

The Effects of Institutional Support Factors on Lecturer Adoption of eLearning at a Conventional University

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Abstract: Conventional Higher Education Institutions in Kenya are in the process of implementing eLearning projects. These initiatives are, however, fraught with challenges. At the Maseno University eCampus, an evaluation of statistics on the institutional LMS after two years of implementation revealed that many lecturers had minimal or no log-in statistics, an indication that there was a gap in the adoption of eLearning. This study investigated factors explaining lecturer adoption of eLearning. A sample of 55 lecturers was selected and a questionnaire administered on their personal and institutional support factors for eLearning adoption. The findings revealed that the lecturers had a positive perception of the usefulness of eLearning and high self-efficacy in the adoption of eLearning. The gap in eLearning adoption was perceived by respondents to be a result of inadequate institutional support. The results suggest that lecturers are likely to be better adopters of eLearning not only when knowledge management processes and policies related to eLearning are developed but also where the institution works towards building and supporting a community of eLearning adopters.

Keywords: lecturer adoption, eLearning, institutional support, perceived usefulness, perceived Ease of Use.

Introduction

The community of eLearning practitioners in Africa has grown exponentially in the last decade. This is evident from the growing number of participants attending the eLearning Africa conferences each year as well as the growing number of eLearning programmes, research initiatives, partnerships and organizations in Africa (eLearning Africa, 2012). Adkins (2013) estimated the growth rate of eLearning in Africa at 15.2%, while revenue from eLearning was estimated to have reached \$250.9 million in 2011. The study further estimated that the revenues would double to \$512.7 million by 2016. A number of studies project that with better access to quality higher education through eLearning, Africa is likely to see a significant impact not only on Sustainable Development Goal 4, but also other sustainable development goals (Sachs 2012). There is, therefore, growing interest among researchers about the factors promoting or inhibiting quality learning outcomes in higher education institutions (HEIs), particularly those affecting the adoption of eLearning in these institutions.

Literature Review

Previously, students in Africa obtained various qualifications through distance learning from providers in Europe and North America (D'Antoni, 2006). The African Virtual University (AVU), established in 1997 with funding from the World Bank, was envisioned as a means of using ICT to



improve the quality of higher education. In its initial plan, the AVU was to become a degree granting institution, utilizing the best multimedia teaching materials available in the world. Eventually, AVU would transition from a World Bank project to a free-standing, self-financing, virtual education institution (Wolff 2002).

An evaluation of the AVU at Kenyatta University, Kenya, was done to identify the challenges faced by African institutions as well as examine the experience gained in using technology. The key challenges identified were electricity interruptions, high cost of Internet access, challenges in the bandwidth resulting in low Internet speeds and management challenges associated with establishing a special center under the operating policies and procedures of a traditional university. Another impediment to the AVU mode of learning was the difficulty in attracting and retaining qualified computer scientists (Juma, 2001, 2006). By 2001, it was clear that AVU needed to rethink its vision, content, delivery modes and business plan (Wolff 2002).

Although the role of educators in HEIs in Africa have been expanded to include the use of ICT for teaching and learning, there seems to be modest achievement in this area. Nigerian HEIs, for instance, have been ranked higher compared to most of the HEIs on the African continent but have not been able to compete in the global scholastic arena due to quality challenges, revealing a gap which needs to be filled (Bakare & Olaniyi, 2017).

A study conducted in some universities in Tanzania established that the implementation of eLearning was still very low despite the supportive policy environment created by the government through the enactment of the National ICT Policy and the Tanzania *Communication Regulatory Authority Act*. Among the ten universities studied, only the University of Dar es Salaam (UDSM) had implemented an eLearning platform. Other universities, such as Sokoine University of Agriculture (SUA), Mzumbe University and Open University of Tanzania (OUT), had basic ICT infrastructure with minimal implementation of eLearning (Sife et al., 2007). The challenges identified in the adoption of eLearning in Tanzanian universities included a negative perception towards eLearning due to a lack of capacity analysis before implementation, frequent electricity interruptions and inadequate ICT infrastructure for eLearning (Ndume et al. 2008).

In Zimbabwe, a study showed that the majority of the lecturers (97.5%) facilitating open, distance and eLearning (ODEL) had no experience in distance education (Mpofu et al., 2012). In a related study, Kasse and Balunywa (2013) assessed the implementation of eLearning in Ugandan institutions of higher learning. The study findings revealed that eLearning was used mostly as a means of delivering learning material (80%), minimally used to conduct discussions (12%) and to conduct assessment (2%). The study revealed major infrastructural and technical challenges and a negative attitude by staff and students towards eLearning as the limitations to full-scale adoption in these institutions. Some of the infrastructural challenges included lack of electricity and unavailability of Internet connectivity (Kasse & Balunywa 2013).

New virtual universities are springing up across the African continent despite these challenges. The success of University of South Africa (UNISA), a leading provider of distance learning in Africa, has clearly shown that eLearning has the potential to influence the delivery of education in Africa (Wolff 2002).

Evaluation of eLearning projects in Kenya indicates that its adoption in HEIs faces a wide range of challenges (Nyagorme, 2014; Tarus et al., 2015). An evaluation of the delivery of Open, Distance and eLearning at Nairobi University and Kenyatta University by Nyerere et al. (2012) revealed that provision of ODeL by Kenyatta University and the University of Nairobi is faced with various challenges such as non-optimal utilization of programme facilities, delays in production of study materials and inadequate funding. Some ODeL providers in Kenya were not guided by national policies, posing a challenge in resource mobilization and programme quality. Dual-mode institutions were overwhelmed and were not able to meet the demand for university education (Nyerere et al., 2012).

Another study (Makokha & Mutisya 2016) on the status of eLearning in Kenyan public educational institutions revealed that eLearning is at its infant stage. The universities lacked senate-approved eLearning policies to guide structured implementation of eLearning. About 32% of lecturers and 35% of students used the eLearning systems set up within the universities. The study also revealed that only 10% of the university programmes were offered online. Of these programmes, 87% of the online modules were simply lecture notes that were not interactive. The study further indicated that universities in Kenya lacked the requisite ICT infrastructure and skills for effective eLearning implementation (Makokha & Mutisya 2016).

The eCampus of Maseno University

Maseno University was established in 1990 as a constituent college of Moi University. It was by then the outcome of the government emergent policy of locating public universities away from major towns. However, the timing was in direct response to the crisis of double intake arising out of the combined graduation of high school students of the old 7-4-2-3 and the new 8-4-4 systems of education (Maseno University Charter, 2013). The vision for the eCampus of Maseno University began with a resolution by the University Senate in September of 2004 to start Open, Distance and eLearning programs (ODeL). It was resolved that the university would initially embark on production of print-based teaching and learning materials. The university began the process of creating awareness of ODeL and instituting mechanisms for the acquisition of skills among the lecturers, which was essential for developing appropriate print-based teaching and learning materials. A number of capacity building activities and policy development during the period between 2004 and 2006 were supported by the Commonwealth of Learning, an intergovernmental organization that works with governments and institutions of the Commonwealth to improve the quality of education and training using open, distance learning and technology enabled methodologies. These initiatives led to the establishment of the eLearning Center in 2007 (Maseno eCampus, 2011).

Early examples of contextualized eLearning best practices would later be demonstrated by the School of Mathematics, Applied Statistics and Actuarial Science in collaboration with Reading University, UK. Lessons on delivery of online programs were drawn from this partnership, and an institutional Learning Management System (LMS) was set up. Lecturers were trained in online content development and delivery by experts from Reading University, Open University (UK) and a team of consultants that had been contracted by the university to digitize the content and upload it on the institution's Learning Management System. The first group of Maseno University online learners was admitted in September of 2011. The eLearning Centre later evolved into the eCampus of Maseno University in January, 2012.

The eCampus was established so as to mainstream eLearning as a mode of delivery for the programmes offered by Maseno University. Through the eCampus, the university would be able to offer university programmes to learners who were unable to attend regular face-to-face classes owing to various constraints. Due to the wider reach envisaged by Maseno University programmes through eLearning, the university expected an increase in revenue. eLearning was also envisioned as a mode of delivery that would improve the lecturers' productivity, efficiency and effectiveness especially in teaching high enrolment courses to on-campus students. The LMS was expected to improve on teaching by providing avenues for dynamic feedback and score reporting to learners as well as presenting content to learners in a variety of formats (Ogange et al., 2018; Ladyshevsky, 2004).

Another key aim of the eCampus was to improve on learner-lecturer interaction in Maseno University programmes and courses offered through eLearning. The improved interaction was expected to result in higher student satisfaction. The team at the eCampus designed tools to monitor lecturer and learner participation within the courses on the LMS. Data from the user logs on the LMS was analysed to track online participation by various lecturers and learners. In the second year of the rollout of online courses at the eCampus of Maseno University, an evaluation of statistics on the institutional LMS revealed that a number of lecturers had minimal or no log-in statistics. A further analysis of lecturer participation within the courses revealed that there was minimal interaction with the students enrolled in the online courses. This was an indication that there was a gap in the adoption of eLearning among lecturers, leading to the conceptualization of this study to examine factors explaining lecturer adoption of eLearning at the university as well as the effects of the institutional support factors.

Research Design and Methodology

The study sought to evaluate lecturer adoption of eLearning at the eCampus of Maseno University, which is a virtual campus of Maseno University. A mixed method approach involving descriptive statistics and case study research design was used. The sample size of lecturers who were issued with a questionnaire was 55 out of a population of 170 who were involved in the development and teaching of eLearning courses at the time. A total of 48 responses were returned, representing an 87% response rate.

Discussion

Demographics of the Respondents

The lecturers sampled were from seven schools that have full programmes or are supporting online courses offered at the eCampus. A majority of the respondents (72.9%) were male, while 27.1% were female. With regard to the age of the respondents, 54.2% of them were between 35-44 years while only 8.3% were above 55 years old. Respondents between 25 and 34 years represented 10% while those between 45 and 54 years were 16.7%. In relation to the teaching experience at the university, 43.8% of the respondents had less than five years while 33.3% had between 6 to 10 years teaching experience. About 22% of the respondents had between 11 to 25 years of teaching experience at the university.

Lecturer Personal Factors in the Adoption of eLearning

Lecturer Self-Efficacy in Using the eLearning System

The lecturer personal factors of perceived usefulness of eLearning, perceived ease of adopting of eLearning and their self-efficacy in using the institutional eLearning system were the key indicators used to identify the lecturer factors that would explain their adoption of eLearning.

Self-efficacy relates to the instructor’s control of the technology (Webster & Hackley, 1997), and is crucial for troubleshooting tasks including adding a student at the last minute, modifying students' passwords and changing the course settings (Volery & Lord, 2000). The instructor would also be able to experiment with the various tools available on the LMS to improve on their courses as well as their instructional strategies. To establish the lecturer self-efficacy in using the eLearning system, the participants were asked to rate their ability in using the system. A total of 64.5% ranked their abilities as good and another 18.7% considered their abilities as excellent. The remaining 14.6% ranked their skills as average and another 2.1% as fair.

When presented with a set of statements to further examine the lecturers’ self-efficacy in using the eLearning system, it was established that 50% of the lecturers were able to work with the system with minimal support, while about 23% had prior experience in using eLearning systems and were, therefore, able to use the system with ease. Another 23% were able to work with the eLearning system due to the available technical support and only about 4% required a reference manual to work with the eLearning system. As outlined in Table 1 below, about 80% of the lecturers found the eLearning system easy to work with, which is an indicator of high self-efficacy among the lecturers in adopting eLearning.

Table 1. Perceived Ease of Use of the eLearning System Among the Lecturers.

General Perceived Ease of Use of eLearning Technology		Frequency	Percentage
I generally find the institutional eLearning system easy to work with	Strongly Agree	15	31.3%
	Agree	24	50%
	Neither Agree nor Disagree	4	8.3%
	Disagree	4	8.3%
	Strongly Disagree	1	2.1%
	Total	48	100%

Research has shown that lecturers require different skills and play different roles in order to be able to adopt the use of technology in teaching. According to Bonk (2000), the lecturer needs to be skilled in using the eLearning systems in order to be able to adopt such technology and enhance student learning experience. The author indicates that the lecturer needs to be not only adept at designing online courses, which would make students interact actively in the online course, but also to be effective in playing a social role to keep students motivated and increase their level of learning (Bonk, 2000).

Perceived Usefulness of eLearning Among the Lecturers

The research noted that 95.8% of the lecturers have a positive perception of eLearning; 81% of the lecturers were of the opinion that eLearning is useful in teaching by providing active learner participation opportunities; another 93.7% were of the opinion that eLearning provides avenues for a variety of approaches of disseminating learning materials; and 91.7% were of the opinion that eLearning is useful in providing dynamic learning content to learners. The study also found that 89.6% of the lecturers were of the opinion that eLearning is useful in providing dynamic feedback and score reporting approaches to learners, and 72.9% were of the opinion that eLearning enhances their productivity and job performance. About 18.8% of the lecturers were undecided about whether eLearning is useful in enhancing productivity and improving performance.

These findings concur with Shee and Wang (2008) who argue that an eLearning system offers educators and students “possibilities”, instead of “ready to use” resources. In this regard, while the effectiveness of a general information system is based on the performance of individuals, an eLearning system’s effectiveness largely depends on collaboration between individuals (both educators and students). The interaction between learners and lecturers is largely based on their perceived usefulness of eLearning. The lecturers in the study who had a positive perception of eLearning were, therefore, likely to use it to create a rich learning environment for the learners to interact with the content and each other.

Lecturer Perspective on the Institutional Support for eLearning Adoption

In order to establish the lecturer perception of the institutional support provided for eLearning adoption, about 35.4% indicated that eLearning had been embedded in the department’s normal teaching. This meant that the eLearning courses were considered to be part of the teaching load in the planning for course allocation, examinations and all processes for semester preparations at the department. There, however, seemed to be a general consensus among the lecturers that funding allocated for eLearning was not sufficient to facilitate adoption. Heads of department and deans were perceived to be supportive of eLearning, while most lecturers seemed not to be aware of the copyright and intellectual property issues that applied to them when developing content for eLearning within the institution. About 37.6% of the lecturers were not satisfied with the institutional measures on copyright and intellectual property issues that touch on developing eLearning content for the university, with some explaining that it was unclear who owned the copyright for the content developed for eLearning.

Training and Technical Support for eLearning

In relation to training and technical support, only 25% were in agreement with the fact that they were provided with access to technical support and educational software. The lecturers indicated that they were supported through initial training by the technical and support team on the eCampus team but more training needed to be done since the training offered to staff was too short, thereby, inhibiting their mastery of the required skills. Elgort (2005) indicated that making it trivial for a lecturer to upload course content of the LMS and interact with learners online would result in a surface approach in adopting eLearning. Rogers (2003) identified re-invention as a vital part in the adoption of an innovation. This is the point at which the adopters customize an innovation to meet their unique

situation. In adopting eLearning, continuous training enables lecturers to re-engineer and adopt it to effectively deliver their courses online.

Table 2. Institutional Support for eLearning Adoption.

Institutional Support Factors for eLearning Adoption	SA	A	U	D	SD
eLearning is embedded in the department's normal teaching	12.5%	22.9%	18.8%	25.0%	20.8%
Funding is available for eLearning	4.2%	6.3%	16.7%	35.4%	37.5%
Head of Department/School and the Dean are supportive of eLearning	20.8%	45.8%	16.7%	8.3%	8.3%
Copyright and intellectual property issues have been resolved	6.3%	4.2%	52.1%	18.8%	18.8%
Promotion and tenure policies recognize teaching developments using eLearning systems	4.2%	6.3%	31.3%	35.4%	22.9%

Of the lecturers surveyed, 75% identified difficulty in accessing technical support at the schools and departments as an inhibiting factor to the adoption of eLearning. Some of the lecturers noted that the number of eLearning technical and support staff was inadequate, and that they were stationed at the eCampus office located at the Kisumu Campus of Maseno University, which was some 26 kilometers away from the Main Campus. This meant that the lecturers designing and facilitating online courses who required personal support had to travel a long distance to get access to the support staff. Adequate support for eLearning adoption in a conventional university includes hiring enough technical personnel in instructional design and systems support, and deploying them to the various campuses to ensure that the lecturers get support when needed.

Table 3. Training and Technical Support.

Technical and Training support for Students and Staff for eLearning Adoption	SA	A	U	D	SD
Staff are supported through access to technical support and educational software development expertise	8.3 %	16.7 %	39.6 %	12.5 %	22.9 %
Students and staff have access to appropriate hardware and software	12.5 %	14.6 %	18.8 %	31.3 %	22.9 %

Table 4. Training and Access to Technical Support.

	Yes	No
Is the training and Support accorded to you sufficient for you to participate in adoption of eLearning?	66.7%	33.3%
Do you find it difficult to access support for eLearning?	75%	25%

From the study, it emerged that the institutional support expected included capacity building, adequate access to the Internet and all relevant ICT infrastructure required for the adoption of eLearning, support personnel at the eCampus, standardized remuneration for developing and facilitating learners in an online course and policy on eLearning adoption.

The Relationship between Institutional Support and the Perceived Usefulness of eLearning among Lecturers

To establish the relationship between the institutional support provided to the lecturers and their perception of the usefulness of eLearning, a correlation analysis of the variables of institutional support and perceived usefulness of eLearning among lecturers was done, given the findings in earlier studies that suggest that the perceived usefulness and Ease of Use of an eLearning system has a significant effect on the behavioral intention to use the system. According to Pituch and Lee (2006), having a distance learning system within the educational institution setting would not automatically lead to its use. The lecturers' perception on its usefulness and ease in adopting it will influence the widespread use of the system, either for eLearning or blended learning practices.

Table 5. Correlation Analysis Between Institutional Support factors and the Lecturer's Perceived Usefulness of eLearning.

		IS	PU
Institutional Support (IS)	Pearson Correlation	1	-.075
	Sig. (2-tailed)		.612
	N	48	48
Perceived Usefulness of eLearning (PU)	Pearson Correlation	-.075	1
	Sig. (2-tailed)	.612	
	N	48	48

Table 5 suggests that the perceived usefulness of eLearning and the institutional support have a strong negative correlation ($r = -0.75$). The relationships between Perceived usefulness and institutional support was not significant ($p = 0.612$). It was observed that 95.8% of the lecturers have a positive perception of eLearning despite the inadequate institutional support, as depicted in Tables 2, 3 and 4.

The Relationship between Institutional Support and the Perceived Ease of Use of eLearning Among Lecturers

A correlation analysis was done between Institutional Support and the lecturer Perceived Ease of Use of the eLearning system to establish the influence of institutional support factors on the perceived usefulness of eLearning as presented in Table 6. The Perceived Ease of Use and institutional support variables had a weak but positive relationship. The relationships between Perceived Ease of Use and institutional support was significant ($p = 0.02$).

Table 6. Correlation Analysis between Institutional Support and the Lecturer's Perceived Ease of Use.

		PEU	IS SUPPORT
Perceived Ease of Use	Pearson Correlation	1	.335*
	Sig. (2-tailed)		.020
	N	48	48
Institutional Support	Pearson Correlation	.335*	1
	Sig. (2-tailed)	.020	
	N	48	48

* Correlation is significant at the 0.05 level (2-tailed).

Challenges in the Adoption of eLearning Among Lecturers

Whereas lecturers had a positive perception on the usefulness of eLearning, there were institutional factors that inhibited the effective and efficient adoption of eLearning among the lecturers, which included inadequate bandwidth and the lack of computer laboratories on-campus, both of which made it difficult for lecturers without access to a computer or laptop to teach online courses. Payment for designing and teaching online courses was inconsistent with the approved part-time teaching rates for face-to-face programmes, since the latter were better structured, predictable and often prompt. This led to reduced motivation among lecturers teaching online courses, which might explain the low log-in statistics in the online courses. The budgetary allocation for eLearning was considered by some lecturers as insufficient for the most part, thereby inhibiting regular online engagement with learners. This was in contrast to other face-to-face part-time teaching, where lecturers tended not to skip classes and maintained class attendance lists.

When asked to describe their expectations from the institution to enable them to adopt eLearning, participants indicated that more support was needed for better access to the Internet, technical support and working spaces for collaborative work with colleagues. Some of the respondents noted that some departments were yet to take ownership of the eLearning process, as online teaching was not considered as part of the regular teaching load, making it a major hindrance to eLearning adoption. Participants indicated that, whereas, learners' response to online assessment was prompt, credible online assessment was demanding to develop compared to assessment in face-to-face learning. The need for lecturers to commit more time in designing online assessment has been emphasized in other studies, as learners have a positive perception of assessment forms that allow for quick feedback from the lecturers (Ogange et al., 2018). Some of the lecturers also expressed difficulty in work-load balancing between face-to-face teaching, eLearning and other duties.

Recommendations and Conclusion

The results of this study suggest that institutional support towards improved lecturer proficiency in eLearning technology and pedagogy will impact on their perceived level of Ease of Use of eLearning systems, improve self-efficacy in the use of eLearning technologies and their perceived usefulness of eLearning. This would lead to higher levels of adoption of eLearning among lecturers. Webster and Hackley (1997) suggested that three instructor characteristics that influence their efficiency in teaching in an online environment are; the instructor's attitude towards technology, his/her teaching style and the level of control of technology. Whereas a number of lecturers may have been confident about their skills in using the eLearning system, they were only able to adopt it in teaching their courses online with sustained capacity building to improve their skills in eLearning and blended learning methodologies.

It can be argued that the low adoption rates for eLearning among lecturers in a conventional university may be a direct result of the tendency of the university systems to apply the same policies, structures and budgetary practices in face-to-face teaching and learning, to eLearning. The perceived lack of administrative support for eLearning can be attributed to the use, by lecturers and administrators, of face-to-face teaching as a benchmark for quality teaching, hence the limited premium attached to online teaching in such institutions, a finding that concurs with Ladyshevsky (2004). Better support systems, policies and structures are needed to encourage eLearning adoption in a conventional university. This study also supports others that have found that lecturers are better adopters of eLearning where there are efforts by the institution to build a community of eLearning adopters as well as knowledge management processes and policies related to eLearning (OECD, 2005; Kirkland & Sutch, 2009). With improved lecturer proficiency in eLearning, good ICT infrastructure and conducive eLearning policies, the community of adopters is likely to innovatively deploy eLearning and blended learning methodologies to improve the quality of learning outcomes both for on-campus and off-campus learners.

Disclaimer

The views expressed in this article are those of the authors and do not in any way reflect the views of Maseno University or the Commonwealth of Learning.

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Cite this paper as: Makhaya, B.K., & Ogange, B.O. (2019). The Effects of Institutional Support Factors on Lecturer Adoption of eLearning at a Conventional University. *Journal of Learning for Development*, 6(1), 64-75.