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AN ASSESSMENT OF THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN TEACHING AT A FAITH-BASED UNIVERSITY IN KENYA

Tesfaye Tadese & Vencie B. Allida*
University of Eastern Africa, Baraton, P. O. Box 2500-30100, Eldoret, Kenya
*Corresponding author: Email address - vencieallida@yahoo.com

This study was conducted bearing in mind the fact that the use of ICT in teaching and learning process is becoming a norm in the whole world. Hence, it aimed to find out teachers' use of electronic tools at a faith-based university, that is, in order to assess its value in increasing the efficiency of teachers in teaching and planning a course, communication between teachers and students using emails, threaded discussion, chat, electronic whiteboard, delivering course content and aspects of teaching. Generally, it assessed teachers' use of ICT or electronic tools at the university. The population was 148 teachers out of which the sample of 30 teachers was taken using purposive sampling and the basic research design that was employed in this study was quantitative (descriptive). The findings on teachers' use of ICT or electronic tools indicated that female teachers use electronic tools most often than male teachers. The only efficient communication tools teachers used to communicate between teachers and students was electronic mails, but other tools such as chat and threaded discussion (online forums) were used to a minimal level. In relation to teachers use of online surveys, online tutorials and delivery of course content their usage was inefficient. The recommendations are teachers need to use other communication tools such as chats, threaded discussion and electronic whiteboard, in addition to electronic mail. Teachers need to efficiently use online teaching methods in order to deliver course contents.

Keywords: ICT, electronic tools, online delivery of course content, communication.

Introduction and Literature Review

Teachers and students have been using information, communication and technology (ICT) in the process of teaching and learning since it had been invented. ICT has been providing many and fresh resource materials. Munro (2000) suggested that Developments in ICT have provided teachers with new, sophisticated and increasingly powerful tools with which to explore information and data. Other ICT tools facilitate the creation of new information-rich electronic resources for the classroom. It allows learners to explore and analyze the past, identify significant relationships and trends, develop and refine their understanding of important principles and concepts and present their perspectives and conclusions to a potentially global audience. This indicates technology has a part in the teaching and learning process.

Actually, teachers integrate technology into their classrooms for the improvement of the teaching and learning process. Usun (2009) has explained that teachers are the key persons to use Information and Communications Technologies (ICT) in the process of teaching in order to help integrate ICT into the curriculum. It is only if teachers play their role that the teaching and learning processes becomes effective and improved.

In 1950s the teacher-training institutions addressed the need for the development of technology. Usun (2009) pointed out that in 1957, the need for the development of technology was addressed through in-service training programs. The problem was not the provision of ICT, rather, it was the improvement in the use of ICT. Hence, in the year 1995, the concern was the requirement of the national standards for the integration of ICT in teacher preparation.

Many countries in Europe have recommended the use of ICT-related skills for the future and decided to train teachers. Balcon (as cited in Usun, 2009) highlights how ICT is becoming compulsory part of the curriculum in European countries, that is, for the initial training of teachers for either primary or secondary education.

Altun (as cited in Usun, 2009) has explained how the online program began in Turkey, in 1985-86 and in 1990 began to distance teacher training program and the first program was a pre-Bachelor certificate for 130.000 primary school teachers and the second program offered a university degree to 54.000 secondary school teachers.

In the East African Community, the ICT policies began in 2000s. Hennessy et al. (2010, p. 8) asserts that, "ICT policies began taking shape in the early 2000s. As noted before, there had been an increase in the unregulated use of ICTs that prompted the need for governments to offer direction in the use of these technologies…. The initial ICT policies were comprehensive and included all sub-sectors of the education system. However, the formation of the policies has been a long and complicated process." As can be seen from this discussion, the introduction of ICT in East Africa is very late as compared to other countries such as Europe and the United States of America.

Furthermore, in Kenya, the policies for ICT began in 1980s. Hare (as cited in Hennessy et al., 2010) noted that in Kenya, for example, the earliest known ICT policy dates back to the 1980s and by 2000 it had not been completed. These ICT policies, nonetheless, were and still are comprehensive and stress access to ICT tools and internet connectivity. According to Hennessy et al. (2010), the formation of ICT policy in Kenyan education has its roots in the Ministry of Research of the time. The motivation was to develop national policy guidelines for the development of ICTs in the country in order to address the then prevailing haphazard growth of the sector.

ICT further expanded from Kenya to Tanzania. "This final reason for policy formation in Kenya could be equated to Tanzania's where the need to develop an ICT policy led to the formation of a grouping called the eThinkTank, a forum supported by the United Nations Development Program" (Hennessy et al., 2010, p. 9).

The Use of Integration Electronic Tools in Teaching

As technologies increase in number and form, there have been continued research efforts in investigating how teachers can use ICT to facilitate student learning. Net books, interactive whiteboards, smart phones and digital video recorders, have become more available and affordable. The ever increasing computer networking capability in the educational system has become a fact and this in turn continued research efforts in investigating how teachers can use ICT to facilitate student learning (Bhasin, 2012).

According to Nur, Qistina, and Hazman (as cited in Zakariah & Khalid, 2016), ICT is not only a tool for teaching, but also acts as a driving force for educators to play their role in education. This means ICT helps teachers to be efficient in their teaching or it acts as a motivating factor in accomplishing the educational goals of a teacher. The application of ICT is intended to refine and elevate educators' teaching qualities.

Moreover, Storm suggested that the integration of ICT in education could increase students' proficiency through shaping of their skills and developing their knowledge (Zakariah & Khalid, 2016). Hence, integrating ICT in education helps students to achieve better in their studies by shaping their skills.

Electronic Tools Teachers Use to Communicate with the Students

Hendron (2008) suggested the use of web communication in the following ways: First, using electronic tools in education to connecting teachers and students together empowers teachers. Second, the web communication helps teachers and students to access to time-and location-independent resources.

Teachers can also communicate with their students using talk bots. "This can help prepare online learners, initiate conversation, respond to questions, and break the ice. Although this is a relatively new technology and not yet in widespread use, it has a great deal of promise for augmenting online instruction" (Shank, 2007, pp. 45-46).

Maurino (2004) pointed out that threaded discussion is becoming very popular for the past few years in distance or online education research. It is also becoming a potential vehicle for the development of critical thinking skills and deep learning. This discussion forum gives students an access to it without any limit of time and place.

Therefore, for teachers to have an effective communication with their students they have to understand and analyze the trend of the generation.

The Use of ICT in On-line Delivery of a Course Content

Teachers deliver the course content online. Online course contents include the following: Syllabus on the Web (assignments, office hours, course policies), Online lecture notes, Online Tutorials, Online Readings, Online Lab assignments or analytic tools, Links to online resources, Online Quizzes or quiz results, Online Surveys, Lecture audio/video, Online PowerPoint presentations, Simulations/Interactive models.

Garo (2011, p. 78)) explains on-line education as, "On-line education is an innovation of the distance learning where printed modules are the main tools for learning. Here the teacher and the students are linked up through electronic media or computer network and they enjoy the speed and accuracy of transacting issues for learning."

Trends of Using ICT in Teaching

Some years back, the use of ICT was not as common as today. According to the UNDP statistics in the year 2001, almost 80% of the teachers in developing countries are not ready to use the technology. However, efforts are being made to make teachers aware of the use of technology through pre-service and in-service courses (Bhasin, 2012). Teachers were lecturing using a blackboard and chalk. These days, technological breakthrough is everywhere in the world. Teaching in the classroom with computers and projectors is becoming a norm. Swamy (2013) is in favor of the above idea. In the 21st century, ICT has been influencing nearly all aspects of human life and are becoming part of our daily experience at an increasing pace. Teachers have realized these rapid advancements in ICT and its tremendous potential to revolutionize education, particularly school education.

The trend is fast moving from the traditional methods of teaching for the use of modern ICT. The traditional approaches and methods of teaching-learning have witnessed a reformative transformation and its place is occupied by ICT tools; such as online smart-boards, projectors, laptops, android systems, PCs, online lectures, tablets, cellular phones, e-readers, web resources and many other software and hardware devices. Education satellites also have made its stake in the process of teaching-learning and evaluation (Sawant, 2015). So, in this technological world, which is fast growing, teachers need to adopt and learn skills that will enhance the acquisition of knowledge. ICT has become an integrated part of our daily life, so it won't be long before it also becomes an inseparable part of students' and teachers' lives.

Research Methodology

In order to investigate, describe and analyze on the use of Information Communication and Technology (ICT) in Teaching, this research used quantitative, descriptive approach.

This study aimed to investigate the use of information communication and technology in teaching and the use of this technology in online teaching. The data was collected through questionnaire helped the researcher to arrive at conclusions. The research design was fit for this research because it was based on the data collected through the questionnaire.

The researchers used purposive sampling and the study made use of questionnaires in order to get information, regarding the use of ICT at the University, from sample teachers who represent the whole population. The questionnaires are adopted from the internet so as to fit the aim of the study.

Research ethics observed in this study are in accordance with those stated by Polit and Hungler (as cited by Langen, 2009), namely the principles of beneficence, of respect for human dignity and of justice.

Findings

Teachers' Use of Electronic Tools when Teaching and Planning a Course

The extent of teachers' usage varies based on different factors; such as gender, age, marital status, teaching experience, educational attainment and position. Next to this, the extent of using electronic tools when planning and teaching a course will be presented and evaluated based and the above mentioned variables.

Table 1

The Extent of the Respondents' Usage of Electronic Tools Based on Gender

Gender	Mean	N	Std. Deviation
Male	3.41	17	.870
Female	3.77	13	.725
Total	3.57	30	.817

According to table 1 female teachers at the University use electronic tools in planning and teaching courses most often than male teachers. The mean confirms this fact. In relation to the extent of usage the male teachers have a mean of 3.41 and females do have a mean of 3.77.

Table 2

Extent of the Teachers' Usage of Electronic Tools in Relation to their Educational Attainment

Respondents Educational Attainment	Mean	N	Std. Deviation
Bachelors	2.50	2	.707
Masters	3.58	19	.838
PhD	3.78	9	.667
Total	3.57	30	.817

As the mean of the data confirmed, those teachers who have a PhD in the university used electronic tools or the technology to a greater extent than others.

Table 3

Extent of the Teachers' Usage of Electronic Tools in Relation to their Position

Teachers Rank/Position	Mean	N	Std. Deviation
Tutorial Fellow	3.38	13	.961
Lecturer	3.63	8	.744
Senior Lecturer	3.67	6	.816
Professor	4.00	3	.000
Total	3.57	30	.817

Professors use the technology or electronic tools more than the tutorial fellow, lecturers, and senior lecturers.

Electronic Mail

Table 4

Electronic Tool (email) used in Communicating between Teachers and Students

Current status of teachers in using electronic tools	Frequency	Percent	Valid percent
Teachers who currently use emails to communicate between students	28	93.3	96.6
Teachers who plan to use email to communicate between students	1	3.3	3.4
Missing value	1	3.3	
Total	30	100	100

The above table indicates 93.3 percent of the teachers use emails to communicate between students.

Threaded Discussion

Table 5

Electronic Tool (Threaded discussion) used in Communicating between Teachers and Students

Current Status of teachers in using electronic tools	Frequency	Percent	Valid percent
Teachers who currently use threaded discussion to communicate between students	8	26.7	44.4
Teachers who plan to use threaded discussion to communicate between students	7	23.3	38.9
Teachers who would like more resources from the university directed into this area	3	10	16.7
Missing value	12	40	
Total	30	100	100

As indicated in the above table, many teachers do not use this tool (threaded discussion) in communicating with and or between students.

Chat

Table 6

Electronic Tool (Chat) Used in Communicating between Teachers and Students

Current Status of teachers in using electronic tools	Frequency	Percent	Valid percent
Teachers who currently chat to communicate between students	11	36.7	61.1
Teachers who plan to chat with students	6	20	33.3
Teachers who would like more resources from the university directed into this area	1	3.3	5.6
Missing value	12	60	
Total	30	100	100

The above data indicate that only 36.7 percent of the teachers use chatting to communicate with students.

Electronic Whiteboard

Table 7

Electronic Tool (Electronic Whiteboard)) used in Communicating between Teachers and Students

Current Status of teachers in using electronic tools	Frequency	Percent	Valid percent
Teachers who currently use electronic whiteboard to communicate between students	6	20	30
Teachers who plan to use electronic whiteboard with students	4	13.3	20
Teachers who would like more resources from the university directed into this area	10	33.3	50
Missing Value	10	66.7	
Total	30	100	10

The above table revealed that 20 percent of the teachers use electronic whiteboard and the other 13.3 percent plan to use it in the coming two years and 10 percent of them want the university to provide the resource and the remaining 66.7 percent did not give any response whether they are currently using it or their plan; this indicates that they may be even unaware of the electronic whiteboard.

Teachers Creating of Online Syllabus

Table 8

Teachers Creating of Online Syllabus

Current Status of teachers in using electronic tools	Frequency	Percent	Valid percent
Teachers who currently use syllabus on the web (assignments, office hours, course policies)	20	66.7	76.9
Teachers who plan to use syllabus on the web	4	13.3	15.4
Teachers who would like more resources from the university directed into this area	2	6.7	7.7
Missing value	4	13.3	
Total	30	100	100

The above table indicates that most teachers use (66.7%) syllabus on the web which is very important in many ways, it saves time, money, and students can be easily updated for any changes. Teachers who are planning to use in the next two years are also significant.

Delivery of Online Lecture Notes

Table 9

Teachers Online Delivery of Lecture Notes

Current status of teachers in using electronic tools	Frequency	Percent	Valid percent
Teachers who currently use online lecture notes	22	73.3	75.9
Teachers who plan to use online lecture notes on the web	5	16.7	17.2
Teachers who would like more resources from the university directed into this area	2	6.7	6.9
Missing value	1	3.3	
Total	30	100	100

As the above table reveals 73.3% of the teachers currently use online lecture notes which is so encouraging, however, much work is expected of the university until all teachers are able to use delivery of course content online.

Online Tutorials

Table 10

Teachers' Usage of Online Tutorials

Current Status of teachers in using electronic tools	Frequency	Percent	Valid percent
Teachers who currently use online tutorials	14	46.7	63.6
Teachers who plan to use online tutorials	7	23.3	31.8
Teachers who would like more resources from the university directed into this area	1	3.3	4.5
Missing value	8	26.7	
Total	30	100	100

Based on the above findings, 46.7 percent of teachers from the sample currently use online tutorials, when compare to the benefits of online tutorials it is not enough and much work is expected of the university to implement online tutorials so that it will be used by all teachers. 23.3 percent of the teachers are planning to use online tutorials within the coming two years.

Online Quizzes and Quiz Results

Table 11

Teachers' Usage of Online Quizzes and Quiz Results

Current Status of teachers in using electronic tools	Frequency	Percent	Valid percent
Teachers who currently use online quizzes and quiz results	12	40	54.5
Teachers who plan to use online quizzes and quiz results	9	30	40.9
Teachers who would like more resources from the university directed into this area	1	3.3	4.5
Missing value	8	26.7	
Total	30	100	100

As the finding suggests, only 40 percent of the teachers use online quizzes and quiz results and 30 percent of the teachers are planning to use in the next two years. This indicates more work need to be done in motivating teachers to use online quizzes because this save time. In addition to this, online quizzes reduce tension and help students to practice low level of critical thinking and leaving the class time for higher level of critical thinking.

Online Surveys

The online survey is very fast and cheapest method of conducting a survey and it has many advantages.

Table 12

Teachers' Usage of Online Surveys

Current Status of teachers in using electronic tools (technologies)	Frequency	Percent	Valid percent
Teachers who currently use online surveys	5	16.7	35.7
Teachers who plan to use online surveys	7	23.3	50
Teachers who would like more resources from the university directed into this area	2	6.7	14.3
Missing value	16	53.3	
Total	30	100	100

As can be seen from the above table, there are only a few teachers who are using online surveys (16.7 percent). 23.3 percent of them are planning to use in the coming two years. As the university is one of the higher educations in Kenya, where teachers focus on quality research based training. It is then appropriate to use an online survey because of its many advantages.

Even though teachers are using online delivery of a course content or aspects of teaching, they are not using it effectively. There are some electronic tools or technologies which teachers need to use them such as online surveys, online quizzes, but the investigation shows only a few numbers of teachers are using them.

Conclusions

Based on the findings the following conclusions were drawn:

1. Almost all teachers use electronic tools in different capacities and according to them the electronic tools or technologies are very important in helping students to learn course's content.
2. Almost all teachers use electronic mails to communicate with their students. But, only few of them use chats, threaded discussion, and electronic whiteboards.
3. Many teachers do not use online delivery of a course content and aspects of teaching, use of the syllabus on the web, online delivery of lecture notes, online tutorials and online surveys.

Recommendations

Based on the findings the following recommendations are made:

1. It is recommended that teachers should be able to use other electronic tools to communicate with students. The use of electronic mails has been replaced by chats and other communication tools and students have to a great extent use chat. Therefore, it is strongly recommended for teachers to be able to use other communication tools such as chats, threaded discussion and electronic whiteboard.
2. In this technological era, all teachers need to use online teaching methods in order to deliver course contents. Teaches should not cling to the traditional method of teaching students in a classroom setting only.
3. Teachers need to integrate electronic tools for effective communication with students and delivery of a course content.

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