterparts Hamis, Idd, Besta, and Chake though had some variations, they had considerable minimum numbers of hours (The names used are not real) . Although Fusi, Hamis, and Idd designed the periods in 60 minutes as compared to Edgar, Besta and Chake who allocated 45 minutes per period, the results appeared to vary in number of hours and periods allocated to facilitate the lessons. Therefore, tutors' time allocation for teaching varied between individual's beliefs towards effective implementation of learner-centred approach and the strategies planned by this individual tutor to accomplish the centralised content coverage.
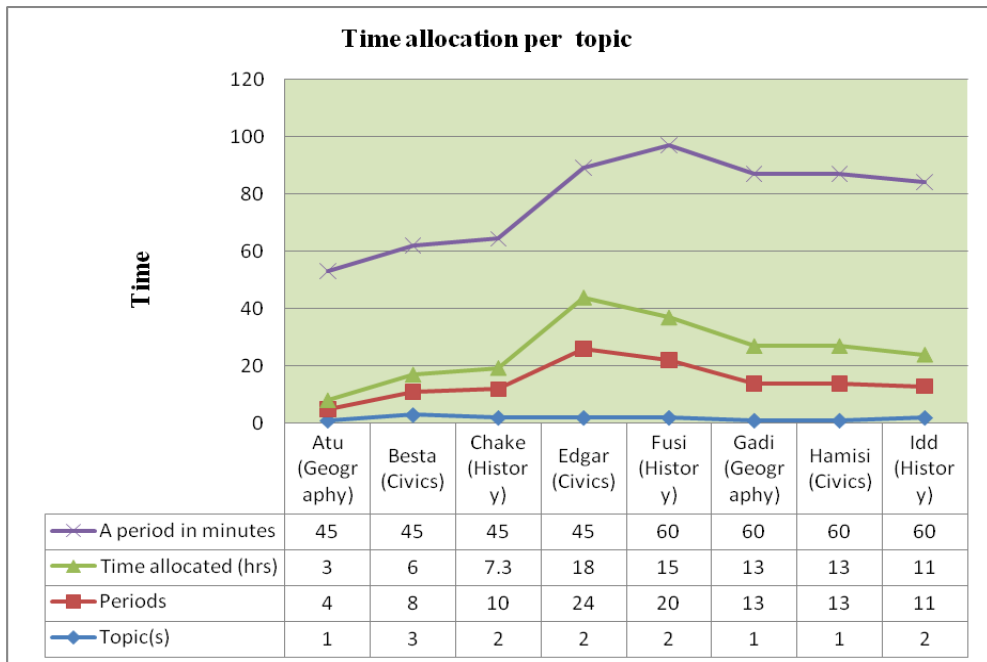

Time allocation per topic

	Atu (Geography)	Besta (Civics)	Chake (History)	Edgar (Civics)	Fusi (History)	Gadi (Geography)	Hamisi (Civics)	Idd (History)
A period in minutes	45	45	45	45	60	60	60	60
Time allocated (hrs)	3	6	7.3	18	15	13	13	11
Periods	4	8	10	24	20	13	13	11
Topic(s)	1	3	2	2	2	1	1	2

Figure 1: **Teaching time allocation**

Tutor beliefs towards student's participation

Another issue which was investigated the tutor's beliefs regarding the role played by students to participate in the preparation for teaching cognisance to learner-centred paradigm. Results revealed divergent views among tutors about the involvement of students in the preparation for their teaching and learning. While some tutors believed that students have nothing to do for teaching preparations, the majority of tutors viewed that students were partly involved in the planning for teaching. Results noted that students are involved when tutors' decide the modality conducting assessment, designing some teaching aids, section of appropriate teaching and learning strategies and activities. One tutor had this to say:

> *If I want to teach a topic such as "Our country Tanzania" and it involves drawing of maps, I involve them to draw the maps. Although the maps will help me in teaching, they acquire drawing skills. Therefore, they participate to prepare teaching aids, the learning activities, and evaluation of teaching and learning process.*

Moreover, the results show that students were involved in the planning of lessons when tutors explained to students the learning outcomes prior to the meeting session. For example, when tutors needed to organise the learning situation based on a certain strategy including group work, think-pair-share, mingling, presentations, the students asked to prepare themselves by reading some materials, designing learning aids and questions concerning the topic to ask their tutor and colleagues during the session. One tutor asserted:

> *Sometimes you give them [students] a task ... [to ask themselves], 'what do I know', and ask them to go to read about it. When you meet the student in the next period, you will be asked some questions: 'In our reading, we didn't find this thing, what the meaning of this is?' In doing so, you will realise that students need to know more if they did not learn it in your previous periods.*

Nevertheless, findings discovered a few tutors who did not believe that students could participate in preparing for their teaching and learning activities. Such tutors appeared to believe in traditional view that how could a student be able to prepare for teaching without a base in pedagogical knowledge, content knowledge and professional knowledge. They seemed to be curious on how students could be involved to set evaluation tools and learning objectives. However, in attempting to explain the circumstances in which students could be involved in the preparation for teaching, tutors felt that perhaps they could only use evaluation reports to determine their rank, to grade themselves and to make comparison of their performance with that of their colleagues. One tutor narrated:

> *Perhaps, with the use of examinations a student can understand his position in the class. For example, in the first semester my position was this one compared to her fellow students. I think this is one of the ways the student could use to assess himself or herself.*

Dominance in lesson preparation

Furthermore, the study findings revealed that tutors believed to be knowledgeable and aged compared to students who were young. Moreover, the findings revealed that tutors dominated students due to powers accrued from the curriculum, policy statements, and age and life experience. For instance, it was noted from findings that tutors used the centralised curriculum that prescribed teaching methods, teaching aids and other materials. As the reviewed education policy document emphasised: "*The initiative to liberalise the establishment, ownership, administration, and financing of teachers colleges will continue to require a centralized curriculum its coordination and monitoring*" (URT, 1995: 56). Hence, policy directives provided tutors with the mandate to dominate curriculum implementation and preparation for teaching at the college. It was revealed that tutors directly involved students in analysing the syllabus, selecting facilitation methods, deciding learning needs, deciding evaluation

tools, deciding the time of learning. However, there are evidence which show that tutors decided for the student on what they should learn, how they should learn, when they should learn and with what conditions. As one tutor was noted saying:

> *I am guided by the syllabus: It is directing you [me] the teaching methods you [I] should use, the evaluation methods, topic and there are guidelines of teaching methods. We're [I am] used to them [students], we [I] teach them now and then! So, we [I] know their weakness, strength ... so, we know them. We are [I am] free to prepare a lesson because I know their mental stability.*

Additionally, the study revealed that tutors believed that the ultimate answer to the learning process comes from the tutor. Such tutors assumed to be the master of content and a base for student's construction of knowledge. Hence, tutors tried to judge the validity and reliability of students' knowledge construction, as one tutor explaining:

> *I facilitate because I have little time to talk and most of the time the students have to say. Therefore, as a lecturer, I have to guide them. What is this about? They have to say something; this is about so and so. Then again, if it is correct, I have to tell them that are correct. I do not add anything. If it is wrong, I say this is wrong!*

Tutor's perceived challenges in preparing lessons on learner-centred education

Results generated from interviews, focus group discussion documentary reviews and researcher's journals showed that tutors faced several challenges in the preparations of lessons based on learner-centred education. For example, there were challenges related to classroom configuration, large class sizes, inadequate relevant curriculum materials, and language of teaching social studies. A large

number of classrooms were furnished with many chairs and desks organised in rows and column, which challenged tutors to arrange students in different seating styles. Tutors and students in such classes were compelled to rely on a single style of organising learning activities. The researcher noted a class that had 165 students who were arranged to use a large hall, which appeared to challenge tutors' beliefs towards the possibility of employing learner-centred teaching approaches in teaching. Large size of classes was another challenge that limited ventilation and made it difficulty to engage students in multiple learning techniques, media and assessment procedures. For example, findings indicated that large class sizes made it difficult for tutors to prepare lessons based on collaborative approaches including questions-answer, group discussions, project work, gallery walk, as one of the tutors explained: *"We don't have teaching and learning materials because classes are big. We can't apply different methods ...for example, jigsaw, as the classroom [environment] is not conducive"*.

Moreover, this study reports the challenges related to inadequacy of teaching and learning materials. This included unreliable internet services in the colleges that negatively affected tutors' lesson preparation based on the new approach. It was noted from the findings that the majority tutors could not have access to any social studies references to support in lesson preparation. Instead, they relied on the materials prepared by the Tanzania Institute of Education (TIE) a government agency responsible for preparation of teaching resources and professional development, to facilitate their teaching practices. However, the materials provided presented incorrect information in relation to what tutors were expected to teach students. As one tutor explained:

> *I lacked facts because the modules ... [pamphlets] that were circulated by TIE have so many incorrect information ... [and] misleading facts. The pamphlets are shallow: the issues are not written in detail. I requested civics books from my college management, I received a few books, and they have shallow knowledge to teach.*

In addition, the findings revealed that most of the materials and references, which were used by tutors to prepare lessons, were in English Language. This made it difficult for tutors who were struggling to translate the materials from English to Kiswahili Language, which was the official language of teaching in the colleges of teacher education. However, tutors were not confident with the meanings they created during translations. Tutors and students had the experience of learning through English Language as the medium of instruction before meeting at the colleges of teacher education whose language of teaching is Kiswahili. Thus, the situation revealed that tutors and students suffered relatively similar challenges that appeared to influence the practice of preparing lessons based on learner-centred approaches. One tutor had this to say.

> *If the students learn in English at the college, they will face problem to teaching in schools. Students will use English words [when they become teachers teaching school children] because they do not understand that concept in Kiswahili. However, the college students will know a few concepts of geography in Kiswahili Language.*

Discussion of findings
The implementation of learner-centred teaching in Tanzania seemed to be reflecting similar experiences faced by most developing countries. The implementation of innovation in these countries challenges classroom practitioners including college tutors who struggle to facilitate their teaching routines while struggling with issues of institutional and national culture, educational policies, and language of instruction, overcrowded and large classes, and insufficient resources. Vavrus, *et al*. (2011) suggest that governments should improve such issues as they augment the crisis of implementing new approaches in large classes in educational institutions. The authors appeared to recommend the need for the governments in these countries including Tanzania to decide the appropriate class sizes, enrich colleges with relevant teaching

resources (electronic and non-electronic) and solve the current dualism practice of instructional language in the education system (Schweisfurth, 2011 & Vuzo, 2013). The relationship between tutors and students continues to resemble those who 'have' and 'have not' respectively. This is due to existing centralised nature of policy and curriculum resources aggravated the culture of dominance by tutors in teaching and learning. Such culture reflects people's cultural values and norms in the country that requires the young generation to respect and listen to their elders. Such cultural aspects are exhibited in the classroom where students are obliged to respect and listen to tutors (Adeyemi & Adeyinka, 2003). For the same reason, tutors' dominance in lesson preparation appears to extend the magnitude of knowledge generation gaps, which cannot be reached by the students. Hence, students have to continue relying on authority knowledge from tutors. In this ways, most decisions are influenced by tutors as noted in this study that the preparation for teaching were centralised to tutors with a limited chances of students to participate in lesson planning.

The situation revealed an intermediate "trans-interactive approach" that plays between transmission and interaction. Learner-centred teaching requires the change of individual's practices and ways of performing tasks - a transformation of behaviour due to learning. This study reports that change based on learner-centred pedagogy seem to have not been successfully realised in teachers' education colleges in developing countries like Tanzania. Therefore, achieving the country's mission of producing graduates who are creative and reflective practitioners in various aspects of life might take several decades. Reasoning about the situation, the western child-centred teaching models are quite different from that of Africa especially Tanzania's child-centred teaching models, perhaps the question of social and cultural differences should not be ignored (Schweisfurth, 2011). Arguably, educational policies are not universal, rather they are localised and contextualised to attain their efficacy.

Conclusion and recommendations

This study concludes that the introduction of any innovation such as learner-centred in developing countries needs preparations prior to its onset to maximise success and quality of teaching. Poor receptions of innovation cultivates limited quality and availability of teaching resources   and tutors' pedagogical as well as professional competences on learner-centred education that contribute to superficial knowledge generation. The study revealed partial conception of learner-centred teaching by college tutors, which influenced their practices of designing lessons effectively. This situation reflects on the efficacy of the procedures employed to introduce learner-centred education – a western model – in this developing country context. A strong support from educational stakeholders regarding the present national education policy, college leadership, the community, and continuous professional development are significantly needed in the studied context. Collective efforts by educational stakeholders are important in decision-making and implementation of any educational change. In view of the fact that, the present study addressed social studies tutors in lesson preparation before classroom teaching, it recommends an investigation of the ways and extent to which learner-centred approaches are realised in actual classroom of tutor-student interactions. Further, given the current challenges of enacting learner-centred curriculum, a research is needed to explore the future of social studies teaching using learner-centred approaches in teacher education colleges and other similar education contexts.

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The font size of main text shall be 12 in Times New Roman

Depending on the areas of specialization, manuscripts should be arranged in the order of: title page, abstract (structured summary) including up to six key words, main text, acknowledgements, references, tables figures, and figure legends.

In case of science/experimental-based submissions, the order should be: title page, abstract, introduction, materials and methods, results, discussion, acknowledgements, references, figure legends, tables, and illustrations. Under this category, results and discussion sections may be combined if appropriate.

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The first page following the title page should contain an abstract. Abstract should contain up to 250 words mainly of the object and main findings of the paper. Three to five key words representing concepts of the paper may be written at the end of the abstract. The Abstract shall be in *italics*.

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In the main text:

Introduction: Should describe the objective of the reported work and provide relevant background information.

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Abbreviations in the body of the paper should be used after having been initially explained. If statistical analysis is applicable, it is important that the procedure is carried out following appropriate methods.

Tables and Figures

Tables and figures should be as close as possible to the text explaining the concept. Tables should be numbered in the order in which they are mentioned in the text. A Table caption must be presented in upper case at the top and Figure caption should be typed in bold immediately below the Figure. Explain in footnotes all non-standard abbreviations used in each table.

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They should be kept to a minimum. Two or more consecutive references to the same source should, where possible, be grouped in the same note; the reader should be able to follow the article without referring to the notes.