

Perceived Level of Knowledge and Skills On the Use of E-Learning Among Lecturers and Students at the Open University of Tanzania

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ABSTRACT: *This study examined the level of knowledge and skills on the use of e-learning among lecturers and student at the Open University of Tanzania. The study was guided by one research question and one hypothesis. The study was also guided by Dynamic Skills Theory developed by Fischer in 1980. The study employed convergent design under mixed research approach. The target population involves 2616 students, 303 lecturers, 50 instructional designers, 01 Director of Quality Assurance, and 01 Director of Examination Syndicate. The sample of this study included 262 students, 30 lecturers, 01 director of quality assurance, 01 director of examination syndicate, 05 instructional designers. Stratified, simple random, and purposeful sampling techniques were used to determine the study sample that consisted of 299 respondents. Research instruments included questionnaires, interview guides, and document analysis schedule. For quantitative data analysis the researcher used both descriptive and inferential statistics. For qualitative data analysis the researcher used thematic analysis for analyzing qualitative data. Data for both quantitative and qualitative are presented using tables, charts, figures, narrations, themes, categories and direct quotations were used to present the study findings. The findings indicated that a moderate majority of lecturers and majority of students perceived had lack knowledge and skills on the use of e-learning. The average mean score for lecturers and students was 2.97 and 2.25 respectively. This indicated that there was disagreement on the perceived level of knowledge and skills on the use of e-learning among lectures and students. Moreover, the findings indicated that there is no significant difference mean score between arts students and science students on the perceived level of knowledge and skills on the e-learning at the Open University of Tanzania. The study concluded that both lecturers and students had perceived inadequate knowledge and skills on the use of e-learning. The study recommends, that The Open Universities of Tanzania with collaboration of Institute of Education Management and Technology should provide training for both lecturers and students on issues regarding utilization of e-learning.*

KEY WORDS: knowledge, skills, e-learning, lecturers, students.

INTRODUCTION

Education is a process of acquiring and developing accumulated and new knowledge, wisdom, attitudes, values and skills as a result of growth, maturation and learning, which can be best utilized for life in a changing society (Malusu, 1997). Education is among the important human rights which enables people to solve social, political, economic and cultural problems prevailing in the society. Therefore, education provided to all citizens must be of high quality to meet the needs and interests of learners and society at large. In the same vein, the use of modern technologies in teaching and learning processes is considered a competitive tool for improving the academic performance in Higher Learning Institutions (HLIs) of low and middle-income countries, Tanzania in particular (Innocent & Masue, 2020). However, e-learning is a widely used technology in teaching and learning in HLIs particularly during this period of COVID- 19 pandemic.

E-learning is an innovative web-based system on digital technologies and other forms of educational materials whose primary goal is to provide students with a personalized, learner-centered, open, enjoyable, and interactive learning environment supporting and enhancing the learning processes (Valverde-Berrocoso et al., 2020). E-learning might be a driving force for higher education institutions (HEIs) in Tanzania and might have influence on students' academic achievement in the Open University of Tanzania (OUT). As it is the case with other African countries, the rate of influence of e-learning platforms on students' academic achievement in Tanzania could be very slow despite potential opportunities provided by open source technology and the conducive environments created by the respective governments (Kisanjara et al., 2017). There have been some initiatives on the part of governments to develop ICT policies as a way forward in the integration of e-learning in Tanzania (Tossy, 2017).

Online teaching and learning is emerging as a growing trend in Open and Distance Learning (ODL) and gaining wider popularity among Higher Education institutions in Africa. Online teaching and learning in the context of this study, refers to a method of instruction and acquisition of knowledge that is carried out in ODL with the help of computer and technologies via internet. Usage of technology offers a wide range of opportunities in ODL including promoting the quality of interaction among learners, interaction between learners and lecturers as well as providing access to a plethora of resources (Mathew & Iloanya, 2016).

Institutions in sub-Saharan African countries have been adopting various e-Learning systems such as Modular Object-Oriented Dynamic Learning Environment (MOODLE) in order to improve the quality of teaching and learning, and to increase access to education through blended and distance learning. These systems enable instructors to share instructional materials as well as interaction with their students, both Lecturers and students interact online at same time (synchronously) or lecturers and students use online services at different time (asynchronously). They have tools for managing online groups, communication and for conducting assessments and evaluation (Mtebe, 2019).

Despite lecturers' and students' level of knowledge and skills on the use of e-learning programs, students' academic achievements is not known at OUT. The study investigated lecturers and students' knowledge and skills in the use of e-learning which could have positive or negative impact on students' academic achievements (Innocent & Masue, 2020).

Similarly, University of Botswana implemented national ICT policies and trained the lecturers to use educational technology, there was low-level use of e-Learning in teaching and learning. The knowledge and skills were not equal among lecturers. Some lecturers claimed that they did not have enough knowledge on how to teach distance education at the University of Botswana via online technologies. Also, transferring that knowledge and skills to teaching and learning in a classroom was an obstacle for them, particularly when transitioning from f2f to distance education where they were expected to teach online (Dintoe, 2018). In the Open University of Tanzania lecturers and students experience e-learning services such as online lectures, online assignment, and online discussion for all which allow flexibility in the learning process. The researcher investigated the level of knowledge and skills on the use of e-learning.

In addition, the past decade experienced rapid adoption and use of various Learning Management Systems (LMS) in this case Moodle in Africa, and Tanzania in particular. Institutions have been spending thousands of dollars to implement these systems in a bid to improve the quality of education as well as increasing students' academic achievement at the Open University of Tanzania through distance and blended learning (Mwalumbwe & Mtebe, 2017). The nearest county Kenya noted that lecturers and students lacked requisite ICT knowledge and skills. The level of knowledge and skills on the use of e-learning among lecturers and students in Tanzania particularly the Open University of Tanzania is not documented. The study investigated the level of knowledge and skills on the use of e-learning among lecturers and students at the Open University of Tanzania.

Statement of the Problem

The current lecturers and students at the Open University of Tanzania perceived have inadequate knowledge and skills on the use of e-learning. Educational stakeholders wants these problems to be addressed. However, studies done by Makokha and Mutisya (2016), Innocent and Masue (2020), Coman et al. (2020) indicate that lecturers and students lacked requisite ICT knowledge and skills and limited applicability of e-learning. Other studies done by Dintoe (2018) indicates that lecturers and students have adequate knowledge and skills on the use of e-learning. The debate is not concluded yet among scholars, academicians, educational practitioners on the perceived level of knowledge and skills on the use of e-learning among lecturers and students. Therefore, these contradictions are a cause for investigation. There was no study done in Tanzania about the perceived level of knowledge and skills on the use of e-learning among lecturers and students. Therefore, this study investigated perceived level of knowledge and skills of the use of e-learning among lecturers and students at the Open University of Tanzania.

Research Questions and Hypothesis

The study was guided by one research question and one hypothesis:

1. What is the perception of level of knowledge and skills on the use of e-learning among lecturers and students at the Open University of Tanzania?

Ha: There is a significant difference in mean scores between arts students and science students on the perceived level of knowledge and skills on the use of e-learning at the Open University of Tanzania.

Significance of the Study

The study expected to contribute in formulation of suitable Tanzania ICT policy and the Open University of Tanzania ICT policy. With an increasing demand for tertiary education and rapid technological development the university should employ ICT in all its aspects. For this reason, it is important to equip staff and students with the right skills, which will enhance their ability to manage and utilize ICT tools in their teaching, learning and research. So, the findings should provide information which is relevant when implementing e-learning at the Open University in providing proper ICT policy in teaching and learning.

This study is highly significant in enhancing the importance of e-learning in higher education. This information should help educational stakeholders such as lecturers, students, parents and Government to avoid the barriers that are likely to hinder the development and expansion of e-learning in the Open University of Tanzania. E-learning can also be seen as a promising way for improving the quality of higher education and effectiveness of learning. It could give increased flexibility of learning experience to students, enhance access to information resources for more students. E-learning could also lead to the enhanced quality in higher education by leading to innovative pedagogical methods, new ways of learning and interacting by easily sharing of the new practices among learners and lecturers regarding influence of e-learning on students' academic achievement in the Open University of Tanzania in the Tanzanian context.

Furthermore, the findings of this study should add to the body of knowledge on the level of knowledge and skills on the use of e-learning among lecturers and students at the Open University of Tanzania. E-learning is a new technology in teaching and learning processes in Tanzania. Other universities in Tanzania have started the basic process of ICT infrastructure expansion to include local area network implementation, Internet, computer labs and other facilities, as a way forward to the establishment of e-learning. Also, the University could learn from the findings of this research on how best to implement the new technology.

Moreover, the findings of this study should inform the University adequate preparation of lecturers and students in area of e-learning for effective learning in order to achieve educational goals.

Theoretical Framework

The study was guided by Dynamic Skills Theory. Dynamic skills theory was developed by Fischer (1943–2020) Harvard Graduate School of Education. Fischer's dynamic skill theory is a comprehensive theory of human development that not only describes mechanisms of development

and a developmental sequence, but also considers the impact of contextual and interpersonal factors (Fischer, 1980). The theory describes how individuals possess skills which could help them in their daily life. Skills develop through levels of increasing complexity, differentiation, and integration, within a dynamic system that includes self, other, and environment. There are many ways in which skill theory has impacted our work, for instance mental development involves the entire brain and is impossible without social interaction. Even a concept like e-learning is best learned in an environment that engages learners warmly, motivationally, kinesthetically, and seriously. This could mean lecturers and students through interact with technology such as e-learning were able to develop knowledge and skills in the process of teaching and learning.

Skills develop over time by growing increasingly complex. But importantly, they do not develop in a vacuum. Dynamic skill theory demonstrated that skills develop in contexts. Contexts include the external world, the internal and the interpersonal world. Because skills are constructed in specific contexts, which transferred well from one context to another. For example, the fact that lecturers and students should be aware on the technology and demonstrate those skills in actual teaching and learning. This is why lecturers and students need to learn and practice technological skills in teaching and learning process.

LITERATURE REVIEW

This section contains empirical review based on the level of knowledge and skills on the use of e-learning among lecturers and students at the Open University of Tanzania. Given the new educational paradigm in which today's students and lecturers enjoy the connectivity and the sharing of information, the different modalities of education bring challenges to pedagogical practice and encourage lecturers and students to seek professional development so that they can work in online education with relevance, quality, and commitment. In this sense, there is need to determine the necessary knowledge and skills of e-learning among lecturers and students in relation to students' academic achievements. It is also imperative to draw attention to knowledge-related skills that must be constantly applied in conjunction with the knowledge required for online education: the skill of learning throughout life and from new scenarios that are presented from the different relations created through working with this type of education. This skill prioritizes new methods of autonomous learning, collaborative learning, interactivity, and connectivity, all of which arise in the complex role of being a teacher of online education (Ferreira et al, 2018).

In Italy, Coman et al. (2020) did a study on Online Teaching and Learning in Higher Education during the Coronavirus Pandemic: Students' Perspective. The research focused on identifying the way in which Romanian universities managed to provide knowledge during the Coronavirus pandemic, when, in a very short time, universities had to adapt the educational process for exclusively online teaching and learning. An online survey based on a semi-structured questionnaires. Data was collected from 762 students. The study however used single method for data collection which is questionnaires. The use of only questionnaires as method of data collection cannot capture emotional responses or feelings which was very important in getting from in depth

understating of research phenomena. However, the current study filled this gap by using a variety of research instruments such as questionnaires, interview guide and document analysis schedule that helped to triangulate information from multiple source of data collection.

Findings from Coman et al. (2020) revealed that technical issues are the most important, followed by lecturers' lack of knowledge and technical skills and their teaching style improperly adapted to the online environment. Also, the findings indicate that there is a relationship between knowledge and skills on the use of e-learning among lecturers and students' on students' academic achievements. The relationship between knowledge and skills on the use of e-learning among lecturers and students in high –income countries such Italy might not be the same as the Open University of Tanzania because the level of e-learning investment in e-learning between Italy and Tanzania are not the same. The countries where levels of investment are high the perceived level of knowledge and skills was higher compared to counties where level of investment of e-learning was low. Therefore, the current study filled this gap by identifying specific perceived level of knowledge and skill on the use of e-learning among lecturers and students on students' academic achievements at the Open University of Tanzania.

Dintoe (2018) conducted a study on Educational technology adopters: A case study at the University of Botswana. The main purpose of the study was to investigate the use of e-learning in teaching and learning in the University of Botswana. Qualitative case study approach was employed in that study. From a qualitative case studies approach generally data is collected using a variety of techniques such as interviews, artifacts/secondary documents, and observations. The purposeful sampling was used to select lecturers. The study collected data only from lecturers. Collecting data from one category of respondent may limit triangulate information regarding perceived level of knowledge and skills on the use of e-learning among lecturers and students. Also getting information apart from key informants was very important because there was a possibility of getting their views regarding research problem and could increase credibility of the findings. The current study filled this gap by involving a varied sample such lecturers and students which provided adequate information regarding perceived level of knowledge and skills on the use of e-learning.

The study by Dintoe (2018) revealed the following findings in relation to e-learning: lecturers and students had adequate knowledge of the technologies being diffused. However, the knowledge and skill obtained through e-learning were not similar due to lecturers ICT backgrounds. Although technology was used in the face-to-face classes and in distance education residential classes, some claimed that they did not have adequate knowledge on how to teach distance education at the University of Botswana via online technologies. The participants generally said that online learning was not easy for them. This shows that although the lecturers had knowledge and skills in using technology, transferring that knowledge and skills through teaching and learning in a classroom was an obstacle for them, particularly when transitioning from face to face to distance education where they were expected to teach online. However, the study under review revealed that lecturers and students had limited knowledge and skills on the use of e-learning the current

study go beyond at examining perceived knowledge and skills on the use of e-learning. Therefore, in filling this gap the study explored the perceived level of knowledge and skills on the use of e-learning among lecturers and students.

Makokha and Mutisya (2016) did a study on the Status of E-Learning in Public Universities in Kenya. The purpose of this study was to assess the status of e-learning in public universities in Kenya. Data were collected using questionnaires administered to both students and lecturers randomly sampled from seven public universities. Questionnaire responses were triangulated with interviews from key informants and focus group discussions (FGD). However, the target population, sample size and sampling procedures were not clearly indicated. In this regard if targeted population, sample size and sampling procedures are not known there is a possibility of obtaining data which is unreliable. The current study filled this gap by identifying target population and sampling procedures which could add credibility of the findings.

Findings from Makokha and Mutisya (2016) study revealed that e-learning is at its infant stage in the universities in Kenya. Again, university lecturers and students in Kenya lacked requisite ICT knowledge and skills. Also in the current study lecturers and students had inadequate knowledge and skills but the current study interested to go further than by investigating the perceived level of knowledge and skills on the use of e-learning among lecturers and students. Therefore, the current study filled this gap by examining perceived levels of knowledge and skills on use of e-learning among lecturers and students in relation to students' academic achievement at the Open University of Tanzania. This was important to investigate because knowing the lecturers and student perceived level of knowledge and skills on the use of e-learning could enable the university management to conduct training to the right personnel.

Innocent and Masue (2020) conducted study on applicability of e-learning in Higher Learning Institutions in Tanzania. The objective of the study was to investigate the applicability of e-learning in Higher Learning Institutions (HLIs) in Tanzania using three selected universities in Morogoro Region. The researcher collected data using questionnaires and interview guides from a sample of 90 respondents, who were selected using simple random and purposive sampling techniques. Data were analyzed through descriptive statistics and results were presented using frequencies and mean statistics. The study used interview guide which was not appropriate instrument to cross sectional survey design which might lower validity and reliability of the findings. The current study filled this gap by employing appropriate instruments such questionnaires, interview guides and document analysis schedule that would increase the validity and reliability of the findings.

The findings from Innocent and Masue (2020) revealed that there is limited applicability of e-learning in the three HLIs studied. Inadequate applicability of e-learning is attributed to poor attitude, lack of skills among the users and insufficient ICT infrastructure. The study focused on applicability of e-learning in teaching and learning process, issues of perceived level knowledge and skills was not clearly captured which was very important in teaching and learning process

through e-learning. Therefore, the current study filled this gap by investigating perceived level of knowledge and skills on the use of e-learning among lecturers and students on students' academic achievements in the Open University of Tanzania.

RESEARCH METHODOLOGY

The study adopted convergent research design under mixed research approach. In this case both qualitative and quantitative data was collected, merged the data and used the results to address research problem. It is useful when the researcher has limited time for collecting data in the field and must gather both types of data in one visit. The researcher needs both quantitative and qualitative forms of information from every participant (Creswell & Plano Clark, 2018; Creswell & Creswell, 2018). The target population involves 2616 students, 303 lecturers, 50 instructional designers, 01 Director of Quality Assurance, and 01 Director of Examination Syndicate Sample comprised of 30 OUT lecturers; 262 OUT students were selected by stratified sampling procedures followed by simple random procedures. 5 OUT Instructional designers were purposive selected. 01 OUT director of quality assurance, and 01 OUT director of examination syndicate were automatically included. The study essentially used a combination of both qualitative and quantitative data collection instruments such as questionnaires for lecturers and students, interview guide for instructional designers, Director of Quality Assurance and Director of Examinations Syndicate. Similarly, documentary analysis schedule was used to collect the information on the reports relating knowledge and skills of both lecturers and students. Validity of the research instruments was determined by research experts and reliability of the questionnaire was tested by Cronbach Alpha technique. The likert scale items in the questionnaire were subjected to the formula using Statistical Package for Social Sciences (SPSS) and the alpha was calculated for each questionnaire. The reliability results for the perceived level of knowledge and skills on the use of e-learning among lecturers and students at the Open University of Tanzania were 0.778 and 0.707 respectively. In social science research if the calculated value for coefficient reliability is 0.7 and above it represents acceptable reliability (Okendo et al., 2020). The researcher used both descriptive and inferential statistics in data analysis. For descriptive statistics data were collected from questionnaires with likert scale comprising ten items. The data were analyzed using frequencies, percentages, means, standard deviations and tables. The interpretation of data was done in relation to research questions as indicated. For Inferential statistics, they were tested according to their assumptions at confidence level of 95% and significance level of 5%. For this study hypothesis one tested by independent sample T-test. The researcher used thematic analysis techniques to analyze qualitative data. The analyzed qualitative data from interview guides were summarized, coded and analyzed in each theme/ category and then relevant information was extracted, interpreted and discussed.

FINDINGS AND DISCUSSION

This section provides the study results for perceived level of knowledge and skills on the use of e-learning among lecturers and students at the Open University of Tanzania.

Perceived Level of Knowledge and Skills on the use of E-learning among Lecturers and Students at Open University of Tanzania

This section sought to identify perceived level of knowledge and skills on the use of e-learning among lecturers and students at the Open University of Tanzania. A five-point Likert scale was used to capture information regarding level of knowledge and skills. The information was obtained through questionnaire from lecturers and students then interview was done to director of quality assurance, director of examinations syndicate and instructional designers. In the scale 1 represented strongly disagree while 5 represented strongly agree. The results are presented in Table 1 and 2 below.

Table 1: Lecturers Responses on perceived Level of knowledge and skills on the use of e-learning among lecturers at the Open University of Tanzania (n=30)

Statements	SD (%)	D (%)	U (%)	A (%)	SA (%)	Mean
Lecturers have adequate technical skills on e-learning	-	14(46.7)	5(16.7)	11(36.7)	-	2.90
Lecturers lack e-learning knowledge	2(6.7)	7(23.3)	1(3.3)	17(56.7)	3(10.0)	2.60
Lecturers have adequate knowledge in developing and uploading appropriate materials in Moodle platform	-	15(50.0)	1(3.3)	10(33.3)	4(13.3)	3.10
Lecturers have no ability to conduct online lectures in real time sessions	6(20.0)	13(43.3)	1(3.3)	8(26.7)	2(6.7)	3.43
Lecturers have ability to design online assessments	-	5(17.2)	3(10.3)	18(62.1)	3(10.3)	3.66
Lecturers have ability to grade online assessment	-	10(33.3)	-	17(56.7)	3(10.0)	3.43
Lecturers do not interact with students in e-learning platform	1(3.4)	7(24.1)	4(13.8)	8(27.6)	9(31.0)	2.41
Lecturers have inadequate knowledge in giving students feedback in e-learning platform	2(6.7)	7(23.3)	3(10.0)	11(36.7)	7(23.3)	2.53
Lecturers have inadequate knowledge and skills to implement E-learning for Practical courses such as chemistry, physics, and biology	-	6(20.0)	5(16.7)	10(33.3)	9(30.0)	2.27
Lectures have ability to use computer as a study tool	-	10(33.3)	1(3.3)	16(53.3)	3(10.0)	3.40
Average Mean						2.97

Source: Field Data (2022) **Key:** SD=Strongly Disagree, D=Disagree, U=Undecided, A=Agree and SA=Strongly Agree

Data in table1 illustrates moderate majority of lecturers (66.7%) agreed and strongly agreed that lecturers perceived they had lack of e-learning knowledge. This implies since e-learning is a new approach for lecturers which is currently used in teaching and learning at the Open University of Tanzania. These findings concur with Coman et al. (2020) who revealed that technical issues are the most important, followed by lecturers' lack of knowledge and technical skills and their teaching

style improperly adapted to the online environment. From practical experience knowledge of e-learning among lecturers were very important due to the fact that they are key implementer of e-learning. So, knowledge of e-learning for lecturers are highly needed that could enable them to facilitate teaching and learning smoothly. The Diffusion of Innovation Theory (1962) supported these findings on an aspect of complexity. The findings revealed that if lecturers were not competent enough on the issue dealing with e-learning could be difficulty to conduct e-learning classroom. The perceived level of knowledge and skills on lecturers had impact on teaching and learning through e-learning. In many developed countries and developing countries perceived level of knowledge and skills on the use of e-learning may not be the same as Roger theory of diffusion innovation theory. The theory suggested that in developed countries the level of adoption of technology was higher compared to developing countries hence could affect the perceived level of knowledge and skills on the use of e-learning.

Also, interview conducted with instructional designer regarding the level of knowledge and skills on the use e-learning among lecturers revealed number of lecturers lacked e-learning knowledge. This was exemplified by one instructional designer that:

It is the role of a lecturer to upload the materials to Moodle platform but some could not manage to do that because of lack of knowledge and skills on the use of e-learning. Many materials on Moodle platform were uploaded by instructional designers who belong to those faculties. Even those lecturers who managed to upload materials on Moodle platform do not meet the standard and quality for the University (Personal communication, February 24, 2022).

The quotation implies that lecturers at the Open University of Tanzania had inadequate knowledge and skills on the use of e-learning. The OUT policy of 2014 clearly stated that OUT lecturers before being employed must possess knowledge and skill on the use of ICT. There were some in house training conducted to equip lecturers with knowledge and skills on the use of ICT but it was noted that the problem was completely dealt with.

However, there were contradictions observed in these findings. For instance, majority of lecturers indicated they lacked e-learning knowledge but findings in some statement revealed a majority of lecturers (72.4%) agreed and strongly agreed that they had ability to design online assessment, a moderate majority of lecturers (66.7%) agreed and strongly agreed that they had ability to grade online assessment and moderate majority of lecturers (63.3%) agreed and strongly agreed that they had ability to use computer as a study tool. The assumption was, if lecturers perceived that they had lacked knowledge on the use of e-learning, researcher expected also to observe lecturers not able to design online assessment, not able to grade online assessment and not able to use computer as study tool. From the researcher's experience if lecturers lacked e-learning knowledge could not able to perform better e-learning activities. The researcher expected majority of lecturers to perform below 50%. So, this indicated that sometime likert scale could not provide appropriate response from respondents. So, to avoid these contradictions researcher triangulated these findings using interview guide in order to get in-depth understanding of the problem.

Similarly, the researcher used the average mean score to present these findings. The average mean score of 2.97 revealed that there was a disagreement on the level of knowledge and skills on use e-learning among lecturers. This could mean greater majority of lecturers had inadequate knowledge and skills on the use of e-learning.

The researcher also wanted to find out if there is any difference between the responses given by students on perceived level of knowledge and skills on the use of e-learning at the Open University of Tanzania. Table 4.5 summarizes the responses of students:

Table 2: Students Responses on Perceived Level of knowledge and skills on the use of e-learning among students at the Open University of Tanzania (n=253)

Statements	SD (%)	D (%)	U (%)	A (%)	SA (%)	Mean
Students have adequate technical skills on e-learning	74(29.5)	104(41.4)	6(2.4)	59(23.5)	8(3.2)	2.29
Student lack knowledge on e-learning	17(6.7)	41(16.3)	9(3.6)	141(56.0)	44(17.5)	2.39
Students have adequate knowledge in Moodle platform	60(24.5)	117(47.8)	8(3.3)	46(18.8)	14(5.7)	2.33
Students have ability to participate online lectures in real time sessions	109(43.6)	68(27.2)	12(4.8)	50(20.0)	11(4.4)	2.14
Students have knowledge and skills to find necessary information when using an E-learning platform	95(37.8)	72(28.7)	7(2.8)	56(22.3)	21(8.4)	2.35
Students do not interact with students in e-learning platform	11(4.4)	37(14.7)	11(4.4)	102(40.6)	90(35.9)	2.11
Students fail to join live session via zoom	13(5.2)	34(13.6)	8(3.2)	85(34.0)	110(44.0)	2.02
Students are not able to upload assignments in e-learning platform	19(7.5)	42(16.6)	8(3.2)	101(39.9)	83(32.8)	2.26
Students have knowledge and skills for charting on discussion forum	60(23.9)	79(31.5)	12(4.8)	75(29.9)	25(10.0)	2.71
Students are not capable to use all zoom features during online lectures	5(2.0)	25(9.9)	12(4.7)	116(45.8)	95(37.5)	1.93
Average Mean						2.25

Source: Field Data (2022) **Key:** SD=Strongly Disagree, D=Disagree, U=Undecided, A=Agree and SA=Strongly Agree

Data in table 2 indicates statements on the level of knowledge and skills on the use of e-learning among students at the Open University of Tanzania. The findings indicated that a majority of students at the Open University of Tanzania (73.5%) agreed that they lacked knowledge on e-learning. These findings are in line with Innocent and Masue (2020) which indicated that students had limited applicability of e-learning in higher learning intuitions. Also these findings are dissimilar with findings by Dintoe (2018) which revealed that students had adequate knowledge of the technologies being diffused. This could mean that knowledge of e-learning was very important aspect through the process of teaching learning via online education. On other hand if, students had inadequate knowledge of e-learning achieving educational goals through e-learning

could be very difficult. Also, the average mean score of 2.26 indicated that there was disagreement on the perceived level of knowledge and skills on the use of e-learning among students.

Interview conducted with instructional designers regarding the level of knowledge and skills on the use of e-learning among students' revealed that students are categorized into three groups. This was exemplified by one of instructional designer that:

The level of knowledge and skills on the use of e-learning among students were categorized into three groups. There are students who are completely poor on the use of e-learning particularly during live session via zoom. Most students were not capable of using zoom features such as features of raising hand and mute and unmute the mic. Other category falls with an average level of knowledge and skills on the use of e-learning. The last group are those students who are good on the use e-learning. They had adequate knowledge and skills on the use of e-learning at the Open University of Tanzania. (Personal communication, February 24, 2022)

On the other hand, interview conducted with the director of quality assurance reported that: The directorate of quality assurance office was responsible to check if students had knowledge and skills on the use of e-learning. This is done on live sessions which are conducted through zoom. She noted that some students were not capable of using zoom features for example how to mute and unmute mic. In some cases when students wanted to ask questions were not able to ask because of lack of knowledge and skills on issues regarding e-learning (personal communication, February23, 2022).

From the quotations, the perceived level of knowledge and skills on the use of e-learning among students is very important in teaching and learning at the Open University of Tanzania. To use well e-learning platform students are supposed to have adequate knowledge and skills. If students lack knowledge and skills on e-learning it could affect their actual performance.

The researcher's opinion regarding these findings is that e-learning was inevitable particularly for the higher learning intuitions where the motives were to change from traditional mode of teaching to new approach of teaching and learning which involved e-learning. These findings contrasted with diffusion innovation theory by Rogers in the aspect of relative advantage. New technology of teaching in case e-learning has more advantage rather than traditional face to face teaching. The actual practice in the study indicated that e-learning it has brought some problem in teaching, where students perceived level of knowledge and skills being questionable.

In order to triangulate information from the lecturers and students on the perceived level of knowledge and skills on the use of e-learning it revealed that majority of lecturers and students perceived they had inadequate knowledge and skills on the use of e-learning. These finding were supported with Makokha and Mutisya (2016); Innocent and Masue (2020). The researcher was interested to test hypothesis to check if there was significant difference mean scores between arts and science students on perceived level of knowledge and skills on the use of e-learning. The results summarized in table 3.

Null Hypothesis 1

Ho: There is no significant difference in mean scores between arts students and science students on the perceived level of knowledge and skills on the use of e-learning at the Open University of Tanzania.

An Independent Sample T- Test was test at 0.05 significance level and summarized in table 3. Before hypothesis testing the researcher tested assumption. The assumption tested particularly the normality test indicated that p –value was greater than 0.05 hence data were normally distributed.

Table 3: Hypothesis Testing

Independent Samples T- Test		Level of knowledge and skills on the use of e-learning mean scores		
Levene's Test for Equality of Variances		Equal variances assumed	Equal variances not assumed	
t-test for Equality of Means	F	0.878		
	Sig.	0.351		
	T	-1.861	-1.871	
	Degrees of freedom	90	89.767	
	Sig. (2-tailed)	0.066	0.065	
	Mean Difference	-3.24585	-3.24585	
	Std. Error Difference	1.74376	1.73447	
	95% Confidence Interval of the Difference	Lower	-6.71012	-6.69179
		Upper	0.21843	0.20009

The findings in Table 3 were be summed as: $t(90) = 0.878, P=0.351$). The findings indicated that *P*- value is greater than 0.05 significance level. Since the p-value from table 3 is greater than the significance level we fail to reject the null hypothesis. Therefore, there is no significant difference mean score between arts students and science students on the perceived level of knowledge and skills on the e-learning at the Open University of Tanzania. This implies that perceived level of knowledge and skills on the use of e-learning did not depend on the subjects that students undertook

CONCLUSION

The overall findings of this study revealed that moderate majority of lecturers and majority of students had lack of knowledge and skills on the use of e-learning at the Open University of Tanzania. This was observed when lecturers had inadequate knowledge and skills to implement e-learning for practical courses such as chemistry, physics and biology and in case of students this was observed in case where majority of students were incapable to use zoom features during online lectures. However, hypothesis testing revealed that there is no significant difference mean score between art students and science students on the perceived level of knowledge and skills on the use of e-learning at the Open University of Tanzania. So, these average mean scores concluded that there was disagreement on the perceived level of knowledge and skills on the use of e-learning among lecturers at the Open University of Tanzania.

Recommendations

The following recommendations are offered:

Professional development and training for lecturers on the issues regarding e-learning should be emphasized. The Open University of Tanzania should put a side budget for training lecturers on matter regarding utilization of e-learning. These training could enable lecturers equipped with adequate knowledge and skills on the use of e-learning.

The Open University of Tanzania with collaboration of Institute of Education Management and Technology should work out a plan training to students on the issues dealing with e-learning on how to integrate e-learning in the process of teaching and learning at the Open University of Tanzania. By so doing could help students take their programs smoothly and hence would increase actual students' performance.

Similarly, The Open University of Tanzania management should require steps that improve lecturers' and students' knowledge and skills about the e-learning platform with the purpose of effective utilization of e-learning in the process of teaching and learning. If they do not have adequate knowledge and skills on e-learning, they are less likely to use them effectively which could effect online association. In turn, ineffective partnership could negatively impact on students' academic achievements. Therefore, the Open universities of Tanzania should offer training for both lecturers and students on in the appropriate use of e-learning.

REFERENCES

- Coman, C., Tiru, L.G., Schmitz, L.M., Stanciu, C & Bularca, M.C. (2020). Online Teaching and Learning in Higher Education during the Coronavirus Pandemic: Students' Perspective. *Sustainability* 1-24
- Creswell, J.W., Creswell, J.D. (2018). *Research Design: Qualitative, Quantitative, and Mixed Research Approaches*. (5th ed.). London: Sage publication, Inc
- Creswell, J. W., & Plano Clark, V.L. (2018). *Designing and Conducting Mixed Methods Research (3rd Ed.)*. Thousand Oaks CA: Sage Publications.
- Dintoe, S.S. (2018). Educational technology adopters: A case study in University of Botswana. *International Journal of Education and Development using Information and Communication Technology (IJEDICT)*, 14, (1), 52-90
- Ferreira, J., Behrens, M., & Marriot, R. (2018). The Necessary Knowledge for Online Education: Teaching and Learning to Produce Knowledge. *EURASIA Journal of Mathematics, Science and Technology Education*, 14 (6), 2097-2106
- Fischer, K.W. (1980). Learning and problem solving as the development of organized behavior. *Journal of Structural Learning*, 6, 253-267
- Innocent, W.A & Masue, O.S. (2020). Applicability of E-learning in Higher Learning Institutions in Tanzania. *International Journal of Education and Development using Information and Communication Technology (IJEDICT)*, 16(2), 242-249.
- Kisanjara, S.B., Tossy, T.M., Sife, A.S., & Msanjila, S.S. (2017). An Integrated Model for Measuring the Impacts of E-Learning on Students' Achievement in Developing Countries

- International Journal of Education and Development using Information and Communication Technology (IJEDICT)*, 13 (3), 109-127.
- Makokha, G.L. & Mutisya, D.N. (2016). Status of E-Learning in Public Universities in Kenya. *International Review of Research in Open and Distributed Learning*, 17, (3), 341-359
- Malusu, J.M. (1997). *The role of Christian church in Curriculum development in Kenya: A case study of Cisret and Create In-service teachers education program*. (PhD thesis) Kenyatta University, Nairobi: Kenya
- Mathew, I.R. & Iloanya, J.E. (2016). *Open and Distance Learning: Benefits and Challenges of Technology Usage for Online Teaching and Learning in Africa*
- Mtebe, J.S. (2020). Examining User Experience of e-Learning System Implementing in Two Universities in Tanzania. *Interactive Technology and Smart Education* 17 (1), 39-55
- Mwalumbwe, I & Mtebe, J.S. (2017). Using Learning Analytics to Predict Students' Performance in Moodle Learning Management System: A Case of Mbeya University of Science and Technology, *EJISDC* 79 (1), 1-13
- Okendo, E.O., Atoni, R., Kitula, P.R. (2020). *Fundamentals of Educational Research: Concepts and Methods* Nairobi: Rinny
- Rogers, E. M. (2003). *Diffusion of Innovation* 5th (Ed.)
- Tossy, T. (2017). Measuring the Impacts of E-Learning on Students' Achievement in Learning Process: An Experience from Tanzanian Public Universities. *The Online Journal of Distance Education and e-Learning*, 5 (2), 61-68
- Valverde-Berrocoso, J., María del Carmen Garrido-Arroyo, M., Carmen Burgos-Videla, C. & Morales-Cevallos, M. (2020). Trends in Educational Research about e-Learning: A Systematic Literature Review (2009–2018). *Sustainability*, 1-23.