FACULTY PERCEPTION AND SUPPORT TOWARDS USE OF INFORMATION COMMUNICATION TECHNOLOGIES ON QUALITY OF DISTANCE TEACHING AND LEARNING IN KENYAN UNIVERSITIES

Ngeera Flora Gacheri

School of Education and Social Sciences, Department of Education, Kenya Methodist University

Email: floramutwirig@gmail.com: flora.mutwiri@kemu.ac.ke

ABSTRACT

Background: Information Communication Technologies (ICTs) have transformed the way people live, work, do business and access education. With advent of ICTs, distance learning has become an alternative and supplement for face-to-face learning. This study investigated the influence of faculty perception and support towards use of ICTs on quality of Distance teaching and learning.

Methodology: The study was guided by mixed methods research approach. Specifically, convergent parallel design which is a mixed methods approach was used. The target population was universities that offer programmes through open, distance and e-learning (ODeL) targeting ODeL directors, lecturers who taught ODeL students and ICT technical staff from the selected universities that offer programmes through this mode. A sample size comprised of (4) ODeL directors, (78) lecturers, (4) ICT technical staff. Stratified, systematic and purposive sampling were used to sample the respondents. Among all the universities that offer ODeL programmes, four universities were purposively sampled for the study. Data was collected by use of document analysis guide, questionnaires and interview guide. Cronbach alpha correlation method was used to compute reliability co-efficient which was 0.8095 which was above 0.7 as expected in social sciences. To ensure reliability in qualitative data, interview guide with highly structured questions, with the same format and sequence of words was used for each participant. Descriptive statistics involving mainly frequencies, percentages and means were used to analyze the data. Logistics

Regression, specifically Wald Test, was used to test the null hypotheses. Omnibus test of model coefficients and Hosmer and Lemeshow Tests were used to test the fitness of the models. Data was presented in graphs and tables. Analysis of quantitative data was done using Predictive Analytical Software (PAS) version 20.0. Qualitative data was coded and analyzed in themes emerging from the narratives.

Results: The study revealed that faculty perception and support on use of ICTs was significant factor that influences quality of distance teaching and learning in selected Kenyan universities.

Recommendations: The study recommended that to enhance quality in ODeL, faculty perception and support on use of ICTs in distance teaching and learning was very critical.

Keywords: *Perception, Distance Teaching; Distance Learning; ICTs; Quality*

INTRODUCTION

The advent of information communication technologies (ICTs) has influenced how people worldwide carry out various tasks. There is no doubt that ICTs have enabled people to share information over long distances more effectively. Information communication technology has been adopted in teaching and learning leading to development of Distance Education (Nyerere, 2016).

In the world today, education is experiencing transformation in teaching and learning with the utilization of ICT as an enabling learning environment (Republic of Kenya, 2005). Fu (2013) posits that ICTs are transforming a teacher centered environment into a learner-centered environment where learners actively participate in the learning processes in the ICT classrooms and the teacher allows them to make decisions, plans and construct their own meaning. Fu points out that use of ICT can improve quality of education and associate learning to real life situations. According to UNCHE (2009), issues about quality in education presently cannot be avoided with high demand for higher education. Therefore, what the faculty members do to ascertain quality, turns out to be the most important and effective of all efforts and initiatives.

STATEMENT OF THE PROBLEM

In any university, the faculty members play a key role in instructional delivery. In distance teaching and learning and especially where electronic technologies are predominantly used, the role of a

faculty member changes from that of a teacher to that of a facilitator of learning. The faculty members are supposed to create a conducive learning environment for the learners to make them construct meaning from what they learn. Faculty attitude and support on use of ICTs is key. The main issue of concern was to establish the faculty perception and support on use of ICTs to enhance quality in distance teaching and learning in Kenyan universities.

LITERATURE REVIEW

Literature was reviewed to establish what other researchers have found out regarding influence of faculty perception and support on use of ICTs on quality of distance teaching and learning. Many scholars have showed the need for positive faculty perception and support in utilization of ICTs in instructional delivery through distance education.

Faculty perception and support on use of ICTs is essential if technology provided in education institutions is to be effectively used. UNESCO (2010) argued that in spite of the amount of complex technologies available, that technology will not be used unless faculty members have the skills, knowledge and attitudes necessary to integrate them into the curriculum. Mahalakshmi (2014) argue that spending limited resources on ICTs like hardware and software without funding professional development of the teacher is wasteful. It is for this reason that UNESCO (2014) further pointed out that experience in many countries of the world have shown that training of teachers in the use and application of ICTs is the main factor for improved student performance in knowledge acquisition and skills. Since teachers are key people in utilization of ICT in distance teaching, they need support and training to develop positive perception on use of ICTs. According to Nyerere et al. (2012), effective use of distance education technologies requires teachers to be properly trained in using technologies for ODeL instructional delivery.

Ozcan and Yildrim (2018) agree with the foregoing discussion by stating that although fewer studies consider the perceptions of administrators and support staff on technology use, it is important to determine a range of perceptions, concerns and interests regarding distance education technologies. This understanding, according to Mbugua (2013), can facilitate the diffusion and adoption of distance learning technologies throughout the institution to enhance student learning while maintaining the motivation of administrators, faculty and support staff. Availability of

infrastructure as well as experienced and dedicated faculty members are key factors that influence universities to offer online degree programmes as Ozcan and Yildrim (2018) argued.

Olusola and Alaba (2011) reported that in Nigeria, the use of digital media to solve problems is necessary so as to cope with the challenges brought about by the introduction of ICT with the view of improving the quality of teaching and learning. They point out that Instruction using ICTs is a problem to both the faculty and administrative staff of the university, as many of the staff members in Universities in Nigeria are not computer literate. In addition, the procurement of ICT equipment is substantially costly.

According to Gakuu (2006), there is no significant difference between University of Nairobi lecturers' attitude and students' attitude towards adoption of ICT across all disciplines. Gakuu indicated a positive attitude among lecturers and students towards the DL mode of instruction. In addition, Gakuu also found that the adoption rate would increase if the concerns raised by the lecturers are addressed. The study only focused on the attitude of lecturers and students at the University of Nairobi. This study focused on faculty perception and support on use of ICT to enhance quality of distance teaching and learning in Kenyan universities. Keiyoro (2010) carried out a study on the factors that influence the use of ICT in teaching and learning science curriculum in Kenyan Secondary Schools. The findings of this investigation were that learners and teachers in both NePAD and Cyber e-schools were not adequately trained on the use of ICT in teaching and learning science subjects.

A study carried out by Mbwesa (2010) on perceptions of faculty members on effectiveness of Web Education Software (WEDUSOFT) as a Learning Management System (LMS) in University of Nairobi showed that the LMS is seemingly effective according to a majority of academic staff at the University of Nairobi. Particularly, lecturers can use ICT to make learning more effective and enhance quality in their instructional delivery, since they are the ones tasked with translating the curriculum into various learning activities, and they are also important in regard to knowledge transfer to the students. Quality distance teaching, therefore, relies heavily on the skills and effectiveness of the lecturer as well as the tools for delivery.

Mbwesa contended that the success of any LMS depended on the assorted variables that exist within the overall system. The objectives analyzed interoperability, accessibility, reliability, navigability and flexibility, all of which should be aimed at making the learning process interesting and attractive, while ensuring that it is not too technical or complicated. The study used both probability and non-probability sampling procedures which allowed for high reliability of the findings**.** From the literature reviewed, it is important for faculty members to have positive perception towards ICT usage. Training of faculty is also paramount since information technologies are very versatile.

METHODOLOGY

This study used the mixed methods approach and specifically convergent research design was used. According to Creswell (2015) mixed methods approach involves mixing of qualitative and quantitative data. Purposive sampling was used to sample four (4) universities on the basis of offering ODeL programmes. The universities included two public universities, College of Education and External Studies of University of Nairobi, and Kenyatta University, Digital school. The other universities that were included in the study were two private universities, Kenya Methodist University; Digital Campus and Africa Nazarene University; Institute of Open Distance Learning. The study targeted lecturers who taught 4th year ODeL students in the Bachelor of Education (Arts) programme in the four universities, ODeL Directors and ICT technical support. The sample size for lecturers comprised of twenty-five (25) lecturers from University of Nairobi; School of Continuing and Distance Education, twenty (20) lecturers from Kenyatta University; Digital School, eighteen (18) lecturers from Kenya Methodist University; Digital Campus and fifteen (15) lecturers from Africa Nazarene University; Institute of Open and Distance learning. In total, seventy-eight (78) lecturers, were purposely sampled from the sampled universities to take part in the study. The study used census to sample four (4) ODeL Directors and four (4) ICT technical staff one (1) from each university.

Data was collected using open and closed ended questionnaires for the faculty members, interviews for the ODeL Directors and ICT technical support staff and documents analysis. Cronbach alpha correlation method was used to compute reliability co-efficient which was 0.8095 which was above 0.7 as expected in social sciences. To ensure reliability in qualitative data,

interview guide with highly structured questions, with the same format and sequence of words was used for each participant. Data was analyzed using descriptive statistics specifically the mean and inferential statistics namely logistics regression. Wald test was used to test the null hypothesis while Omnibus test of model coefficient and Hosmer and Lemeshow were used to test fitness of the model. Predictive Analytical System (Version 20.0) was used to analyze the data. In depth interviews were analyzed in thematic form and the results were presented in narrative discussions. Documents were analyzed using content analysis. In depth interviews and documents were used to validate results from the questionnaires in order to draw study conclusions and recommendations.

RESULTS AND DISCUSSION

A total of seventy-eight (78) questionnaires were administered to ODel lectures from the sampled universities. Out of 78 questionnaires, 60 (76.9%) were returned. In addition, out of four (4) ODeL Directors and four (4) ICT technical staff, three (3) ODeL Directors and three (3) ICT technical staff translating to 75% were interviewed. According to Mugenda (2008), above 70% response rate is acceptable.

The researcher was concerned with finding out the influence of faculty perception and support towards use of ICTs on quality of distance teaching and learning. Five scale Likert, in- depth interviews and documents analysis was used to establish the findings.

Table 1: Lecturers' responses on faculty perception and support on use of ICT

Faculty Perception and Support	N	Mean	Std. Deviation
The institution has done enough to encourage use of ICT in distance learning by the faculty.	60	4.2500	1.01889
The institution has put in place mechanisms to ensure quality of distance education by leveraging on ICT.	60	4.0333	1.10418
The institution makes budgetary allocations for ICT infrastructure for distance learning.	60	3.9833	.89237
There is ICT technical staff to assist lecturers and students to use ICT facilities in the institution.	60	4.4500	.67460
Fees for distance learners are made lower than of other modes of study in the institution to enable learners afford ICT tools.	60	3.5500	1.21327
Face to face learners and distance learners sit for the same exams and awarded the same certificates.	60	4.1333	.96492
The university offers ICT training opportunities to lecturers and students who participate in ODeL	60	4.5000	2.48726
The university has made arrangements to provide Laptops/iPads/Tablets to ODeL students and lecturers.	60	2.6500	1.48238
University has ICT policy	60	4.1000	.85767
The university has a policy on ODeL	60	3.9500	.99873
The university has aligned both ICT and ODeL policies	60	3.6500	1.03866
Valid N (listwise)	60		

From the findings presented in Table 1, it was evident that majority of lecturers (mean = 4.25) agreed that the institutions had made substantial efforts to encourage use of ICT in distance learning. The lecturers agreed that the sampled distance teaching universities had encouraged the use of ICTs. Gikonyo (2012) posits that for distance learning to achieve the goal of improving access, equality and equity, more awareness needs to be created to all the stakeholders. At mean (4.0), lecturers agreed that the universities ensured quality of ODeL by leveraging on ICT. Distance education managers need to know about the latest technologies that should be used. The sampled universities had embraced the use of LMS which provides virtual space for the students, staff and other learning support systems to interact, enables sharing ideas and materials in real time and asynchronous communication.

Lectures were asked whether the sampled universities had budgetary allocations for ICT infrastructure for distance learning. The response (mean = 3.9) agreed to the statement that they were aware of the budgetary allocations made by the universities to purchase ICT equipment. Mutuma (2005) and Arora (2016) argue that managing ICT is challenging and calls for involvement of every member of the organization.

The study sought to establish from the lecturers whether there was ICT technical staff to assist them in the use of ICT facilities in the institutions. Lecturers (mean = 4.4) agreed. This implied that lectures were assisted by the ICT technical staff to carry out tasks in distance teaching and learning. According to Ghavifekr, et al. (2016), one of the top challenges to use of ICTs in education was lack of ICT technical support. Other challenges include; low internet connectivity, virus attack, cuber-attack and printer malfunction (Ghavifekr & Rosdy, 2015). Ghavifekr, et.al. (2016) argues that ICT technical barriers discourage ICT users from effective use of ICTs in teaching and learning.

Lecturers were asked whether the universities offered ICT training opportunities to lecturers who participated in ODeL. The answer was affirmative. Majority (mean = 4.5) agreed that training of lecturers who participated in ODeL was conducted. For effective use of ICT in distance learning programmes, regular training on ICT is important for the faculty and the students because many distance teaching universities have recently migrated from print instructional media to digital learning. The findings agree with Gakuu and Kidombo (2010) who recommended that where a new technology is introduced, the users should be trained on how to use the resources appropriately.

Lecturers were requested to indicate whether the university provided laptops/iPads or tablets to ODeL students and lecturers. At a (mean = 2.6) lecturers disagreed with the statement. This implied that lecturers were not provided with laptops, iPads or Tablets and therefore, they used personal computers or smart phones during the evenings or over the weekends to interact with ODeL students. UNESCO (2013) points out that many developing countries equip educational institutions with educational ICT resources and digital tools without realizing the potential of smart phones and tablets, which are more affordable and make use of existing infrastructure.

Regarding the issue on whether the sampled universities had ICT and ODeL policies, majority of the students (mean = 2.88) lecturers (mean = 4.10) and (mean = 3.95) respectively agreed that the universities had ICT and ODeL policies. The findings indicated that the lecturers were aware of ICT policies that existed in the sampled universities. The purpose of any policy is to guide practice and therefore, with availability of ICT and ODeL policies, implied that ODeL objectives would be realized. Although there was no national policy on ODeL, distance teaching institutions had developed their own guidelines to guide the practices and besides, ODeL was guided by other national education policies and reports of task forces such as Sessional Paper No 1 of 2005, Sessional Paper No 14 of 2012 and CUE standards and guidelines of 2014. Specifically, Sessional Paper No 14 of 2012 envisaged that the challenges of quality and access in education can be solved if institutions of higher learning embrace ODeL by leveraging on ICTs and making use of ICT infrastructure available in the country.

5.1.2: Hypothesis test on relationship between faculty perception and support on use of ICT and the quality of distance teaching and learning

The study sought to establish the influence of faculty perception and support towards use of ICT on quality of distance teaching and learning. The null hypothesis (H_0) stated that there is no significant relationship between faculty perception and support towards use of ICT and quality of distance teaching and learning in Kenyan universities. Table 2 shows the fitness of the model.

Table 2: Model Fitness Tests for Institutional Support (Lecturers)

Test	Type of Statistic	Value of Statistic	P-Value
Omnibus	Chi-Square	8.112	0.004
Hosmer and Lemeshow	Chi-Square	3.732	0.713
Model Summary			
Nagelkerke R Square = 0.17			

Omnibus test of model coefficients shows the significance of the predictive capacity of the model when independent variables of the study are considered as a block. It can be observed that the p –

value of the model as a block was p=0.004 which is less than 0.05. This shows that the model has significant predictive capacity. Model summary shows that the model predicts 17% of the variations in quality of distance teaching and learning based on the Nagelkerke R Squared which is a pseudo–Pearson's R square.

Hosmer and Lemeshow Test measures whether the model is fit for prediction with the null hypothesis that the model is fit against the alternate that the model is not fit. The results show that $\chi^2(6) = 3.732$, p=0.713 > 0.05, therefore the null hypothesis is not rejected implying that the model is fit and that it has significant predictive capacity.

Table 3: Faculty Perception and Support Hypothesis Test

Variables	B	S.E.	Wald Test	P-value	Odds Ratio
ICT Faculty Perception and Support:					
No Faculty Perception and Support (reference)	-	-		-	1.000
Present Faculty perception and Support	0.313	0.121	6.718	0.010	1.367
Constant	- 2.013	0.927	4.713	0.030	0.134

The Logistic Function

Ln (P/ (1-P)) = -2.0.13 + 0.313X$_1$

Where;

P: Probability of Quality of Distance Teaching and Learning

Ln (P/1-P): Logit of Quality of Distance Teaching and Learning

X$_1$: Faculty perception and Support

From Table 3 and the Logistic Regression Function (6), the following observations can be made that a marginal increase in faculty perception and support towards use of ICT increases the logit of the quality of distance teaching and learning by 0.313 while holding all other factors constant. Also, looking at the odds ratio, it can be construed that a unit increase in faculty perception and

support increases the odds (likelihood) of quality of distance teaching and learning by 1.367 while controlling for other factors. The p-value was 0.010 which was less than 0.05. The null hypothesis is therefore rejected because faculty perception and support towards use of ICT is significant to influence quality of distance teaching and learning. UNCHE (2009) argued that issues about quality in education presently cannot be avoided with high demand for higher education. Therefore, what institutions do to ascertain quality, turns out to be the most important and effective of all efforts and initiatives.

The quantitative findings on the ICT and ODeL policies were compared using the interviews and document analysis. Interview data collected from ODeL directors and ICT technical staff showed that the sampled universities had ICT and ODeL policies that guided the operations of ODeL. One of the ICT staff had the following to say:

> *In institutions of higher learning, policies are used to guide practices and*
>
> *they serve as a blue print on how institutions should operate. Therefore,*
>
> *ODeL, likewise needs to be based on policy framework to be able to guide*
>
> *Its operations.*

An in-depth interview conducted with the ICT technical staff regarding their roles in distance teaching and learning revealed that the role of ICT technical staff was to provide ICT training to the students; lecturers and administrative staff. In addition, they also advise on ICT platforms to be used, system maintenance and upgrading, digital content conversion as well as uploading of digital content. One ICT technical staff said that;

> *"I am very busy and especially at the beginning of every semester. I orient*
>
> *students on computer mediated instructions; I train the lecturers on the use*
>
> *Learning Management System and in addition, I convert distance learning print*
>
> *materials to digital content'.* The respondent added that *'as you know,*
>
> *social networking tools are gaining popularity among many Kenyans, I am*
>
> *now managing the tools."*

Using document analysis guide and in-depth interview, it was established that the sampled universities had ODeL training manuals for training lecturers. Through the interview, one director said that;

Our faculty training normally takes place per department or per school. The

small groups enable us to have personalized training which is quite effective.

From the document analysis, it was established that universities had ICT and ODeL policies. The researcher found that in the ODeL policies had the organogram which included the ICT technical staff with duties and responsibilities that were well stipulated. This implies that the sampled universities support ODeL campuses by employing ICT technical staff to perform various duties and responsibilities as stipulated in the policies. The strategic plans also captured how the sampled universities intended to increase access to higher education by expanding distance education units by leveraging on ICTs.

The results of the interviews from the ODeL directors indicated that the administrations in the sampled universities support use of ICT in distance teaching and learning. Some agreed that administrators support for the use of ICT was very crucial. One director said that;

University managers support towards use of ICT in distance teaching and learning was

crucial since they are leaders in the universities and their support greatly affects the

behaviour of other members in the universities.

Other ODeL directors were of the contrary opinion that university administration had not fully supported use of ICT in distance teaching and learning. Some felt that majority of factors that are barriers to using ICT in ODeL were found in areas of administration. One director from the sampled universities had the following to say;

The faculty workload is the main obstacle in using ICT in distance teaching and learning

due to preparation time required and yet the university management does not do anything about

it. In addition, there is lack of recognition for those who teach distance learning courses as

*compared to those who teach conventional stud*ents *or even those who spend their time on research. The latter are highly regarded.*

Hoy and Miskel (2001); Goldwyn (2008) pointed out that the leadership in an organization will play an important factor in effectively integrating ICT in work practices. Hence, a university management that encourages use of ICT in teaching and learning and allows collaborations and partnerships among other universities for the exchange of ideas by all the stakeholders will play a significant role in enhancing quality of teaching and learning.

CONCLUSION

The findings indicate that faculty perception and support towards use of ICT was significant. University managers therefore, should motivate ODeL both full time and part time faculty by equipping them with requisite skills through continuous capacity building for quality improvement. The university managers in the universities offering distance learning programmes should seek alternative means of providing funds and other resources to subsidise students' fees. One of the solutions would include engaging in public-private partnerships. The university managers need to explore avenues for partnerships with other universities that offer programmes through ODeL for resource and information sharing. For instance, ICT facilities such as video conferencing facilities and digital content can easily be shared amongst universities offering programmes through ODeL. The findings have shown that ICTs enable students to access quality education anywhere and anytime.

More importantly; it is recommended that distance education providers should organise short courses and national symposium for faculty in universities offering ODeL. These would enhance appropriate training in ODeL digital content development and andragogy. This is because this study established that the sampled universities were found to rely on full-time lecturers who were trained to teach face-to-face students. Failure to train lecturers would compromise quality in ODeL. In addition, the quality assurance directorates, in conjunction with ODeL campuses, need to conduct regular students' and lecturers' satisfaction survey to assess the level of satisfaction on issues of quality of ODeL. The study recommends that the policy makers at university level should involve lecturers and in decision making including budgeting process and policy formulations. For

instance, lecturers responded that they were not aware of existence of ICT and ODeL policies in their institutions.

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