EVALUATING FACTORS EXPLAINING LECTURER ADOPTION OF E-LEARNING AT THE E-CAMPUS OF MASENO UNIVERSITY

BY

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DECLARATION

I certify that this thesis is my original work and all the materials in it which have been borrowed have been referenced.

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DEDICATION

To my Husband, Oguk Owade Zedekiah and Children, Zawadi Pendo Paula and Imani Mwamba Ernest.

ABSTRACT

A wide range of literature on evaluation of eLearning projects in Kenya indicates that its adoption in Higher Education Institutions (HEIs) is low and faces a wide range of challenges. Studies on factors enabling eLearning adoption indicate that personal and institutional factors are important in the successful eLearning projects. In the first year of the rollout of online courses at the eCampus of Maseno University, an evaluation of statistics on the institutional Learning Management System (LMS) revealed that a number of lecturers had minimal or no log in statistics, a further analysis of the lecturer participation within the courses revealed that the lecturers were not interacting with the students enrolled in the online courses. This was indication that there was a gap in the adoption of eLearning among lecturers. The objectives of the study were to; evaluate the effect of lecturer personal factors in the adoption of eLearning at the eCampus of MasenoUniversity, examine the effect of institutional support factors on the adoption of eLearning and identify challenges experienced by lecturers in the adoption of eLearning at the eCampus of MasenoUniversity. The lecturer factors of self-efficacy, perceived usefulness and perceived ease of use in relation to eLearning were adopted from the Technology Adoption Model (TAM) which is used to understand the user acceptance of technology. The study further evaluated the institutional support factors of policy on eLearning, ICT infrastructure and the support accorded to lecturers involved in eLearning. The institutional factors were adopted from the Conceptual framework on inhibiting and facilitating factors for eLearning by Andersson. A sample of 55 lecturers was selected based on the sample selection formula by Calmorin. A questionnaire was administered to the 55 lecturers from seven schools that offer courses online through the institutional eLearning system. There were 48 responses which represents 87.3% response rate. The study revealed that lecturers had a positive perception of the usefulness of eLearning in improved learner-lecturer participation and dissemination of learning resources in a variety of formats to learners however, support factors of ICT infrastructure and policies on eLearning did not make it favorable for the lecturers to adopt eLearning. The findings further revealed that minimal administrative support was the major contribution to slow adoption of eLearning. Based on the findings, a Logical Framework Matrix for lecturer adoption of eLearning in an eLearning project for an institution of higher learning was developed. The matrix developed from this study will be useful in the evaluation of lecturer adoption of eLearning in institutions of higher learning. The findings from this study will contribute to the academic literature on critical success factors for eLearning adoption among faculty in Higher Education Institutions in Kenya and will be critical in formulating eLearning policy that is favourable for lecturer adoption of eLearning within the eCampus of Maseno University.

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ACRONYMS

AVU	Africa Virtual University
DOI	Diffusion of Innovation
HEI	Higher Education Institutions
ICT	Information Communication Technology
LMS	Learning Management System
ODeL	Open, Distance and eLearning
TAM	Technology Acceptance Model
TRA	Theory of Reasoned Action
UTAUT	Theory of Acceptance and use of technology
CD	Compact Disk
UNESCO	United Nations Educational, Scientific and Cultural Organization.

DEFINITION OF TERMS

eLearning: Innovative approach for delivering well-designed, learner-cantered, interactive, and facilitated learning environment to anyone, any place and any time by utilizing the attributes and resources of various digital technologies along with other forms of learning material suited for open and distributed learning environment.

Self-Efficacy: An individual's confidence regarding his or her ability and skills in using a given technology or system

Perceived Usefulness: The degree to which a person believes that using a particular system would enhance his or her job performance

Perceived Ease of Use: The degree to which a person believes that using a particular system would be free from effort

Behavioural Intention: A person's perceived likelihood or subjective probability that he or she will engage in a given behaviour

Institutional Attributes: Availability of ICT facilities, human resource and regulatory framework at the institutions upon which eLearning adoption depends.

Monitoring: Observe and check the progress or quality of (something) over a period of time; keep under systematic review.

Evaluation: The making of a judgment about the amount, number, or value of something; assessment.

Problem Tree: A problem tree provides an overview of all the known causes and effect to an identified problem.

Log-Frame Matrix: A log frame matrix is a concise document that outlines the key features that lead to a project achieving its goal

CHAPTER ONE: INTRODUCTION

1.1. Background to the Study

Development of eLearning products is one of the most rapidly expanding areas of education and training (Attwell, 2006). The eLearning community in Africa has grown in leaps and bounds, this is evident from the growth in the number and variety of participants attending the eLearning Africa conferences each year and 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% and revenue from eLearning were estimated to have reached $250.9 million in 2011. The study further estimated that the revenues would double to $512.7 million by 2016. The findings in a 2013 report by Adkins on the African Market for eLearning products and services was that the supply and demand metrics for eLearning in Africa are evolving rapidly(Adkins, 2013).

Previously, African students obtained various qualifications through distance learning 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. This was aimed at providing increased opportunity to secondary school leavers for whom spaces were not available in Higher Education Institution (Wolff, 2002). The delivery model of AVU integrated satellite and internet technologies and allowed the provision of quality content from all over the world while taking into account the technological and infrastructure limitations prevailing in Africa. The AVU teaching-learning model consisted of a mixture of videotaped and live lectures delivered by one-way video, 2-way audio digital satellite broadcast and e-mail interaction between students and instructors, supplemented by textbooks, course notes, and learner support in the classroom by local facilitators. The AVU's choice of technology was justifiable in 1997, but it is considered relatively expensive and rigid (Wolff, 2002). Asynchronous online learning is now seen to be the technology of choice for virtual distance learning. The cost of internet connectivity is decreasing rapidly, and it is also possible to use proxy servers and CDs to mimic much of the interactivity of the internet(Wolff, 2002). With the Web and other multimedia tools, rich teaching/learning contexts can be created (Zinyeka, 2004). Higher educational institutions are increasingly moving toward the use of the Internet for delivery of their courses, both on campus and at a distance (Ally, 2008). The Internet provides significantly different and interesting possibilities for computer-mediated

communication and learning from other forms of educational technologies (Weller, 2002). The internet adds 'e' to learning, eLearning is technology enhanced learning (Mayes & Freitas, 2004). The technology is used to achieve better learning outcomes, or a more effective assessment of these outcomes, or a more cost-efficient way of bringing the learning environment to the learners (Mayes & Freitas, 2004).

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 was to transition from a World Bank project to a free-standing, self-financing, virtual education institution (Wolff, 2002). Having been one of the more successful learning centers of the AVU project during its pilot phase from 1997 to 2001, an evaluation of the Kenyatta University AVU was done to identify the challenges faced by many African Institutions as well as the experience gained in using technology. The significant challenges identified were electricity interruptions, high cost of internet access, challenges in the bandwidth resulting in low internet speeds and management challenges associated with operating a special center under the operating policies and procedures of a traditional university. An AVU learning center requires designated satellite transmission viewing rooms, adequate computers, Local Area Network servers, good Internet connections, learner-support systems, printers and relevant software. All these teaching and learning resources must be procured in good time and managed so as to facilitate provision of quality education. However, delays in decision-making and slow bureaucratic system was a major challenge to effective delivery of AVU academic programmes.

Another impediment to the AVU mode of learning was the difficulty of attracting and retaining qualified computer scientists (Juma, 2001; Juma, 2006). By early 2001, it was clear that AVU needed to rethink its vision, content, delivery modes and business plan (Wolff, 2002). AVU became a technology and content broker and advisor for participating institutions, serving as a technical resource and catalyst for ICT investments. AVU's strategy included assisting partner African institutions in upgrading their access to high-speed Internet connectivity and other technology improvements; building the capacity of partner universities to develop and deliver ICT-enhanced distance education programs; facilitating delivery of on-line accredited programs; developing a web-based portal for the African educational community to share information and find new distance learning products (Wolff, 2002).

According to Bakare & Olaniyi (2017), although, the roles of educators in higher institutions in Nigeria have been expanded to include the use of information and communication for teaching and learning, there seems to be less achievement in this area. Nigerian higher institutions which have been ranked higher on the African continent, have not done well in competing globally due to certain challenges, this reveals a gap which needs to be filled by taking necessary steps in putting Nigerian higher institutions forward in the international scholastic arena (Bakare & Olaniyi, 2017). Bakare and Olaniyi (2017) argue that proper use of information and communication technology for teaching and learning can be used to fill this gap in higher institutions in Nigeria. They recommend that ICT integration in Nigerian higher institutions must be adopted to support curricular goals of the institutions for higher quality education.

A study conducted in some universities in Tanzania found out that, as is the case with other African countries, the implementation of eLearning was still very low despite the opportunities provided by the open source technology and the supportive environment created by the Government by enacting the National ICT Policy and the Tanzania Communication Regulatory Authority Act (Sife, Lwoga, & Sanga, 2007). Among the ten universities studied, only the University of Dar es salaam (UDSM) had managed to implement eLearning platforms, the other universities such as Sokoine University of Agriculture (SUA), Mzumbe University, and Open University of Tanzania (OUT) had basic ICT infrastructure but, the implementation of eLearning was minimal (Sife et al., 2007). The major challenges identified in the adoption of eLearning in Tanzanian Universities were; a negative perceptions towards eLearning due to lack of capacity analysis before implementing eLearning, frequent electricity interruptions and inadequate ICT infrastructure for eLearning (Ndume, Tilya, &Twaakyondo).

A study conducted in Zimbabwe 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). Effective use of ICT technologies for teaching demands that teaching staff be properly trained, there are very few lecturers from African universities that have been trained on eLearning, this situation poses a major challenge in introducing eLearning education on the continent (Makokha & Mutisya, 2016). In a related study, Kasse and Balunywa (2013) assessed the implementation of eLearning in Ugandan institutions of higher learning namely Makerere University of Kampala (MAK); Makerere University Business School (MUBS);

Kampala International University (KIU), and Islamic University in Uganda (IUIU). The choice of these institutions was based on the fact that they are the highest-ranking institutions in Uganda in terms of the quality of education, student population, and ICT adoption. 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 negative attitudes by staff and students towards eLearning as the limitations to full-scale adoption of eLearning 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 everywhere in Africa, on the other hand, there are a number of challenges that face universities in developing countries as they seek to set up eLearning (Sife et al., 2007). Sife, Lwoga, and Sokoine (2007) assert that African universities which should be in the forefront of ensuring Africa's participation in the ICT revolution are themselves unable and ill-prepared to play such a leadership role. The University of South Africa (UNISA) is a leading provider of distance learning in Africa. The success of UNISA has clearly shown that eLearning has the potential to influence the delivery of education in Africa (Wolff, 2002).

1.1.1. E-learning in Higher Education Institutions in Kenya

Kenyan Higher Education Institutions are encouraged by the government within the framework of Kenya Vision 2030 to introduce eLearning and blended learning so as to increase access to higher education in Kenya(NESC, 2007). Kenya Vision 2030 is the nation's new development blueprint for 2008 to 2030 which aims at making Kenya a newly industrializing, "middle income country providing high quality life for all its citizens by the year 2030". Implementation of eLearning alongside other strategies for education in the Kenya Vision 2030 is anticipated to address the strategic areas, namely; access, quality, equity, technology and innovation. The vision for the education sector within the Kenya vision 2030 is "to have globally competitive quality education, training and research for sustainable development" (NESC, 2007). Kenya adopted a National ICT Policy in January 2006. This policy aims at ensuring the availability of accessible, efficient, reliable, and affordable ICT services. The section on information technology states that government will encourage the use of ICT in schools, colleges, universities, and other educational institutions

in the country so as to improve the quality of teaching and learning (Nyerere, Gravenir, & Mse, 2012). A sessional paper on policy framework for education and training for reforming education and training in Kenya developed by the Ministry of Education and Ministry of Higher Education, Science Technology tabled in parliament in July 2012 categorized ICT in Education into two (MOE & MOEST, 2012); (i) E-Government which aims at mainstreaming ICT in all government operations and service delivery such as Education Management Information Systems (EMIS) and Educational Financial Management and Information Systems (EFMIS). These aim at facilitating education managers and administrators with accurate and timely data for better and informed decision-making and financial management. (ii) Interactive eLearning which aims at mainstreaming ICT as a tool for teaching and learning.

Evaluation of eLearning projects in Kenya indicates that its adoption in Higher Education Institutions (HEIs) is low and faces a wide range of challenges (Nyagorme, 2014; Tarus, Gichoya, & Muumbo, 2015). An evaluation of the delivery of Open, Distance and eLearning in 2012 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 that hinder its fully effective implementation. Various challenges touching on non-optimal utilization of programme facilities, delays in production of study materials, inadequate funding, and low teaching staff levels were identified. Efforts of the ODeL providers in Kenya were also not guided by national policies, posing a challenge in resource mobilization and programme quality issues. These institutions, being dual mode, were overwhelmed and were not able to meet demand for university education (Nyerere et al., 2012). Another study by Makokha and Mutisya (2016) on the status of eLearning in Kenyan Public institution revealed that that eLearning is at its infant stage. A majority of 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. On the programmes offered online, 87% of the online modules were simply lecture notes and not interactive. The study further revealed that Universities in Kenya lacked requisite ICT infrastructure and skills for effective eLearning implementation(Makokha & Mutisya, 2016).

1.1.2. Critical Success Factors in eLearning Implementation

Three main variables that affect the effectiveness of eLearning are technology, instructor characteristics and student characteristics. The reliability, quality and medium richness are key technological aspects that need to be considered (Volery & Lord, 2000). Technology is seen as a facilitator of learning but the lecturer is the one at the center of planning online learning. While educational technology will continue to evolve, the hardware, software and network infrastructure is sufficiently mature that the focus should shift to how to use the technology most appropriately to facilitate learning (Philips, 2005). When instructors exhibit more positive attitude towards eLearning, they have more behavioral intentions to use eLearning. Effective implementation of technology depends on users' having a positive attitude toward it. As individuals become more positive toward eLearning, they will have greater behavioral intention to use it. Adequately supported lecturers in the eLearning possess three characteristics identified by Vollery and Lord (2000), right attitude towards technology, effective online teaching styles and good control of technology. Philip (2005) concludes that educational technology is a tool, not a means in itself. Like any technology, educational technology does not lead to learning, but, together with teacher support, it can facilitate effective learning activities.

Distance education institutions, students and staff have often had to overcome negative perceptions about the overall quality of their programmes and qualifications (Gaskell & Mills, 2015). Gaskell & Mills (2015) identify four of the major challenges cited as undermining the credibility and effectiveness of eLearning: the quality of teaching, learning and quality assurance processes; outcomes; access; and the perceptions of students, staff and employers. Robust and strategically significant evidence is needed to assure policy-makers, funding agencies, faculty members, learners and the general public that quality in operations and outcomes is not being compromised by eLearning, but improved, and that the new institutions, forms of delivery, methodologies and uses of technology are both fully justified and beneficial (Gaskell & Mills, 2015). A literature review by Philips (2005), revealed that there are several factors which have influenced the low take-up of effective educational technology. One factor is the individual beliefs about teaching and learning held by academic staff and educational designers who develop eLearning projects. These beliefs influence academics' choices of pedagogical approaches and use of educational technology. Philips (2005) further notes that beyond the individual factors, institutional factors also impact on the success of eLearning projects.

In a study investigating factors affecting the wide spread adoption of educational technology in Australian universities, a range of institutional issues were identified and were classified into three themes; policy, culture and support (McNaught, Phillips, Rossiter, & Winn, 2000). McNaught et al., (2000) represented the three components as a Venn diagram in figure 1 below. The Policy theme looked at specific institutional policies, such as equity and intellectual property and the alignment of policy throughout the organization. Culture incorporated factors such as collaboration within institutions, and personal motivation of staff to use eLearning as well as particular aspects of funding, staff rewards and time, leadership, teaching and learning models, and attitudes. Support incorporated institutional issues including IT, library and administrative infrastructure, professional development for staff, student support, educational and instructional design support for academic staff, funding and grant schemes, and IT literacy (McNaught et al., 2000).
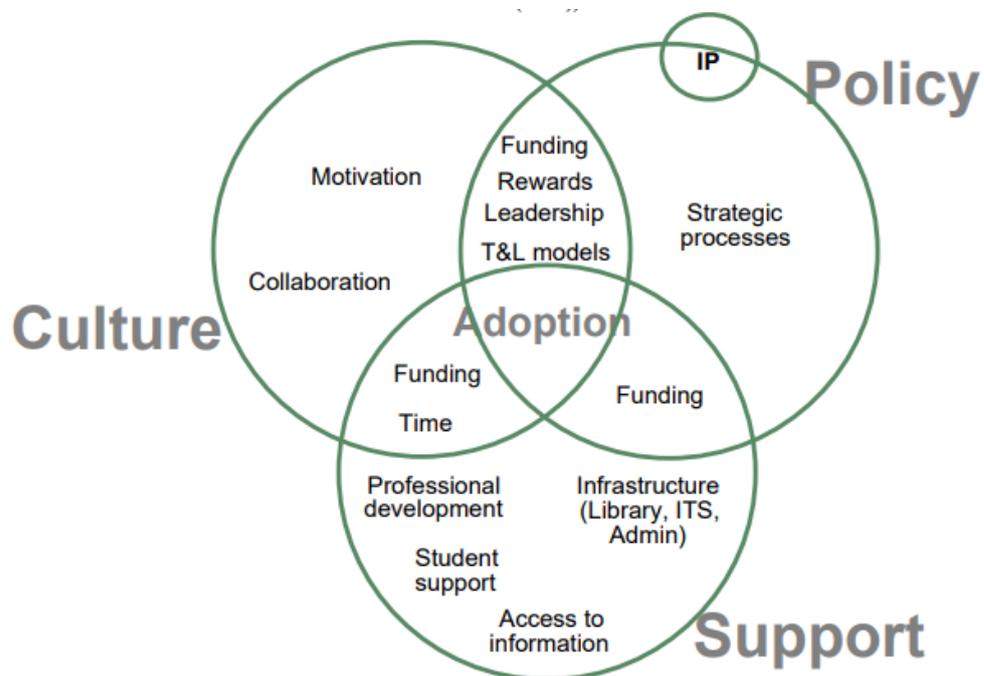
Figure 1:Three element technology-adoption model (McNaught et al., 2000)

The report by McNaught et al., (2000) found that the issues surrounding the adoption of eLearning at a university are complex, and no single factor will result in adoption. Instead, there is a range of factors, all of which must be addressed. The Key issues to be addressed include Policy; universities need to have a clearly articulated vision of the changes to teaching and learning that technology brings. This vision should have ownership and commitment from all levels of management. The Dean or Head of Department/ School

should lead and support the move into eLearning adoption. Aspects of institutional culture are important for adoption to become widespread, staff must be rewarded, whether tangibly or intangibly, for their efforts. Motivation is an essential driver to innovation. Infrastructure and support are also key drivers for widespread adoption. The institutions needs to have sufficient funding for eLearning, infrastructure, staff development and technical Support.

1.1.3. The eCampus of Maseno University

Maseno University is one of the 22 public universities in Kenya. It is located in Maseno Township along Kisumu-Busia road, 25 km from Kisumu City and approximately 400 km west of Nairobi the capital city of Kenya (Maseno eCampus, 2011). In September 2011, Maseno University launched eLearning degrees in the Kenyan education market with an aim to broaden access to education and provide the skills needed for Kenya to compete in the global economy (Maseno eCampus, 2011). The vision for an eCampus began with a senate resolution in September of 2004 to start Open, distance and electronic learning programs (ODeL). It was resolved that the University would initially embark on production of print-based teaching and learning materials. The University began a process of creating awareness of ODeL and instituting mechanisms for the acquisition of skills among the lecturers which was essential for producing appropriate print-based teaching and learning materials. These initiatives led to the establishment of the eLearning Center in 2007 (Maseno eCampus, 2011).

Early examples of contextualized eLearning best practices were demonstrated by School of Mathematics, Applied Statistics and Actuarial Science in collaboration with Reading University. The school offered an online statistics certificate course on the Reading University's Learning Management System (LMS). The Dean School of Business and Economics later gave sections of modules initially developed for print delivery to be uploaded on the LMS in order to demonstrate to the wider Maseno University community the salient features of the LMS. This informed the next steps taken by the University in the delivery of online programs. An institutional LMS was chosen and set up and lecturers trained on online content development and delivery. 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(Maseno University, 2013).

The eCampus of Maseno Uiversity was established so as to integrate eLearning as a mode of delivery for the University programmes. Through the eCampus, the University would be able

to offer the university programmes to learners who are unable to come for regular face-to-face classes due to various constraints. Due to the wider reach of Maseno University programmes through eLearning, the University also expected an increase in revenues. E-learning was also envisioned as a mode of delivery that would improve on the lecturer's productivity and job perfomenace especialy in teaching high enrolment courses to on-campus students therefore improving on the effciency and effectiveness in teaching high enrolment courses. The LMS was also expected toimprove 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. E-Learning system integrates instructional material (via audio, video and text), email, live chat sessions, online discussions, forums, quizzes, assignments and the World Wide Web (Ling & Moi, 2007). Another key objective of the eCampus was to improve on learner-lecturer interaction for student taking up Maseno University programmes and courses through eLearning. The improved interaction was expected to result in high student satisfaction. The team at the eCampus designed tools to monitor lecturer and learner participation within the online courses on the eLearning system. Analysed data collected from the lecturer and learner participation on the LMS was used to evaluate adoption rates of eLearning by the eCampus team.

1.2. Problem Statement

During the first year of the rollout of courses to learners at the eCampus of Maseno University, an evaluation of log in statistics of lecturers on the institution's LMS by the eCampus team revealed low or no log in statistics for the lecturers teaching online (Maseno Campus, 2011). Further evaluation of course activity reports also revealed minimal participation among the lecturers teaching the online courses. The evaluation of log in statistics was meant to inform the eCampus administration on the status of online teaching activity in courses offered online. The outcomes of the evaluation indicated a gap in the adoption of eLearning among lecturers involved in designing and delivering online courses. This study sought to evaluate the factors that contributed to poor adoption of eLearning among the Maseno University lecturers. The study evaluated the lecturers' personal factors of self-efficacy, perceived usefulness and perceived ease of use of eLearning and their impact on adoption of eLearning technology and pedagogy in Maseno University. The individual factors have been adopted from the Technology Adoption Model (TAM). TAM is a tool used to understand users' acceptance of a given technology. The institutional factors identified for

investigation are institutional policies, training, support and the ICT infrastructure set up for eLearning.

1.3. Research Objectives

The main objective of this study was to evaluate factors that explain lecturer adoption of eLearning at the eCampus of Maseno University. The specific objectives were to:

1. Evaluate the effect of lecturer personal factors in the adoption of eLearning at the eCampus of Maseno University
2. Examine the effect of institutional support factors on the adoption of eLearning
3. Identify challenges experienced by lecturers in the adoption of eLearning at the eCampus of Maseno University

1.4. Research Questions

2. What is the effect of lecturer personal factors in the adoption of eLearning at the eCampus of Maseno University?
3. How effective are institutional support factors in the adoption of eLearning at the eCampus of Maseno University?
4. What are the challenges identified by the Lecturers that impact on their adoption of eLearning at the eCampus of Maseno University?

1.5. Justification for the Study

Critical Success factors for eLearning projects has attracted significant research in Higher Education Institutions. However, more research on eLearning adoption in Kenyan public institutions of higher learning is needed so as to get sufficient academic literature to inform policy on eLearning in Kenyan Higher Education Institutions. A study on the challenges of implementing eLearning in Kenyan public institutions revealed that one of the challenges was lack of interest and commitment among the teaching staff to use eLearning (Tarus et al., 2015).There is a need for further research on the factors that contribute to the lack of interest and commitment among faculty in Kenyan Public Universities in the adoption of eLearning. The findings of this study will contribute to the academic literature critical success factors for eLearning adoption among faculty in HEI in Kenya and will be critical in formulating eLearning policy that is favourable for lecturer adoption of eLearning.

1.6. Scope of the Study

This evaluation on the factors explaining the lecturer adoption of eLearning at the eCampus of Maseno University was meant to assess the adoption of eLearning among the Maseno

University lecturers. The evaluation was done by gathering data from the lecturer on two key areas, their individual attributes with regards to the use of technology in teaching and support factors for eLearning adoption provided by the institution. This study sought to; evaluate the effect of lecturers' self-efficacy, perceived usefulness and perceived ease of use of eLearning technology and pedagogy on the adoption of eLearning, examine the effect of institutional support factors of ICT infrastructure, institutional policy on the adoption of eLearning and training and support accorded to lecturers in the adoption of eLearning pedagogy and technology. The study further sought to identify challenges experienced in the adoption of eLearning technology and pedagogy among lecturers.

To get a holistic view on the implementation of eLearning projects, all stakeholders in the eLearning environment need to be included in future research. These stakeholders include but are not limited to the students and personnel working at the eLearning department (Attwell, 2006).The number of stakeholders included into the eLearning project evaluation depends on the purpose of the evaluation. The purposes of the evaluation of an eLearning project are different, some evaluations are done to determine the impact on beneficiaries' performance, to compare eLearning projects, to support the improvement of projects in terms of socio-economic effects and impacts, on individuals and organizations while others are done to support the design phase of eLearning projects (Linzalone, Schiuma, Obradović, & Stanković, 2015).

CHAPTER TWO: LITERATURE REVIEW

2.1. Introduction

Whilst the benefits of eLearning are highly prophesied, the many implications of implementing an eLearning programme require careful consideration. Getting it right the first time will ensure long term success (O'Neill, Singh, & O'Donoghue, 2004).The development of models and tools for the evaluation of eLearning can help in improving the quality of eLearning and in informing and shaping future development in policy and practice(Attwell, 2006). Attwell (2006) notes that there is an increasing number of handbooks for eLearning which focus primarily on evaluation, the methods and tools differ widely but they all recognize the importance of evaluation. A number of people involved in evaluation propose that evaluation should be an integral part of any eLearning initiatives or development. The primary aim of the evaluation is to provide feedback to influence eLearning implementation and future development (Attwell, 2006).

2.2.valuation of eLearning Projects

E-Learning is a new dynamic in the education system in the 21st century that has resulted from the merging of various disciplines, such as computer science, communication technology, and pedagogy (Linzalone et al., 2015). There appears to be a growing realization of the importance of evaluating eLearning projects. Evaluation is needed to gain a better understanding of the problems regarding eLearning. Attwell (2006) notes that over several eLearning evaluation projects, five major clusters of variables have emerged; individual user variables, environmental variables, technology variables contextual variables and pedagogic variables. In a study on the critical success factors in online education, Volery and Lord (2000) identify instructor and student characteristics as some of the key success factors in online education.

Organization strategies and variables such as organizational mission, goals, culture and practices, as well as faculty and student perceptions are important variables in evaluating eLearning projects (Oblinger, 2012). Instructor characteristics, technology and University support are key drivers in the success of eLearning adoption (Selim, 2007). Linzalone, et.al (2015) argued that an eLearning project is characterized by a complex and hard to capture system of benefits due to the intangible nature of the results i.e. learning and knowledge. These intangible results can only be evaluated through the eLearning stakeholders. From an array of literature review ((Fogleman, Fishman, & Krajcik, 2006; Ling & Moi, 2007; O'Neill

et al., 2004; Selim, 2007; Volery & Lord, 2000; Webster & Hackley, 1997)), the key stakeholders are the lecturers and the learners. These stakeholders are critical in capturing the transformation process that turns eLearning project intervention into outcomes, thus making the evaluation findings robust and explanatory (Linzalone, et.al 2015).

2.3. Lecturer Adoption of eLearning

There are three instructor characteristics that influence learning outcomes in an online environment. These are: the instructor's attitude towards technology, their teaching style and the level of control of technology (Webster & Hackley, 1997). Students attending a class with an instructor who has a positive attitude towards technology and is positive towards online learning and promotes the technology are more likely to experience more positive learning outcomes. Most importantly, the instructor should exhibit interactive teaching styles, encourage interaction between the students and with the instructor (Webster & Hackley, 1997). Without significant interaction, students may easily become distracted and this will increase chances of attrition.

Self-efficacy relates to the instructor's control of the technology, it also relates to learning outcome (Webster & Hackley, 1997), it is therefore crucial that the instructor has a good control of the technology and is able to perform basic troubleshooting tasks e.g. adding a student at the last minute, modifying students' passwords and changing the course settings (Volery & Lord, 2000). The instructor should also experiment with the various tools available on the LMS to improve on the courses they are working on and improve on their instructional strategies.

Diffusion of an innovation is a social process and an important factor regarding the rate of adoption of an innovation is its compatibility with values, beliefs and past experiences of individuals in the social system(Rogers, 2003). In his Diffusion of Innovation theory (DOI), Rogers theorized that individual adoption rates of innovation are usually distributed along a bell-shaped curve and can be grouped under five categories: innovators, representing 2.5% of the population; early adopters, representing 13.5% of the population; early majority, representing 34% of the population; late majority, representing 34% of the population, and laggards, representing 2.5% of the population. Rogers identifies five attributes that make the innovations spread in its use, these attributes are; (1) relative advantage, this is the degree to which an innovation is perceived to be better by its users. This can be in terms of economic

advantage, social prestige, convenience, or satisfaction. There is no rule as to what constitutes "relative advantage", it depends on the particular user or group of users .(2) Compatibility with existing values and practices, this is the degree to which an innovation is perceived as being consistent with the values, past experiences, and needs of potential adopters.

The Technology Acceptance Model (TAM), introduced by Davis (1989) explains the reasons why people would adopt technology. TAM points that user perceptions of usefulness and ease of use determine attitudes toward using the system. According to the model, behavioral intentions to use in turn determine actual system use. In addition, a direct relationship between perceived usefulness and behavioral intentions to use is also proposed by TAM (Davis, 1989). TAM is presented in the figure below:
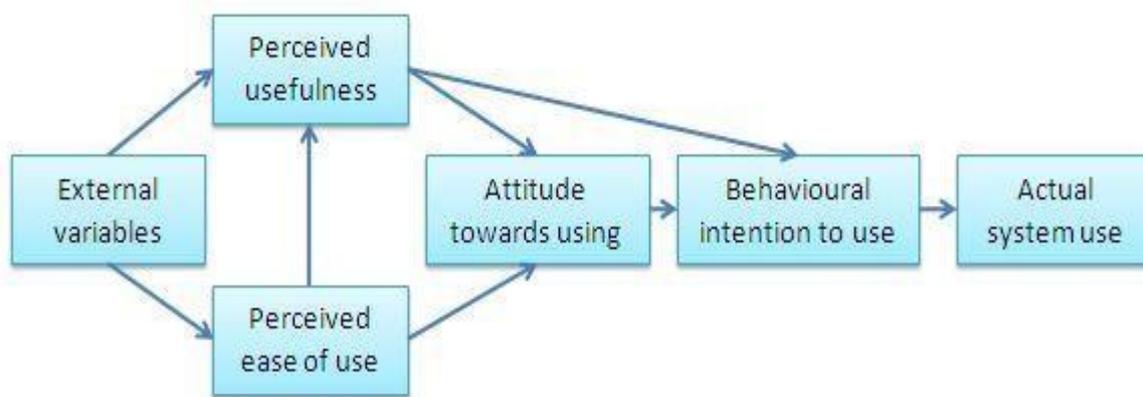
Figure 2: Technology Acceptance Model (Davis et al., 1989)

An instructor plays an important role in the effectiveness of online delivery of online courses. It is not the technology but the instructional implementation of the technology that determines its effects on learning (Volery & Lord, 2000). A user's intention to use technology depends on the perceived usefulness, perceived ease of use, self-efficacy, attitude and perceived convenience as a result of using technology. These aspects also relate to the user's performance. A technology that is perceived to be useful is one that impacts on the user's productivity. A lecturer would like to know how a given technology will enhance learner-learner and lecturer-learner interaction and eventually the attainment of learning outcomes.

In establishing the benefits of eLearning, it is important to evaluate the effect of lecturers' self-efficacy, perceived usefulness and perceived ease of use of eLearning technology and pedagogy on the adoption of eLearning. It is also recommended to examine the effect of

institutional support factors of ICT infrastructure and institutional policy on the adoption of eLearning. Training as well as support accorded to lecturers in the adoption of eLearning pedagogy and technology is also a critical success factor to lecturer adoption of eLearning technology and pedagogy. It is also recommended that the evaluation should identify challenges experienced in the adoption of eLearning technology and pedagogy among lecturers.

2.4. The Lecturer's Role in the Adoption of eLearning

The dynamic nature of the IT industry in conjunction with evolving eLearning technologies has created new educational issues for lecturers such as changing work patterns and in some cases the reluctant integration of technology (Singh, O'Donoghue, & Worton, 2005).The teaching technique used by lecturers in a class room environment differs greatly from the techniques used in an eLearning environment. Lecturers in networked learning environments modify their courses as they go along. This means that the longer a course is taught in a particular format, the more effective it is (Volery & Lord, 2000).

The lecturers' belief is a critical component of whether or not the lecturer will adopt eLearning. Studies indicate that the success of the eLearning project will hinge not only on the users' acceptance of the eLearning system, but also their attitude towards the use of technology , state of readiness in the use of technology, prior ICT experience, peer influence and level of self-efficacy in the use of computer and internet among others . Given the influential role of lecturer's in the adoption of educational technologies (Fishman & Davis, 2006), institutions intending to use ICT in the delivery of teaching should invest significantly in the support of lecturers and cultivate new roles for lecturers in the context of the change process (Clark, 1983).The role of lecturers continues to change from being an instructor to becoming a facilitator, coach, and creator of learning environments. This change requires new competencies of lecturers, in assuming their new roles, lecturers are expected to upgrade their knowledge and acquire new skills, including new pedagogical skills and ICT competencies so as to fully integrate educational technology into the curriculum (Zepp, 2005).

In education, it is often taken for granted that technologies can 'enhance learning' and the term 'Technology Enhanced Learning' (TEL) is increasingly being used in the United

Kingdom, Europe and other parts of the world (Kirkwood & Price, 2013). In most cases eLearning is associated with equipment and infrastructure yet a study on the eLearning maturity in New Zealand tertiary institutions revealed a number of weaknesses relating to teaching and learning aspects of eLearning(Marshall, 2005). For example, learning objectives were used poorly in eLearning papers in most institutions and even when stated, learning objectives were often dominated by recall and comprehension rather than by analysis, synthesis and evaluation (Elgort, 2005; Marshall, 2005). In the area of eLearning development, the lack of a clear relationship between eLearning technologies deployed by universities and desired educational outcomes was also identified as a major problem (Marshall, 2005).

The lecturer plays an important role in re-engineering teaching and learning activities to take full and optimal advantage of the new technology (Zemsky & Massy, 2004). It appears that by making it almost too trivial to create an online course by transferring existing teaching materials onto the LMS allow lecturers to adopt a surface approach to eLearning, lecturers need to adopt eLearning by customizing and innovating instructional strategies using the wide range of features on the LMS. Ease of use itself, however, is not the cause of surface approaches to eLearning; it simply makes this type of adoption possible (Elgort, 2005).The reason for the way eLearning is adopted in tertiary education lies most likely in the adopters' approaches to teaching, in general, which are often the result of their conceptions about teaching and learning (Kember, 1997).The technology is a vehicle for delivery but learners benefit more from the content and instructional strategy in the learning materials than by the type of technology used to deliver instruction (Clark, 1983). Individual lecturers, schools, colleges, and/or faculties often determine the content and scope of what they will teach. They then choose methods or strategies, instructional materials, and the eLearning technologies they believe will best help the learners to gain new knowledge, skills, and attitudes. These decisions are embedded in the instructors' philosophical views about both education and technology (Kanuka, 2008).

In his study on computers in the classroom, Cuban (2001) offers a compelling look at how computers are being utilized in the educational environment and engages readers to ponder how teaching and learning have changed since many institutions have jumped on the technological bandwagon(Cuban, 2001). Cuban (2001) identifies the following levels of integration; (1) Adoption: Lecturers tend to take more traditional approaches to instruction but do provide some explanation on how to use computers. (2) Adaptation; Traditional

approaches to instruction prevail but some class time is allowed for students to use computers for homework and daily class work. (3) Appropriation; Lecturers integrate technology regularly into the curriculum. (4) Invention; Lecturers find new ways of connecting students and use project based and interdisciplinary approaches to instruction (Lomicka, 2003). Very few lecturers reached the innovation level as most of them remained at the adoption level (Cuban, 2001). Innovative instructional strategies should meet the needs of the learners and the intended learning outcomes whilst taking advantage of eLearning innovations rather than sustain the existing patterns of teaching with a surface approach of eLearning adoption. This will guarantee an effective and efficient eLearning adoption in higher education institutions.

2.4 Institutional Support Factors that influence Lecturer adoption of eLearning

Institutional support is at the center of influencing lecturer support in the adoption of eLearning in teaching. Institutional variables include the existing policies on the use of technology in teaching, the leadership i.e. the support of the administration and training and support given to lecturers. The Innovation-Decision Process Theory attempts to explain the progress over time in which potential adopters of technology go through in the diffusion process. In the first phase, they learn about the innovation by acquiring knowledge about the technology then they must be persuaded about the value of the technology and then they make a decision whether or not to adopt it (Rogers, 2003).

A study conducted by (Lion & Stark, 2010) reported that up to 65% of the lecturers preferred traditional lecture mode over technology-aided modes to achieve learning outcomes. The study identified perceived incompatibility with online pedagogies, compensation issues, inadequate training, time required to create online courses, and lack of administrative support as the key factors fueling lecturers' resistance against eLearning (Lion & Stark, 2010). In their study on measuring the acceptance and adoption of eLearning by academic staff, (Al-alak & Alnawas, 2011), argued that the success of eLearning methods in higher education can be measured according to the effectiveness of delivery and training given to the staff otherwise staff may be regarded as a major challenge in the adoption of eLearning initiatives. It is acknowledged that some teaching staff working in higher education are reluctant in accepting aspects of technology in their teaching and learning (Al-alak & Alnawas, 2011; Singh et al., 2005), this reluctance may apply more to lecturers who join the profession previous years compared to those who join the profession more recently who have probably had access to a computer and internet in this information age.

As an increasing number of institutions adopt eLearning, their successes depend not only on the availability of technology but also on the extent to which faculty and students are supported as they explore and develop innovative ways to integrate technology into the learning experience (Arabasz, Pirani, & Fawcett, 2003). For institutions adopting eLearning, some of the important issues that arise include: institutions must provide an adequate and reliable technical infrastructure to support eLearning activities, instructors and students must possess the technical skills to use eLearning tools and instructors must redesign their courses to incorporate eLearning effectively into their pedagogy (Arabasz et al., 2003). Albirini (2006) reported that inadequacy of financial resource to initiate and maintain ICT systems was a key factor influencing the adoption of eLearning. The study found a significant relationship between the amount allocated for ICT development and the number of computers accessible to lecturers in each department. Gülbahar (2007) also reported that inadequate financial provisions played a crucial role in influencing the integration of eLearning projects in Singaporean Universities.

Deficiencies in technology proficiency are leading reasons for lecturers to shrug adopting eLearning. Inadequately trained lecturers using eLearning in educational environments can become an obstacle in a finely balanced learning process and can lead to problems in application use and the perception of students (Volery & Lord, 2000). Institutions should invest in creating awareness, persuading the lecturers through incentives and favorable policies for lecturers willing to adopt the use of technology and integrate their views in the implementation phase of the adoption process. This will in turn influence the decision by lecturers to adopt the use of technology in teaching. In contrast to traditional teaching skills, eLearning requires lecturers to be committed to a constant and changing learning curve, which may involve a mixture of formal training courses in conjunction with conferences and other less formal techniques if they are to acquire and develop the skills needed to be effective eLearning tutors (Shank, 2002).

Technology factors influence the diffusion processes of an innovation and are significant factors impacting adoption of an innovation. Technology factors include the availability of the ICT infrastructure, the trial-ability of the given technology, the relative advantage that the technology provides to its users and compatibility with existing norms. The availability of technical support is a major motivation for the lecturers involved in the adoption of

technology. In Ireland, the National Council for Technology in Education, NCTE 2005 census on ICT infrastructure as cited in ICT strategy group report, 2008-2013 found that about 85.3% of schools reported technical support and maintenance as a 'high' or 'very high' priority and claimed that it should be an important element of the school ICT environment. Institutions should plan for proper technical support made available to maintain hardware and infrastructure (Buabeng-Andoh, 2012). If there is no technical support for lecturers, they become frustrated resulting in their unwillingness to use ICT. Agboola (2006) assessed the awareness and perceptions of academic staff in using eLearning tools for instructional delivery at the International Islamic University in Malaysia. The study found that training lecturers was the most important factor. In view of this, training and confidence building regarding the application of ICT tools are critical for enhancing lecturers' preparedness for eLearning (Agboola, 2006).

E-Learning is in its early days and many teaching staff are still developing all their own teaching materials. An educational institution's teaching materials are an important resource, they are a form of 'intellectual capital' (Marshall, 2008). Marshall further notes that as tools such as local and national digital repositories come on-line and are developed, more and more of these valuable resources are going to be stored and shared digitally. The institution's Learning Management System provides a repository for learning materials. The lecturers upload learning objects on the LMS and interact with learners on the LMS. Intellectual property rights is emerging as an important component in the development of eLearning materials. With Changing technology and the growth of eLearning has also grown the ease of copying and access to a vast array of online materials. This growth has changed how copyright affects academic work (Marshall, 2008).

1.5. Conceptual Framework

The conceptual framework is adopted from the TAM model and the Theory of Reasoned Action (TRA). According to the TRA theory, behavioral intention is the intensity of a person's intention to perform the behavior in question and is a function of both the person's attitude and subjective norm. Attitude is termed as a negative or positive feeling associated with performing the behavior while subjective norm is the person's perceptions about what key individuals think if the person should or should not perform the given behavior(Ajzen & Fishbein, 1972). A user's intention to use technology depends on the perceived usefulness, perceived ease of use, self-efficacy, and self-efficacy refers to one's belief in his or her ability

to execute a particular task, attitude and perceived convenience as a result of using technology. A technology that is perceived to be useful is one that impacts on the user's productivity. Supportive factors are institutional support factors that provide a conducive environment for eLearning adoption.

The study identified the following variables: the lecturer personal factors of perceived usefulness, perceived ease of use and self-efficacy in using eLearning and institutional factors of policies on eLearning, training and support and the ICT infrastructure. The Lecturer personal factors impact on their attitude towards eLearning which can either be positive or negative. The institutional factors determine if the environment is supportive for adopting eLearning, hence they are facilitating conditions for eLearning adoption. The behavioral intention for use is the decision made by the lecturer on whether they will adopt eLearning or not. The intervening variables of lecturer attitude towards eLearning and facilitating conditions for eLearning adoption impact on the decision made by the lecturer. The overall adoption of eLearning technology and pedagogy is an outcome of the decision made by the lecturer considering the lecturer's personal factors and the Institutional factors.
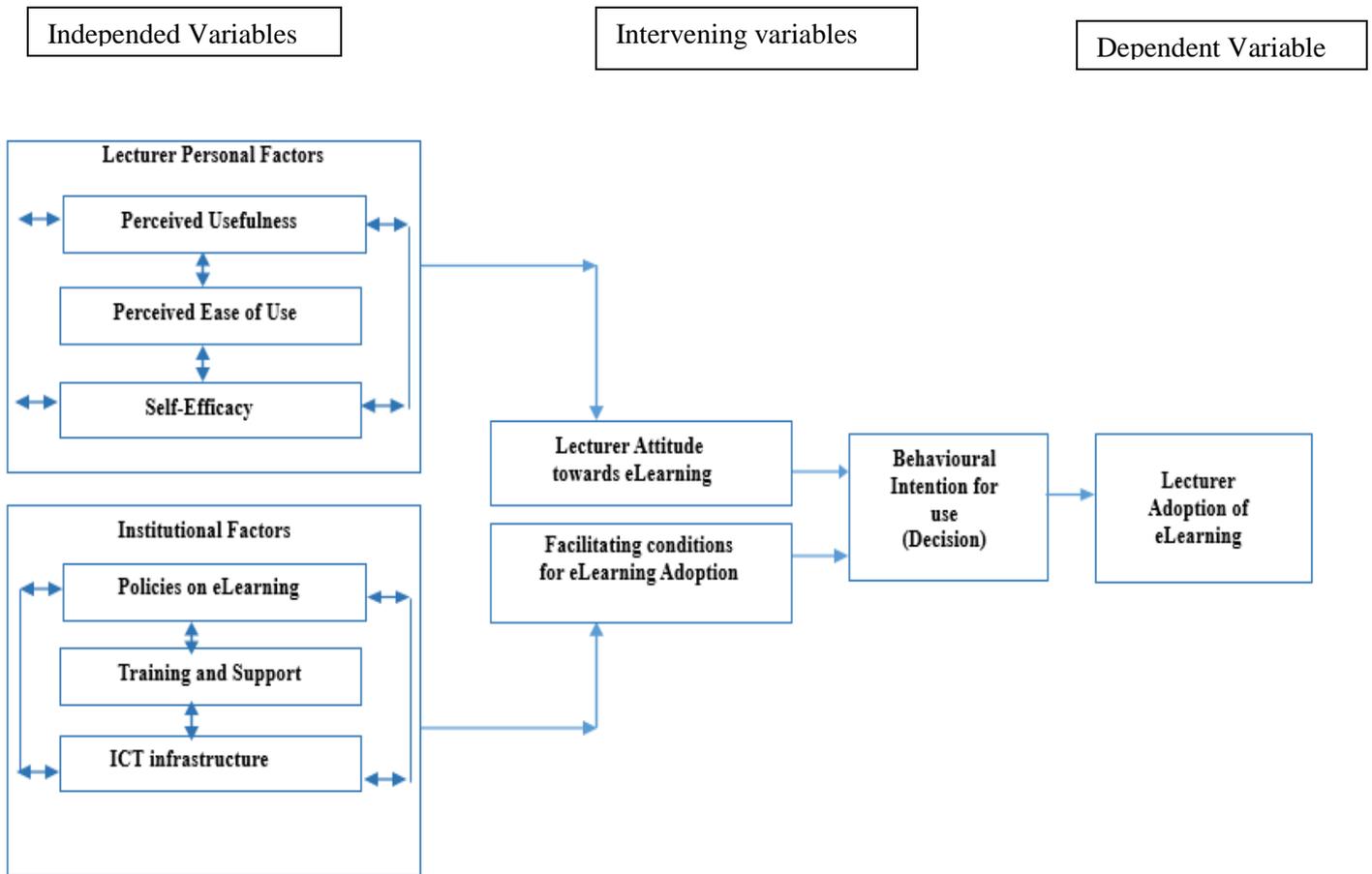
Figure 3: Conceptual Framework (Source: Adopted and Modified from TRA theory and TAM model)

2.5. Summary of Gaps

According to Rogers (2013), adopters of innovation want to participate actively in customizing the innovation to fit into their unique situation, this process is called 're-invention'. The lack of lecturer participation in formulating policies and strategies for eLearning in higher education institutions presents a gap in the adoption of eLearning. Despite the efforts by the government to digitize education, the initiatives had been taking place without a clear policy on ICT in education (Ogange, 2011). The lack of policy to guide the implementation of eLearning also creates a gap in adoption of eLearning. Further to this, an evaluation of ICT integration in the teaching subject indicate that lecturers lack the capacity to integrate ICT into their teaching subjects (Al-alak & Alnawas, 2011; Arabasz et al., 2003).

The inability to innovatively integrate ICT into their subject matter will potentially create a gap in home grown digital educational content whose demand is on the increase (Arabasz et al., 2003). This will also present a challenge in the adoption of eLearning by lecturers due to self-efficacy issue. The Lecturer personal factors of perceived usefulness, ease of

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use and self-efficacy in using eLearning technology and pedagogy impact on their attitude towards adopting eLearning (Al-alak & Alnawas, 2011; Ally, 2008; Lion & Stark, 2010; Volery & Lord, 2000) which can either be positive or negative. Institutions should invest in creating awareness, persuading the lecturers through incentives and favorable eLearning policies for lecturers to be willing to adopt eLearning. The institutional factors are the facilitating conditions that make adoption behavior less difficult by removing any obstacles to adoption and sustained usage. By evaluating the adoption of eLearning among lecturers at the eCampus, the eCampus of Maseno University will be able to develop strategies that will improve the adoption of eLearning. The university will further reengineer eLearning policies, lecturer support structures and investment into the relevant ICT infrastructure so as to ensure improved adoption of eLearning among the lecturers.

CHAPTER THREE: STUDY METHODOLOGY

3.1.Overview

In this chapter, the research design for this study is described. The population and instruments of data collection are also outlined. The administration of the research instruments and methods of data analysis are also provided.

3.2.Research Design

The study sought to evaluate the lecturer adoption of eLearning at the eCampus of Maseno University. The study was a descriptive research hence utilized case study research design. Case study research is a "systematic inquiry into an event or a set of related events which aims to describe and explain the phenomenon of interest (Bromley, 2007). In general, case studies are the preferred strategy when "how" or "why" questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context (Yin, 2003). A mixed method approach was used in the data collection. The mixed method approach allows for qualitative and quantitative data to be collected as evidence for or against the research questions under study (Creswell & Plano Clark, 2011). The quantitative data provided the numeric description of trends, attitudes, or opinions of the population under study while the qualitative data provided insight into the trends exhibited in the quantitative data.

3.3.Study Area

Maseno University's Main campus is located in Maseno Township along Kisumu-Busia road, 25 km from Kisumu and approximately 400 km west of Nairobi the capital city of Kenya. Maseno University has 4 other campuses namely; Kisumu Campus located within Kisumu City, Homa Bay Campus located within Homa bay County, Siriba Campus and the eCampus which is a virtual campus, whose physical offices are located at the 10th floor of the Kisumu Campus building. This study was done at the eCampus.

3.4.Study Population

The study population consisted of lecturers who have developed online courses at the eCampus of Maseno University. The lecturers were drawn from six schools that have a programme or have their courses constitute a programme offered by the eCampus. The schools selected were school of Business and Economics, Mathematics, Applied Statistics

and Actuarial Science, Planning and Architecture, Arts and Social Sciences, Education and Public Health and Community Development.

3.5.Sampling Procedure

3.5.1. Sample Selection for the Questionnaire

The sample of lecturers for whom the questionnaire was administered was selected through stratified random sampling. In stratified sampling the population is partitioned into groups, called strata, and sampling is performed separately within each stratum(Deming, 1985).Programmes offered at the eCampus are developed by Schools. The School formed the strata and lecturers were sampled randomly from each school proportionate to the population of lecturers from each school at the eCampus.

3.5.2. Sample Size

The sample size of lecturers who were issued with a questionnaire were 55 out of a population of 170 lecturers who were involved in development and teaching of eLearning courses at the eCampus. Between September 2011 to December 2012 when the eCampus team did the evaluation, the lectures had developed a total of 175 courses (Maseno eCampus, 2011). Some of the lecturers who developed the eLearning courses at the eCampus had since left the institution or were part time lecturers, part time lectures are lectures from other institutions who teach some of the courses at the university. Given that some of the lectures who had developed courses for the eCampus were part time lecturers or were no longer working for the university, the study identified a representative sample size of 55 lecturers using the sample size formula recommended by (Calmorin & Calmorin, 2007).

$$S_{S=} \frac{NV + [(S_e)^2(1 - p)]}{NS_e + [V^2p(1 - p)]}$$

1. S_o-Sample Size
2. N- Total Population
3. V- Standard Value of 2.58 which is one percent level probability with 0.99 reliability
4. Se- Sampling Error of 0.01

5. p- Largest possible Proportion of 0.05

N= 170

Sample = 55 lecturers

3.5.3. Sample Distribution

Table 1: Sample distribution across the schools

Ss=55 Schools/Faculties	Sampled Lecturers
School of Business and Economics	16
School of Mathematics, Applied Statistics and Actuarial Science	11
School of Planning and Architecture	10
School of Arts and Social Sciences	3
School of Education	3
School of Public Health and Community Development	12
Total	55

3.6. Data Collection

3.6.1. Data Collection Process

Data collection process involved administering a questionnaire (Appendix A) to sampled lecturers. There were two versions of the questionnaire, a web based questionnaire which was sent out to the sampled lecturers' emails to fill online and submit. A hard copy version of the questionnaire was provided to lecturers who chose to fill in a hard copy. In this study, the response rate was at 87.27%, 47 respondents chose the online questionnaire option while one respondent filled a hardcopy questionnaire. Non-response was minimal since the online questionnaire had validation checks that prevented the respondent from submitting the questionnaire without fully answering all the questions.

3.6.2. Questionnaire Design

The study used a questionnaire as the primary data collection instrument. The design of the questionnaire was adopted from previous research by Davis (1989), Venkatesh, Morris, Davis & Davis (2003) and Alexander & McKenzie (1998).The questionnaire had three main sections corresponding to the independent variables of the study i.e. the lecturer factors, the institutional factors and the technological factors. The questions on the lecturer factors on perceived ease of use and perceived usefulness of technology borrowed from the work done

by Davis (1989) who developed a measurement scale for perceived usefulness and perceived ease of use. These scales prompt an individual to respond to various questions that pertain to a given context. Responses obtained can then be analyzed and used as an indication of the person's internal belief for the context considered(Chuttur, 2009).

The questions on perceived usefulness of eLearning in teaching focused on the value of eLearning in improving learner participation and active involvement during learning. The questions also focused on the use of the eLearning system in providing avenues for disseminating learning materials, providing dynamic learning content to learners and providing avenues for dynamic feedback and score reporting. The lecturers were further asked if the adoption of eLearning has enhanced their job performance. On the questions on perceived ease of use, the questions were meant to ascertain the level of ease in using the institutional eLearning system and adopting it for the courses they teach. The questions asked included; the amount of time it takes to learn using the eLearning system, whether the eLearning system is complicated, the ease in navigation due to the systems layout, the amount of effort required to be proficient in using the system, the sufficiency of the tools on the eLearning system in adopting it for teaching their courses and the ease in making modifications on the eLearning system.

The questions on self- efficacy were adapted from the work done by(Venkatesh et al., 2003). The questions on self-efficacy focused on the apprehensiveness of the user in using the eLearning systems and difficulty in understanding technical aspects of the eLearning system. The questions also focused on whether the user finds it difficult to learn how to adopt the system for the courses they teach and whether they were getting better at using the eLearning system. They were finally asked if they were getting innovative ideas in adopting the eLearning system with continued use.

The questions on the institutional factors were adopted from the work done by (Alexander & McKenzie, 1998)and Anderson (2008) on inhibiting and facilitating conditions for eLearning. They identified the following institutional issues that are pertinent to the success of eLearning adoption; eLearning embedded in the department's normal teaching, funding was available for implementation and maintenance of eLearning, Head of Department/School and the Dean support for eLearning, staff support through access to technical support and educational software development expertise, students' access to appropriate hardware,

software and support, copyright and intellectual property issues resolved and promotion and tenure policies recognize teaching developments that use eLearning systems Alexander & McKenzie (1998). The respondents were coded R1-R48 where each represented the respondents in the order in which they filled the questionnaire. These codes were used in reporting the respondent's responses on the open ended questions of the questionnaire.

3.7. Data Analysis

3.7.1. Quantitative Data Analysis

The quantitative data was collected from the closed ended questions in the questionnaires. Summary statistics were done on the demographic information (Section A of the questionnaire) to provide an overview of the demographic characteristics of the lecturers who responded to the questionnaire. Summary statistics were generated to evaluate lecturer responses on the lecturer perceptions of perceived usefulness of eLearning, perceived ease of use and their self-efficacy with regard to eLearning. The results were presented in form of graphs and tables.

3.7.2. Qualitative Data Analysis

The Qualitative data was collected from the open ended questions in the questionnaire. The results were organized into major themes identified and used in the discussions. The major themes identified were: discussions on funding for eLearning, copyrights and intellectual property rights, promotional and tenure policies, technology and support factors for eLearning, ICT infrastructure for eLearning and challenges in the adoption of eLearning. The responses from the identified themes were used to explain the observed patterns in the tables and graphs generated from the quantitative data.

CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1. Overview

The purpose of this study was to evaluate the lecturers' of adoption of eLearning at the eCampus of Maseno University. The study evaluated the lecturer individual factors of self-efficacy, perceived usefulness and perceived ease of use in relation to eLearning. These factors were adopted from the Technology Adoption Model (TAM) which is used to understand the users' acceptance of technology. The study further evaluated the institutional support factors of policy on eLearning, ICT infrastructure and the support accorded to lecturers involved in eLearning. The institutional factors were adopted from the Conceptual framework on inhibiting and facilitating factors for eLearning by (Anderson, 2008). From the evaluation of lecturer and institutional factors in the adoption of eLearning, the study identified the challenges inhibiting adoption of eLearning among lecturers in Maseno University. This chapter aims at establishing the answers to the research questions by presenting results from the research. The discussions that follow seek answers to the research questions based on the analyses of the data.

4.2. Demographic Profile of the Lecturers

The lecturers sampled were form seven schools that have full programmes supporting units which are part of the programmes offered at the eCampus. School of Business and Economics Lecturers constituted 33.3% of respondents, School of Arts and Social Science, 8.3%; School of Mathematics, Applied Statistics and Actuarial Science,10.4%; School of Education,18.8%; School of Planning and Architecture,6.3%; School of Public Health and Community Development, 14.6% and School of Computing and Informatics were 8.3% of the total respondents. A majority of the respondents were male, 72.9% while female respondents were 27.1% of the total respondents. With regard to the age of the respondents, 54.2% of them were between 35-44 years old while only 8.3% were above 55 years old. Respondents between 25- 34 years were 10% while those between 45 and 54 years were 16.7%. In relation to the teaching experience at the university, 43.8% of the respondent had less than 5 years teaching experience at the university while 33.3% had between 6 to 10 years' experience teaching at the university. About 22% of the respondents had between 11 to 25 years in teaching experience at the university.

With regard to the respondents' professional rank, 2.1% of the respondents were full professors while another 2.1% were associate professors. A majority of the respondents were lecturers at 35.4%, 18.8% were assistant lecturers while 6.3% were senior Lecturers. Tutorial fellows and instructors constituted 35.5% of the respondents.

Table 2: Lecturers' Demographic Data

Demographic profile of the Lecturers		Frequency	Percent
Gender	Male	35	72.9%
	Female	13	27.1%
	Total	**48**	**100.0**
Age Range	25-34	10	20.8%
	35-44	26	54.2%
	45-54	8	16.7%
	55-64	4	8.3%
	Total	**48**	**100.0%**
Professional Rank	Professor		2.1%
	Associate Professor	1	2.1%
	Senior Lecturer	3	6.3%
	Lecturer	17	35.4%
	Assistant Lecturer	9	18.8%
	Tutorial Fellow	8	16.7%
	Instructor	9	18.8%
	Total	**48**	**100.0%**
University Teaching Experience in Years	<5	21	43.8%
	6-10	16	33.3%
	11-15	4	8.3%
	16-20	3	6.3%
	21-25	4	8.3%
	Total	**48**	**100.0%**
School/ Faculty	School of Business and Economics	16	33.3%
	School of Arts and Social Sciences	4	8.3%
	School of Mathematics, Applied Statistics and Actuarial	5	10.4%
	Science		
	School of Education	9	18.8%
	School of Planning and Architecture	3	6.3%

	School of Public Health and Community Development	7	14.6%
	School of Computing and Informatics	4	8.3%
	Total	**48**	**100.0%**

4.3.Lecturers' Personal Attributes on eLearning Adoption

The lecturers were asked questions to rate their confidence levels with regard to using the institutional eLearning system. The questions were based on the amount of effort required to use the eLearning system and their technical abilities in teaching online on the institutional Virtual Learning Environment also known as the eLearning portal.

4.3.1.   Lecturers' Self-Efficacy

In the eLearning environment, lecturers have to interact and communicate with their students through technology. Lecturers who are anxious or uncomfortable with using computers would be more reluctant to adopt an eLearning system (Fuller, Vician, & Brown, 2006). In the context of Maseno University's eCampus, lecturer-learner interaction takes place through the institutional eLearning portal. The lecturers were asked to rate their confidence levels in using the institutional eLearning system. Two questions were put forth to seek the lecturers' views on their technical abilities in teaching using the eLearning system and the level of difficulty in learning to use the system.

Table 3: Lecturer Self-efficacy in using the eLearning system

Lecturer self-efficacy in using the eLearning system		Frequency	Percentage
Is the eLearning system difficult to learn?	Yes	1	2.1%
	No	47	97.9%
	Total	**48**	**100%**
How would you rate your technical abilities in teaching with the institution's eLearning System	Excellent	9	18.8%
	Good	31	64.6%
	Average	7	14.6%
	Fair	1	2.1%
	Poor	0	0%
	Total	**48**	**100%**

The Lecturers find the eLearning system easy to learn with 97.9% of the lecturers affirming this while only 2.1% of the lecturers find the eLearning system difficult to learn. As indicated in Table 3, 18.8% of the lecturers rate their technical abilities in working with the

eLearning system as excellent while 64.6% rate their abilities as good. Only 14.6% of the lecturers found their technical abilities to be average while 2.1% rated their technical abilities as fair. This is an indication that the lecturers are confident in their skills in working with the institutional eLearning system to deliver online courses. From the responses, the lecturers find the eLearning system simple to learn and therefore can be adopted easily in teaching their courses online.

4.3.2. Lecturer Perceptions on the usefulness of eLearning

The lecturers were presented with a five item list that highlight the usefulness of eLearning in the delivery of learning. The items were meant to capture the lecturers' perceptions on the usefulness of eLearning in improved learner participation, increased avenues for disseminating learning materials to learners, eLearning as a means of providing dynamic learning content to learners and the impact of eLearning on the lecturers' productivity.

Table 4: Perceived Usefulness of eLearning on Learner Participation

Perceived Usefulness of eLearning on Learner Participation		Frequency	Percentage
eLearning improves learner participation and active involvement during learning	Strongly Agree	15	31.3%
	Agree	25	52.1%
	Nether Agree nor Disagree	6	12.5%
	Disagree	2	4.2%
	Total	**48**	**100%**

The respondents were asked to indicate their perceptions on the value of eLearning in improving learner participation and active involvement in an online class. Table 4 findings indicate that the lecturers find eLearning to be useful in improving learner participation during the teaching and learning process with 31.3% of the respondents in strong agreement while 52.1% in agreement. Some of the respondents nether agree nor disagree on the value of eLearning in learner participation and involvement (12.5%) and another 4.2% disagree. From the data, it is evident that the lecturers have a general positive perception on the usefulness of eLearning in improving learner participation and active involvement during the Teaching and learning process. Active learner participation during the learning process is a significant outcome. In the online interaction learning theory proposed by Benbunan-Fich, Hiltz, & Harasim (2005),the learning process depends on the

amount and type of interaction or activity, the individual and collaborative learning and the perceived media sufficiency. According to (Moore & McKenna, 2001) interaction model three main types of interaction may occur in online course; Learner-content, learner-instructor, and learner-learner. To achieve the interaction, the eLearning system has several tools that support interaction and collaboration among the participants in an online course (Ling & Moi, 2007).

Table 5: Perceived Usefulness of eLearning on Teaching

Perceived Usefulness of eLearning on Teaching		Frequency	Percent
eLearning improves on teaching by providing avenues for providing dynamic learning content to learners	Strongly Agree	23	47.9%
	Agree	22	45.8%
	Nether Agree nor Disagree	3	6.3%
	Disagree	0	0%
	Total	**48**	**100%**
eLearning improves on teaching by providing avenues for disseminating learning materials to learners	Strongly Agree	24	50%
	Agree	20	41.7%
	Nether Agree nor Disagree	2	4.2%
	Disagree	2	4.2%
	Total	**48**	**100%**

The findings in table 5 indicate that the lecturers are of the opinion that eLearning provides diverse avenues of disseminating learning materials to learners, 50% of the respondents were in strong agreement while 41.7% of the respondents agree. Some of the lecturers neither agree nor disagree (4.2%) while another 4.2% disagree. Through eLearning, synchronous and asynchronous delivery is possible (Olojo, Adewumi, & Ajisola, 2012). Synchronous delivery refers to real-time, instructor-led eLearning, where all learners receive information simultaneously and communicate directly with other learners. Examples include teleconferencing (audio, video, or both), Internet chat forums, and instant messaging. While in asynchronous delivery, the transmission and receipt of information do not occur simultaneously (Olojo et al., 2012).

On the value of eLearning in providing avenues for providing dynamic learning content, the lecturers were of the opinion that the eLearning system supports dynamic approaches of providing learning content to learners. 47.9% of the respondents strongly agree while another 45.8% agree. Only 6.3% nether agree nor disagree on the usefulness of

eLearning in disseminating dynamic content to learners. From the data, it was clear that the lecturers are of the opinion that the eLearning system is a useful tool in improving teaching by providing avenues for disseminating learning materials to learners. The students can access the eLearning system from their PDAs therefore accessing the content anywhere and anytime as long as they have access to the internet (Olojo et al., 2012).The lecturers also agree that through eLearning, they can also improve on their teaching by providing a way of presenting dynamic learning content to learners. As noted by Ling & Moi (2007) through the eLearning system the lecturers are able to present content inform of audio, video and text. The lecturer is also able to hold online discussions as well as a variety assessment approaches including peer marked assessments, computer marked assessments and teacher marked assessments. Olojo et al., (2012) noted that through eLearning, assembling and disseminating instructional content is more cost-efficient.

Table 5: Perceived Usefulness of eLearning on providing feedback

Perceived Usefulness of eLearning on providing feedback		Frequency	Percent
eLearning improves on teaching by providing avenues for dynamic feedback and score reporting to learners	Strongly Agree	16	33.3%
	Agree	27	56.3%
	Nether Agree nor Disagree	4	8.3%
	Disagree	1	2.1%
	Total	**48**	**100%**

Feedback is an essential component when teaching an online course. The respondents were asked whether eLearning has improved on feedback provided to learners by providing diverse avenues for providing dynamic feedback to earners. The trend of the responses point to a positive perception among the lecturers, 33.3% of the respondents indicated that they strongly agree while 56.3% of them indicated that they agree to the value of eLearning in improved avenues for giving feedback to learners. Only 8.3% neither agree nor disagree and another 2.1% disagreed.

Table 6: Perceived Usefulness of eLearning on lecturer productivity

Perceived Usefulness of eLearning on lecturer productivity		Frequency	Percent
eLearning enhances my productivity by improving on my job performance i.e. I accomplish more work in minimal time	Strongly Agree	17	35.4%
	Agree	18	37.5%
	Nether Agree nor Disagree	9	18.8%
	Disagree	4	8.3%
	Total	**48**	**100%**

To ascertain the impact of eLearning on their productivity and job performance, the lecturers were asked to rate the value of eLearning on their productivity and job accomplishment. According to the data in Table 6, 35.4% of the lecturers strongly agree with this fact with about 37.5% in agreement. Some of them neither agree nor disagree (18.8%) while 8.3% disagree. According to Olojo et al.(2012), eLearning enables instructors to handle more students while maintaining learning outcome quality that is equivalent to that of comparable face-to-face instruction. At the eCampus, the lecturers are able to teach high enrollment courses so as to improve on their productivity by enabling them to manage the students more effectively and efficiently. E-learning redefines the role of a lecturer, Goodyear, Salmon, Spector, Steeples, & Tickner (2001) identified eight different roles for online teachers. These roles described the on-line teacher as the (a) process facilitator, (b) adviser-counselor, (c) assessor, (d) researcher, (e) content facilitator, (f) technologist, (g) designer, and (h) manager-administrator. The roles of designer and process facilitator are of particular concern when designing and implementing an online course meant to engage students in student-student interactions.

Table 7: Overall perceived usefulness of eLearning

Overall perceived usefulness of eLearning		Frequency	Percent
Overall I find eLearning useful	Strongly Agree	23	47.9%
	Agree	23	47.9%
	Neither Agree nor Disagree	1	2.1%
	Disagree	1	2.1%
	Total	**48**	**100%**

According to the data in Table 7, the lecturers generally found eLearning to be useful with (47.9% Strongly Agree and another 47.9% Agree). The lecturers were largely in agreement

on the importance of eLearning in improving the learner participation and active involvement during learning. The lecturers were also in agreement that eLearning provides alternative avenues for disseminating learning resources and is an avenue for providing dynamic learning content, feedback and score reporting to learners. The lecturers found eLearning as a mode of delivery that enhances their productivity with 72.9% of the lecturers in agreement to this fact. A small portion of the lecturers (18.8%) neither agree nor disagree on the value of eLearning in improving their productivity. The perceived usefulness of an eLearning system had a significant effect on the behavioral intention to use the system. According to Pituch & Lee (2006) having a distance learning system within the educational institution setting would not automatically lead to its use. In his innovation-decision-process model. Rogers (2003) explains the journey of an adopter of a given innovation. Rogers defined this process as an activity in which an individual is motivated to reduce uncertainty about the advantages and disadvantages of an innovation. In the eLearning system adoption by lecturers, they must be convinced of the value eLearning adds in the effective and efficient delivery of the learning outcomes to the learners. Zhao & Frank (2003) concluded that educators who had a positive perception toward the perceived value of using computers were more likely to embark the concept of distance learning.

4.3.3. Lecturer perceived ease of use of the institutional eLearning system

The study further sort to find out from the lecturers the level of ease in learning to use the eLearning system and adopting it to teach their courses. The questions were meant to gather lecturers' perceptions on the amount of time it takes to learn the eLearning system, the complexity of the eLearning system, the amount of effort needed to be proficient in using the eLearning system, the level of ease in integrating it to teach the lecturers' courses and the availability of sufficient tools to cater for the lecturers' needs in delivering an eLearning course.

Table 8: Perceived ease of use of the eLearning technology: Learning the System

Perceived ease of use of the eLearning technology: Learning the System		Frequency	Percent
Using the eLearning system takes too much time to learn	Strongly Agree	1	2.1%
	Agree	6	12.5%
	Neither Agree nor Disagree	6	12.5%
	Disagree	23	47.9%
	Strongly Disagree	12	25.0%
	Total	**48**	**100%**

From the data in Table 8, the lecturers find the eLearning system set up by Maseno University easy to learn in the shortest time possible with 47.9% in agreement and another 25% in strong agreement. A few were not sure whether it takes too much time to learn using the system (12.5%) while another 14.6% thought that it takes too much time to learn using the eLearning system (12.5% agree, 2.1% strongly agree). The responses point to the fact that it is easy to learn using the eLearning system in the delivery of online courses.

Table 9: Perceived ease of use of the eLearning technology: Difficulty in learning the system

Perceived ease of use of the eLearning technology: Difficulty In learning the system		Frequency	Percent
The eLearning system is very complicated making it difficult to use it for teaching	Strongly Agree	0	0%
	Agree	2	4.2%
	Neither Agree nor Disagree	5	10.4%
	Disagree	27	56.3%
	Strongly Disagree	14	29.2%
	Total	**48**	**100%**

The data in Table 9 indicates that the lecturers find the system to be easy to work with, with only 4.3% indicating that the system is complicated. Another 56.3% and 29.2% respectively are of the opinion that it is not complicated to work with the eLearning system to teach their courses online. Only about 10.4% of the respondents were not decided on the complexity of using the eLearning system. According to Rogers (2003),the complexity of an innovation as perceived by the members of a social system, is negatively related to its rate of adoption. The lecturers were asked whether the eLearning system is complicated to learn.

Table 10: Perceived ease of use of the eLearning technology: Navigation and Interacting with Learners

Perceived ease of use of the eLearning technology: Navigation and Interacting with Learners		Frequency	Percent
The layout of the eLearning system makes it difficult to navigate and interact with the learners	Strongly Agree	0	0%
	Agree	4	8.3%
	Neither Agree nor Disagree	4	8.3%
	Disagree	28	58.3%
	Strongly Disagree	12	25%
	Total	**48**	**100%**

The layout of the eLearning system impacts on the navigation and interaction among the users on the system and the interaction with the content. The lecturers were asked their perceptions on the navigation on the eLearning system. About 8.3% of the lecturers indicated that the navigation is difficult and impedes interaction with learners while another 8.3% were undecided. About 83.3% were of the opinion that the layout of the eLearning system does not make it difficult for them to navigate the site and interact with the learners (58.3% disagree and 25% strongly disagree).

Table 11: Perceived ease of use of the eLearning technology: Effort required to be Proficient

Perceived ease of use of the eLearning technology: Effort required to be Proficient		Frequency	Percentage
The eLearning system requires a lot of effort to be proficient	Strongly Agree	2	4.2%
	Agree	15	31.3%
	Neither Agree nor Disagree	2	4.2%
	Disagree	19	39.6%
	Strongly Disagree	10	20.8%
	Total	**48**	**100%**

The individuals in a social system do not all adopt an innovation at the same time, rather, they adopt in an overtime sequence, so that individuals can be classified into adopter categories on the basis of when they begin using a new idea (Rogers, 2003).The adoption also depends on the ease of using the system, the lecturers were asked the amount whether it takes too much effort to be proficient in using the eLearning system do deliver online courses. Some of the lecturers were in strong agreement (4.2%) to the fact that it takes a lot

of effort to be proficient. According to table 11, 31.3% agree that it requires a lot of effort to be proficient. Another 39.6% and 20.8% were of the opinion that it does not take too much time to be proficient in using the eLearning system in teaching online.

Table 12: Perceived ease of use of the eLearning technology: Adopting it for teaching

Perceived ease of use of eLearning technology: Adopting it for teaching		Frequency	Percentage
The eLearning system is cumbersome to adopt for teaching my courses, the tools are not sufficient for the needs of the course	Strongly Agree	3	6.3%
	Agree	3	6.3%
	Neither Agree nor Disagree	5	10.4%
	Disagree	24	50%
	Strongly Disagree	13	27.1%
	Total	<u>48</u>	<u>100%</u>

The lecturers were further asked if it is cumbersome to adopt the eLearning system in teaching. According to the data in table 12, 50% and 27.1% respectively were of the strong opinion and opinion that the eLearning system is easy to integrate into their courses while another 10.4% neither agree nor disagree. About 12.6% of the respondents were of the opinion that it is cumbersome to adopt the eLearning system in teaching their courses.

Table 13: Perceived ease of use of the eLearning technology: Ease in Making Modifications

Perceived ease of use of eLearning technology: Ease in Making Modifications		Frequency	Percentage
The eLearning system is rigid and inflexible to modifications	Strongly Agree	1	2.1%
	Agree	2	4.2%
	Neither Agree nor Disagree	6	12.5%
	Disagree	24	50%
	Strongly Disagree	15	31.2%
	Total	**48**	**100%**

According to table 13, 50% and 31.2% agree and strongly agree respectively that the eLearning system can be modified, 12.5% neither agree nor disagree and another 4.2% and 2.1% respectively find the eLearning system rigid and inflexible to modifications.

Table 14: General Perceived ease of use of the eLearning technology

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%**

Generally, the lecturers find the eLearning system easy to work with as 31.3% and 50% strongly agree and agree respectively. Only 8.3% are undecided with another 8.3% in disagreement while another 2.1% in strong disagreement when it comes to the ease in using the eLearning system.

4.4.Institutional support factors in the adoption of eLearning

4.4.1.   School and departmental Support for eLearning

The support for eLearning by schools/faculties and departments contributes to lecturer adoption of eLearning. To assess the level of support accorded to lecturers and the eLearning processes at the schools/ faculties and departments, the lecturers were asked if eLearning is embedded in to the departmental teaching and the level of support the deans and Heads of departments are giving to eLearning.

Table 15: eLearning at the schools and departments: Embedded into departmental Teaching

eLearning at the schools and departments: Embedded into departmental Teaching		Percentage
ELearning is Embedded in department's Teaching	Strongly Agree	33.3%
	Agree	22.9%
	Neither Agree nor Disagree	18.8%
	Disagree	25.0%
	Total	**100%**

On the support for eLearning at the schools and department, 25% were in disagreement while 18.8% neither agree nor disagree on whether the schools and departments strongly support eLearning and have embedded it into the departmental teaching. Another 33.3% strongly agree and 22.9% agree that the schools and department have embedded eLearning into their teaching.

Table 16: eLearning at the schools and departments: Support from Deans and HODs

eLearning at the schools and departments: Support from Deans and HODs		Percentage
Head of Department/School and the Dean are supportive of eLearning	Strongly Agree	29.2%
	Agree	45.8%
	Neither Agree nor Disagree	16.7%
	Disagree	8.3%
	Total	**100%**

On the support for eLearning by deans and HODs' the respondents indicated that there is a strong support for eLearning with 29.2% stating that they strongly agree and 45.8% in agreement. Some were undecided (16.7%) on the support for eLearning by the Deans and HODs while another 8.3% were in disagreement and were of the opinion that HODs and Deans do not sufficiently support eLearning adoption.

4.4.2. Availability of Funding for eLearning

To establish the adequacy of funding for eLearning in Maseno University the lectures were asked their opinion regarding the availability of funding for eLearning implementation and maintainace.

Table 17: Adequate Funding for eLearning

Funding for eLearning		Percentage
Funding is available for Implementation and Maintenance of eLearning	Strongly Agree	41.7%
	Agree	6.3%
	Neither Agree nor Disagree	16.7%
	Disagree	35.4%
	Total	**100.0%**

On the funding for eLearning, the respondents had a divided opinion on the availability of funding for eLearning, 48% of the respondents were of the opinion that there is funding for eLearning, 16.7% were unsure of the availability of funding while 35.4% were of the opinion that there is no funding for eLearning. The challenges identified in funding for eLearning course development and delivery were delays in processing payments and the low rates paid to lecturers who teach online as compared to the rates paid to lecturers who teach face to face classes. The lecturers indicated that the delays in processing payments for online content development and facilitation and the low rates paid to lecturers who teach online had a negative impact on lecturer adoption of eLearning. The lecturers indicated the payment policy as one of the institutional factors that needs to be reviewed by the management of the university to facilitate eLearning adoption among lecturers.

As indicated in Table 17 above, 41.7% percent of the lecturers and 6.3% strongly agree and agree respectively that there is funding available for eLearning. Some of the lecturers are undecided (16.7%). About 35.4% disagree as they believe that the funding for eLearning implementation and maintenance is insufficient. One of the respondents, R3 indicated that whilst they are paid for developing and delivering online courses, the payments were delayed and very low thereby undermining the lecturers' morale in adopting eLearning. According to R16, poor staff motivation results from delayed payment to lecturers for course content development, facilitation and examination invigilation for eLearning students. R9 stated that the funds for course development was insufficient while R17 noted that the delays in disbursing funds for eLearning not only impact on lecturers' morale in eLearning adoption but also on the quality on online teaching.

4.4.3. Copyrights and Intellectual Property Rights on eLearning Content

Changing technology, changing laws, the ease of copying, and the growing access to a vast array of online materials have all changed how copyright affects academic work and consequently the content and complexity of institutional copyright policies (Marshall, 2008).The lecturers were asked whether the copyrights and intellectual property issues have been sufficiently resolved at the eCampus of Maseno University.
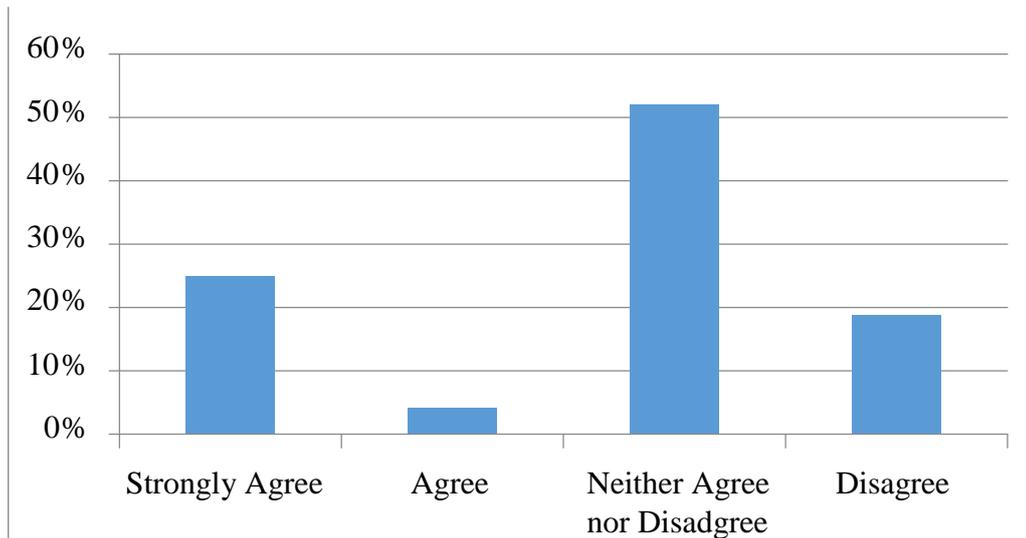
Figure 4: Copyrights and Intellectual property Rights on eLearning content

Figure 5: Copyrights and Intellectual Property

The information on the copyrights and intellectual property rights within the eCampus of Maseno University have not been adequately addressed with 52.1% of the respondents were undecided on whether the intellectual property rights issues have been sufficiently resolved. Another 18.8% of the respondents are of the opinion that issues of intellectual and property rights have not been resolved. R2 noted that Copy right issues are not well addressed while R30 indicated that policies on copy rights and publications need to be made compliant to eLearning lecturer needs. R27 indicated that the policies have not been widely circulated, the respondent suggested that the eLearning policy needs to be widely circulated among the lecturers so that they are informed on the copyrights and intellectual property issues at the eCampus.

> Copyright and intellectual property issues need to be revisited. For instance, who owns the intellectual property in a course that I develop for the campus? Is the right transferred to the university or is it retained by me or is it shared between the two parties? (R6)

4.4.4. E-Learning and promotion and tenure policies

In the eLearning Maturity Model, one of the key outcomes of the structured and integrated process of eLearning in the organization is the recognition of lecturers in creation of useful resources and this is formally recognized by the organization and included in policies and procedures for promotion and tenure (Marshall & Mitchell, 2002).To ascertain this in

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Maseno University eLearning, the respondents were asked to indicate if the promotion and tenure policies recognize teaching and development using eLearning system.
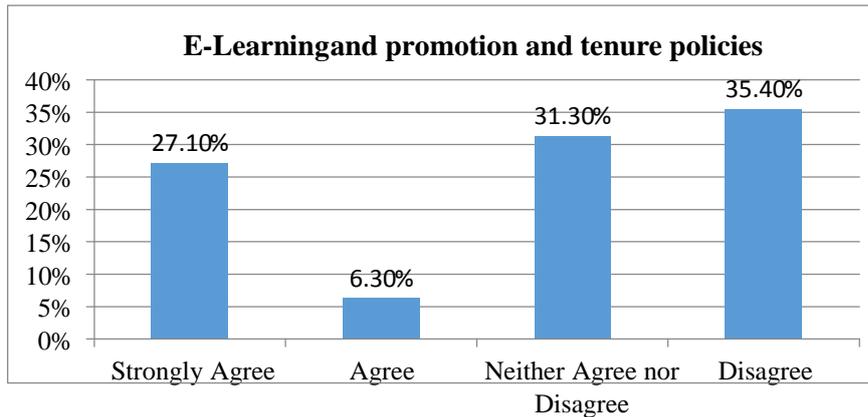
Figure 6: eLearning and promotion and tenure policies

Maseno University lecturer promotion and tenure policies have not been redefined to include the lecturer participation in developing and teaching online course. 31.3% of the respondents neither agree nor disagree and 35.4% are disagreement to the recognition of eLearning in promotion and tenure policies. Only 27.1% strongly agree while 6.3% agree with the fact that the institution recognizes the adoption of eLearning in promotion and tenure policies. R6 noted that lecturers need to be motivated so as to adopt the eLearning system, R46 also noted that if there were incentives, lecturers would review the existing courses regularly and actively interact with learners on the online courses.

4.4.5. Technology and Support Factors for eLearning

This subsection focused on the availability of training and support for eLearning and the availability of ICT infrastructure for eLearning.

a. Training and support for eLearning

The lecturers were asked about the access to technical support and educational software development to facilitate the adoption of eLearning. They were further asked whether the support and training is sufficient for them to engage in the use of eLearning.

Table 18: Training and support for eLearning: Access to technical Support

Training and support for eLearning: Access to technical Support		Percent
Staff are supported through access to technical support and educational software development expertise	Strongly Agree	31.3%
	Agree	39.6%
	Neither Agree nor disagree	16.7%
	Disagree	12.5%
	Total	**100%**

Data from Table 18 indicates that the lecturers are supported through access to technical support and educational software development with 31.3% of the respondents were in strong agreement while 39.6% were in agreement. There lecturers who were not sure about the support (16.7%) and some who felt the support is not sufficient (12.5%). R29 noted that the lecturers are supported through initial training by the eCampus team but more needs to be done since the training offered to staff was too short and in a very limited time frame which was not enough to enable them master the required skills. Lecturer skills influence his/her attitude towards the adoption of an eLearning system. Bonk (2000) indicates that lecturers should have different skills that enable them to play different roles in order to be able to adopt the use of technology in teaching. The lectures must understand the software, be able to design online courses using the software and be able to interact with learners on the online environment. The respondents R11, R14, R20, R25, R26 and R29 identified training as an important factor for them in the adoption of eLearning.

Some of the lecturers noted that the eLearning support team members are found at the Maseno University's Kisumu campus which limits access to eLearning technical support for lecturers operating in the other campuses of Maseno University. The technical support team for eLearning needs more personnel hired and posted to the departments so as to support the lecturers in adoption of eLearning.

Table 19: Training and support for eLearning: Sufficient Training for eLearning

Training and support for eLearning: Sufficient Training for eLearning		Percent
Is the training and Support accorded to you sufficient for you to participate in adoption of the institutional eLearning system?	Yes	66.7%
	No	33.3%
	Total	**100.0%**

The lecturers were trained before engaging in developing and delivering online courses. From the data, 66.7% of the lecturers find the training sufficient for them to use the eLearning system for teaching while 33.3% are dissatisfied with the training and support. R3 noted that the technical staff are always available in case the lecturers need help. R30 indicated that the lecturers receive technical support through capacity building but this is still inadequate. R35 noted that there is limited access to eLearning because the institution provides the connectivity and intermittent basic training but there are very few computers to use for eLearning course delivery. R3, R17, R22, R26, R47 and R48 noted that the training for content development needs to be scaled up so that they are trained in designing multimedia content so as to improve on the quality of the online courses. They also noted that the institution should provide them with the necessary software and hardware to make multimedia content development possible.

b. ICT Infrastructure for eLearning

An eLearning system is technology driven and therefore the ICT infrastructure is one of the core components in setting up and eLearning system. To establish the level efficiency and effectiveness of the ICT Infrastructure to support adoption of eLearning the lecturers were asked about various factors of ICT infrastructure that affect eLearning adoption. These factors were whether students and staff have access to appropriate hardware and software, the sufficiency of server hardware and software including security, network access and end-user devices such as computers, laptops and tablets. They were also asked about the server maintenance and backups, whether there are well defined approaches to updates and upgrades to the eLearning systems and the institutional policies and procedures on the efficient use of the eLearning systems (hardware and software).

Table 20: ICT Infrastructure for eLearning: Access to Hardware and Software

ICT Infrastructure for eLearning: Access to Hardware and Software		Percent
Students and staff have access to appropriate hardware and software	Strongly Agree	27.1%
	Agree	22.9%
	Neither Agree nor Disagree	31.3%
	Disagree	18.8%
	Total	**100.0%**

The lectures were asked if the staff and student have access to appropriate hardware and software for eLearning, 27.1% of the respondents strongly agree and 22.9% agree to the lecturers having access to the appropriate hardware and software. Some of the lectures (31.3%) are not sure if the hardware and software is sufficient while 18.8% of the lectures thought the hardware and software was not sufficient. The respondents were further asked to identify the aspects of the ICT infrastructure that need to improve to make it easier for them to participate in eLearning. R36 noted that there was inadequate internet access in other centers except at Kisumu campus. He suggested that provisions should be made for accessibility of internet in the various departments to avoid wasting time in traveling to the city campus to access internet when teaching online. R13, R18 and R24 noted that the institution should provide internet bundles to lecturers so that they can respond to learners even when not on campus.

R8 indicated that the institution should increase the number of technical support and ensure that there is adequate access to technical support staff in all the departments. He also noted that the departments do not have computers. The respondents also indicated that while there was sufficient ICT support and adequate internet access at the Kisumu Campus, there are no technical support staff in the other campus of the university. They also identified insufficient internet access and computer hardware in the departments as inhibiting factors in the adoption of eLearning.

Table 21: ICT Infrastructure for eLearning: Server Maintainace and Backups

ICT Infrastructure for eLearning: Server Maintainace and Backups		Percent
The institution Server maintenance and backups is well coordinated and organized	Strongly Agree	18.8%
	Agree	29.2%
	Neither Agree nor Disagree	35.4%
	Disagree	16.7%
	Total	**100.0%**

When asked about the approaches of the upgrades on the eLearning system, 35.4% of the respondents are unaware of the existence of these approaches while another 16.7% disagree. Some of the lecturers agree to the existence of server maintenance and backup of eLearning systems while another 18.8% strongly agree. R3 noted that it was difficult to ascertain the existence of hardware and software maintenance approaches since they are not directly involved in ICT. The respondent further noted that they rarely experience downtimes while working with the eLearning system.

Table 24: ICT Infrastructure for eLearning: Policies and Policies in using the eLearning systems

ICT Infrastructure for eLearning: Policies and Procedures in using the eLearning systems		
		Percent
There are Institutional policies and procedures on the efficient use of the eLearning systems (hardware and software)	Strongly Agree	16.7%
	Agree	12.5%
	Neither Agree nor Disagree	54.2%
	Disagree	16.7%
	Total	**100.0%**

According to the data in table 24, 54.2% of the respondents are unaware of the existence of policy and procedures on the effective and efficient use of the eLearning system's hardware and software and another 16.7% are in disagreement of the existence of policy and procedures on effective use of the eLearning system's hardware and software.

4.5. Challenges to the Adoption of eLearning at the eCampus of Maseno University

The lecturers were asked to explain the barriers to the adoption of eLearning in Maseno University. From the lecturer responses, the challenges identified were poor ICT infrastructure and inadequate support, challenges in remuneration for developing and teaching online courses, lack of ownership of eLearning by some departments and the university management and the lecturer workload.

4.5.1. Poor ICT Infrastructure and Inadequate Support

Some of the respondents identified poor infrastructure and inadequate support as inhibiting factors in the adoption of eLearning. Zhao & Frank (2003) found that the lack of access to internet from home was the main barrier to use technology in the teaching process. R12 and R13 noted that they are unable to interact sufficiently with the students since they are not facilitated with internet bundles so that they can teach the online courses even when at home. Some of the lecturers noted that they had to travel to the eCampus offices at the Maseno University's Kisumu Campus to access internet during online teaching. The university needed to invest in providing internet access to lecturers teaching online courses. This includes improving internet access in the departments and providing internet bundles to the individual lecturers.

The respondents stated that they needed to be facilitated with internet bundles so that they could interact with learners even while away from the eCampus. The lecturers noted that whilst the internet access at the eCampus was good enough, the internet access in the Siriba and Homa bay campuses was insufficient and therefore the staff were not able to log into the eLearning system from these campuses. R14 also noted that there are no eLearning staff stationed at the other campuses of Maseno University therefore the lecturers at the other campuses are not sufficiently supported. R18 identified the lack of sufficient eLearning support staff as an inhibiting factor to the adoption of eLearning while R35 noted that there is a need to recruit more eLearning staff to move eLearning to the next level in Maseno University.

The respondents asserted that:

> Motivate lecturers teaching at the eCampus through access to facilities including network where somebody can work even at his place at night. Pay lecturers at the eCampus adequately (R2).

> The infrastructure provided for does not strongly support the online delivery of teaching and appropriate participation i.e. there should be a studio room where lectures can be delivered to participants easily (R7). Internet access is a major hindrance (R5)

The respondents noted that the eCampus did not have a computer laboratory where lecturers could walk in and work from incase they did not have a laptop or an appropriate device to use for interacting online with the learners. The computers in the computer laboratory were either deployed for other purposes or were spoilt and never replaced (R4).

> Availability of a computer center, like it was at the beginning of eLearning, where staff can walk in and work, some do not have laptops. Finally, the training offered to staff is too short and in a very limited time frame. This is not enough to enable them master the required skills (R29).
> Computer laboratories are needed. Currently lecturers rely on their own hardware and software and foot all maintenance cost (R30).

R14 and R43 noted that the eCampus space was insufficient and suggested that there was a need to have as separate room for facilitation away from the eCampus staff as well as procure more computers for lecturers teaching at the eCampus. R16 and R43 noted that the eCampus needed to invest in videoconferencing facilities to make eLearning more efficient. According to R42, support should be readily available and structured. He further suggested that the university should procures up-to-date computers connected to internet. The respondent also identified the need to have suitable and appropriate office space for the campus.

> The eCampus should provide the Lecturers teaching at the eCampus and the eCampus learner support team with sufficient workspace, including computers and printers. The eCampus should also avail necessary ICT infrastructure (specifically videoconferencing) to departments to enable them to hold online proposal presentations and group discussions with students (R43).

4.5.2. Remuneration for Developing and Teaching Online Courses

The respondents also identified delays in payment of lecturer dues after teaching online and lack of sufficient budgetary allocation for eLearning as inhibiting factors in the adoption of eLearning. This also resulted in low morale among the lecturers teaching at the eCampus. R2 and R16 noted that the lack of payment for many years has resulted in lack of motivation in teaching online. R3 also stated that the pay is not consistent and hence undermines the

lecturer morale, the pay takes too much time to be processed hence teaching at the eCampus is perceived as "the other job". According to R21, the remuneration for online teaching is very low and the university administration should consider reviewing it so as to improve on eLearning adoption. R4 suggests that payments to lecturers teaching at the eCampus should be done immediately after the semester to boost the lecturers' morale in the adoption of eLearning.

4.5.3. Lack of Ownership of eLearning by some Departments and the University Management

When asked to describe the support accorded to them by the institution in the adoption of eLearning, R1 indicated that the support was very minimal. The respondents identified the access to internet while at the eCampus, technical support and working space for consultation with colleagues as the support items provided by the institution. Some of the respondents noted that some of the departments lacked ownership of the eLearning processes and the university management exhibited little support for eLearning. R8 observed that there is inconsistent arrangements on mobilizing lecturers to be inducted in eLearning while R7 noted that the management was not committed to develop required infrastructure for both the learner and the lecturers. R44 observed that some lecturers feel the money paid to lecturers for teaching online was not worth the effort it takes to facilitate an online course. R12 urged the institution's management to review the payment terms, he noted that whilst the online facilitation is demanding, the pay is too little and never comes in time. R37 noted the institution lacked support structures for eLearning adoption while R11 identified the lack of motivation from the university management to stakeholders, especially the support staff and lecturers as a major hindrance to eLearning adoption. According to R4, there is no motivation from the administration, this is especially with regards to payment.

4.5.4. Lecturer Workload

Work load was identified by some of the respondents as a major hindrance to eLearning adoption. According to R3, credible online assessments were demanding in terms of time compared to assessments in the face to face learning. R5 further noted that the minimal management support for eLearning has further complicated the ability of the staff to cope with the work load. R5 noted that there were very few support staff for eLearning and this has had a negative impact on eLearning adoption. According to R42, Work load balancing

between face to face teaching and other duties with eLearning limited constant contact with online students. The respondent added that this is compounded by the constant low internet links within the campus. R6 identified the challenge of creating time for online interaction with students as a barrier in the adoption of eLearning. He noted that:

> As a lecturer, I am more attuned to handle my face to face classes than online ones. I think this is due to my earlier orientation. I passed through a face to face class. I feel I should impress my students more during face to face than on eLearning (R6).

4.5.5. Problem Tree Analysis

Problem tree analysis is central to many forms of project planning and is well developed among development agencies. Problem Tree Analysis (sometime called situational analysis or just problem analysis) helps find solutions by mapping out the anatomy of the problem. It looks up- stream at causes and determinants and downstream at consequences and effects(The Oversees Development Institute (ODI), 2009). Based on an evaluation of the data, the challenges in the adoption of eLearning and the causes of these challenges were identified. The challenges identified were; Poor ICT infrastructure which was attributed to lack of computers and other necessary hardware at the eCampus and inadequate bandwidth at the schools and departments. The effects identified as a result of poor ICT infrastructure were low log in statistics recorded on the eLearning system and delayed feedback on student assignments and discussions.

The second challenge identified was inadequate support for eLearning by the institution which was attributed to inadequate training for eLearning adoption, inadequate eLearning support personnel and the fact that lecturers are not provided with money to purchase internet bundles to enable them teach online while off campus. The key effects identified as a result of inadequate support were few programmes developed for delivery through eLearning, low log in statistics recorded on the eLearning system and delays in providing learners with feedback. The third challenge identified was inadequate administrative support for eLearning. This was attributed to lack of clear policy on intellectual property rights, increased lecturer workload, delays in processing eLearning payments coupled with low payment rates for teaching online. The respondents also noted that promotion and tenure policies in the institution do not recognize adoption of eLearning among the lecturers. Based on the challenges identified and the effects of the challenges identified in eLearning adoption among lecturers, the problem tree below was developed:

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Dealys in lecturers providing learners with feedback within the online courses

Decreased in revenue generated from eLearning programmes

Decrese in student enrolment into eLearning programmes

Few new programmes developed for delivery through eLearning at the eCampus

Low lecturer log in statistics on the institutional eLearning system

Cause 1: Poor ICT infrustucture

Cause 2: Inadequate Support For eLearning adoption among the lecturers

Inadequate number of computer labs across the University campuses

Insufficient bandwidth within the University campuses

Inadequate training for eLearning

Inadequate eLearning support personnel

Lack of Ownership of eLearning by some Departments and the University Management

Challenges in Remuneration for Developing and Teaching Online Courses

Increased lecturer workload

Lecturers are not provided remuneration to purchaseInternet bundles

Vague policy on Intellectual property rights

Promotion and tenure policies do not consider participation in eLearning course development and facilitation in their promotion criteria

Delays in processing remuneration for eLearning content development and facilitation

Figure 7:A problem Tree of the challenges identified by lecturers on eLearning Adoption at the eCampus of Maseno University

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4.5.6. Lecturer adoption of eLearning Logical Framework Matrix

A Logical Framework Approach (LFA) is a management tool for effective planning and implementation of developmental projects. It provides clear, concise and systematic information about a project through a framework. The LFA helps in linking the various components of a project such as the goal, the objectives, the activities, the results and the indicators (European Integration Office, 2011). In this study the problem analysis identified the following challenges in the adoption of eLearning among the lecturers: poor ICT infrastructure, inadequate support for eLearning i.e. training and learning support staff and inadequate administrative support for eLearning i.e. vague policy on intellectual and property rights, promotion and tenure policies that do not recognize eLearning adoption, delays in processing eLearning payments and increased workload among the lecturers adopting eLearning.

The project identified the following effects of the low adoption of eLearning technology and pedagogy: Low log in statistics among the lecturers which results in delays in providing feedback to learner assignments and discussions. It was also noted that there are few programmes developed for delivery through eLearning as a result of the low adoption of eLearning among the lecturers and decreased student enrolment into the eLearning programmes which resulted in decreased revenue generated from eLearning programmes. The goal of an eLearning project, with regard to the lecturers is aimed at improving adoption of eLearning technology and pedagogy among the lecturers. The following objectives were identified in regards to lecturers' adoption of eLearning technology and pedagogy:

i.   Increased number of university programmes on the eLearning system
ii. Enhanced lecturer productivity and improved job performance through the use of the eLearning system
iii. Improved lecturer-learner interaction through the use of the eLearning system
iv. Increased avenues of providing dynamic learning content to learners through the eLearning system
v.   Improved learner participation and active involvement during learning through eLearning.

The indicators identified to measure the objectives include: (1) increased number of programmes offered through eLearning and (2) positive reviews from the lecturers and learners on the learning system. These reviews are gathered from the user support forums set up on the eLearning system and other support tools at the eCampus of Maseno University.

In an LFA, the outputs are the concrete visible results that contribute to the realization of the project's purpose. These are the changes or improvements that will be achieved by the project (European Integration Office, 2011). The outputs identified for an eLearning project that relate to lecturers were: Improved use of the eLearning system for delivery of programmes by lecturers, increased number of programmes offered through the eLearning system, improved active learner participation and involvement on the eLearning system and Increased revenue generated from online programmes. To achieve the outputs, the following activities were identified: set up computer labs across the university schools and departments, provide the lecturers with adequate bandwidth, develop policy on intellectual property rights for lecturers who develop content on the eLearning system, amend the policy on promotion and tenure for lecturers to include recognition of lecturers who have adopted eLearning, amend the remuneration for lecturers involved in eLearning adoption and hire enough eLearning support personnel.

Table 22: Lecturer adoption of eLearning Logical Framework Matrix

Project Description	Indicators	Means of Verification (M&E)	Assumptions
Goal: Lecturer Adoption of eLearning pedagogy and technology	• Number of lecturers developing online courses on the eLearning system • Number of lecturers teaching online courses on the eLearning system	• Statistics on the number of courses on the eLearning system • User log statistics from the eLearning system	
Purpose(Specific Objectives) • To increase the number of university programmes on the eLearning system • To enhance the lecturer's productivity and job performance through the eLearning	• Increased Number of programmes offered through eLearning • Positive reviews from the lecturers and learners on the eLearning system	• Periodic System statistics on number of programmes uploaded on the eLearning system • Evaluation of Lecturer feedback Reviews on the use of the eLearning system • Evaluation of Student feedback reviews on the use of the eLearning system • Reports from the Learner support team at the	• Monitoring tools for gathering user data from the eLearning system have been designed • Monitoring tools for gathering data on courses uploaded on the eLearning system have

		eLearning department	designed
system • To improve on lecturer and learner interaction through the eLearning system • To increase avenues of providing dynamic learning content to learners through the eLearning system • To improve learner participation and active involvement during learning through the eLearning system			
Output (1) Improved use of the eLearning system for delivery of programmes by lecturers	• Increased Lecturer log in statistics from the eLearning system	• Log in statistics for individual lecturers from the eLearning system	• Adequate ICT infrastructure • Adequate support personnel at the eLearning department • Policy on intellectual property rights, remuneration and promotion and tenure amended to support eLearning adoption
• Output (2) Increased number of programmes offered through the eLearning system	• Number of courses developed on the eLearning system	• Statistics on the number of courses on the eLearning system	• Increased number of lecturers developing courses on the eLearning system

• **Output (3)** Improved active learner participation and involvement	• Positive feedback reviews from students taking up programmes through eLearning	• Data on student enrolment for programmes offered through the eLearning system	• Increased lecturer log on in statistics on the eLearning course
Output (4) Increased revenue genera from online programmes	• Increased student enrolment for eLearning programmes	• Revenue reports on programmes offered through eLearning from the student finance department	• Increased number of programmes on the eLearning system • Increased Number of students taking up the programmes through the eLearning
Activity (1) Set up computer labs acr the university schools a departments	**Financial**: Financial allocation for purchase of adequat equipment across depart in the university	• ICT status Report on the ICT equipment in the schools and departments in the university	• ICT equipment needs assessment across departments in the university
Activity (2) Adequate bandwidth acr schools and departments	• **Financial:** Financial allocation for adequate bandwidth	• ICT report on the available bandwidth and the distribution of bandwidth across departments in the university. • ICT report on the usage of bandwidth across the departments in the University	• Needs assessment on bandwidth requirements for the University departments • Availability of an Internet service provider. • Purchase of ICT equipment and set up of the networking infrastructure across the departments and schools
Activity (3) • Develop policy on Intellectual property Rights for lecturers who develop content on the eLearning system • Amend the policy on promotion and tenure for lecturers	**Human Resource**: Constitute a team to develop or amend existing policy on intellectual property rights, promotion and tenure for lecturers and remuneration to cater for Lectures involved in eLearning adoption.	• University Policy documents	• Assessment of existing university policy to identify the areas that need to be amended so as to cater for eLearning adoption

to include recognition of participation in eLearning • Amend the policy on remuneration for lecturers involved in eLearning adoption		57	
Activity (4) Hire eLearning support personnel to support lecturers in: • developing content for eLearning • Support lecturers in teaching through the eLearning system • Provide learner support to the learners taking up eLearning programmes	**Human Resource**: Hire qualified personnel to support the lecturers on the adoption of the eLearning system	Human Resource Reports on Human resource. • Report on the identified need for personnel for eLearning • Report on advertisements for the skills • Report on short listing and interviews • Report on the personnel hired and attached to the eLearning department	• Needs assessment of personnel in the eLearning Department • Budgetary allocation for the recruitment process

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CHAPTER FIVE: DISCUSSION

5.1. Overview

Chapter Five presents the problem statement, a summary of the findings, theoretical and practical implications, study limitations, recommendations for future research, and a conclusion. The purpose of this study was to determine the adoption of eLearning pedagogy and technology among lecturers at the eCampus of Maseno University. In this chapter of the study, the main conclusions and recommendations for eLearning adoption in Maseno University is discussed and a logical framework matrix proposed.

5.2. Summary of Findings

To evaluate the effect of lecturer personal factors in the adoption of eLearning at the eCampus of Maseno University, lecturer attributes of Self-efficacy, Perceived Usefulness and Perceived ease of using eLearning technology and pedagogy were used in this study to evaluate the lecturers' individual attributes with regard to eLearning adoption. Self-efficacy refer to the ability of the lecturers with regard to using various eLearning tools for teaching. Perceived ease of use is defined as the extent to which people believe that using certain system would be effortless. Venkatesh et al. (2003) demonstrate that perceived ease of use is a function of users' evaluation of the effort involved in the process of learning. The lecturers were confident in their skills in using the eLearning system, as indicate in table 3, 18.8% indicated that their skills are excellent while another 64% indicated that their skills in using the eLearning system is good. It is believed that perceived ease-of-use helps in reducing the uncertainty of innovations, leading individuals to adopt the technology in question consequently, perceived ease of use in eLearning may influence lecturer's intention to adopt eLearning system. The study noted that the lectures were of the opinion that the eLearning system does not require a lot of time to be proficient and is not complicated and can easily be adopted to teach their courses online. The lecturers also find the system easy to navigate and useful in interacting with learners. Shee & Wang (2008) argue that eLearning systems are distinct from other information systems to some extent. They argued 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 i.e. both educators and students. The interaction between learners and lecturers is largely based on their perceived usefulness of eLearning. A lecturer

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with a positive perception of eLearning is likely to use it to create a rich learning environment for the learners to interact with the content and each other. The research noted that 95.8% of the lecturers are of the opinion that eLearning is useful. The lecturers were of the opinion that eLearning is useful in teaching by providing active learner participation opportunities, a variety of approaches of disseminating learning materials and providing dynamic content. The study also found that the lecturers were of the opinion that eLearning is useful in providing dynamic feedback and score reporting approaches to learners and enhances their productivity. About 18.8% of the lecturers were undecided on whether eLearning is useful in enhancing productivity and improving performance. The research also noted that 72.5% of the lecturers perceive the system to be easy to learn and another 85.5% find the system can be easily adopted for teaching. 60.4% of the respondents indicated that the eLearning system does not require a lot of effort to be proficient. The data indicates that the lecturers are confident in their ability to adopt the eLearning system and therefore score highly in the self –efficacy.

To examine the effect of institutional support factors on the adoption of eLearning, the study evaluated the institutional support given to the lectures in the adoption of eLearning. Facilitating conditions have been found to have a significant positive impact on ease of use, supporting the claims in prior research (Rockwell, Schauer, Fritz, & Marx, 1999). This validates the importance of facilitating conditions in understanding lecturer adoption of eLearning technologies. Lecturers who have higher levels of trust in supportiveness of institution, and having a higher level of self-efficacy, are more likely to find the eLearning technology easy to use. Lecturers also expect reliable infrastructure and technology and are also are interested in seminars and workshops that focus on skill development, the use of new technologies, designing courses, teaching strategies, and on the educational merit of distance education techniques e.g., hands-on training, coaching, access to technology, tutorials, guided practices, and pilot tests (Betts, 1998). Maseno University needs to invest in providing internet access to lecturers teaching online courses, this includes improving internet access in the departments and providing internet bundles to the individual lecturers so that they can interact with learner anywhere anytime. They lecturers also noted that the eCampus space is insufficient and further suggested that the institution needs to have a separate room for facilitation away from the eCampus staff as well as procure more computers for lecturers teaching at the eCampus since the eCampus lab does not have any computer. Faculty satisfaction is generally high when the institution values online teaching

and has policies in place that support the faculty (Bolliger & Wasilik, 2009). The lecturers acknowledged that they are given some training when they are inducted into eLearning but the training is too short and not sufficient for them to master the required skills to be proficient in eLearning. Elgort (2005) suggested that eLearning should be viewed from the plane of technology and that of pedagogy. The lecturers' training would build their skills in the two areas so that they can play their roles effectively. The study findings indicate that the lecturers engaged in online course design and facilitation are trained. The respondents indicated that the training provided was sufficient to get them involved in developing and delivering an online courses. Some of them indicated that whilst the training was sufficient to get them started, there is a need for more training. Elgort (2005) indicated that making it trivial for a lecturer to upload course content of the LMS and interact with learners online will result in a surface approach in adopting eLearning. Rogers (2003) identifies re-invention as a vital part in adoption of an innovation. This is the point at which the adopter customizes an innovation to meet his/her unique situation. In adopting eLearning, continuous training will enable the lecturers re-engineer the eLearning system and adopt it to effectively deliver their courses online. The lecturers in the study identified the lack of technical support at the schools and departments as an inhibiting factor to adoption of eLearning.

The study also sought to identify the challenges experienced by the lecturers in the adoption of eLearning. Increased Lecturer workload is one of the challenges in the adoption of eLearning identified by the lecturers at the eCampus. The lecturers perceive the workload to be higher compared to that of traditional courses. At least initially, lecturers are expected to spend more time on online course development and online teaching. Lecturers are more satisfied when the institution provides release time for course development and recognizes that online teaching is time consuming (Bolliger & Wasilik, 2009).The lecturers identified workload as a hindrance to eLearning adoption, the lecturers are allocated courses in all the institution's campuses. They also noted that whilst the student population across the Institution's campuses is increasing, the institution is not hiring more personnel to take care of the deficit in personnel at the schools and departments. Some lecturers admitted to having challenges in balancing between the online learners and the face-to-face teaching. Online teaching is a complex task that requires commitment from faculty and can be time consuming and demanding. As online teaching has become an expectation and an element of instructors' regular teaching loads at many colleges and universities, the administration should be concerned about faculty burnout (Bolliger & Wasilik, 2009).

Adequate compensation and recognition is a major concern among faculty teaching online(Beverly., 2001). Beverly (2001) further notes that low-cost incentives such as public recognition, notes of appreciation, or special parking privileges, are also effective demonstrations of support for lecturer involved in eLearning course design and delivery. About 51.4% of the lecturers noted that the university policies do not recognize promotion and tenure based on participation in designing an online course. The lecturers indicated that the whilst university compensates them for designing online courses and teaching online courses, the delays in payment of lecturer dues after designing and teaching online and lack of budgetary allocation for eLearning were major inhibiting factors in the adoption of eLearning. This delay has resulted in low adoption of eLearning by the lecturers. Policies that Clarify Intellectual Property Issues impact on lecturer adoption of eLearning (Durette, 2000).The lectures identified the copyrights and intellectual property issues as one of the policy areas that have not been sufficiently handled by the institution's policies on eLearning. Over 50% of the respondents were unaware of the policies on intellectual property rights on content developed on the eLearning system.

5.3.Conclusions

The study established that the lecturers were confident in their skills in using the eLearning system and find it easy to use in adopting it to teach their courses online. A lecturer plays an important role in the effectiveness of online delivery of courses. It is not the technology but the instructional implementation of the technology that determines the effects of learning. The lecturer's personal attributes with regard to using technology impact on the effective instructional implementation of technology. Webster & Hackley (1997) suggested that three instructor characteristics that influence learning outcomes in an online environment, these are; the instructor's attitude towards technology, his/her teaching style and the level of control of technology. The lecturers noted that whist they are trained for eLearning, the trainings were only sufficient for them to use the eLearning system but more needs to be done to get them to the point of designing quality online courses. Improved proficiencies in eLearning technology and pedagogy will improve 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.

On the challenges in adopting eLearning, the lecturers identified poor ICT infrastructure, challenges in eLearning payments, lack of ownership of eLearning by some departments and university management and lecturer workload are some of the challenges they were experiencing in the adoption of eLearning. Maseno University administrators need to develop comprehensive supporting systems and review the policies on eLearning to tackle the challenges identified by the lecturers in the adoption of eLearning. Other challenges identified were in-adequate and untimely compensation for lecturers designing and teaching online courses was also identified as a factor demoralizing lecturers from adopting eLearning. The administration of Maseno University should work out processes and policies that ensure the lecturers are remunerated adequately and in time for adopting eLearning in teaching their courses. The remuneration policy for eLearning should include diverse views from stakeholders in the eLearning processes.

ICT infrastructure, more so the provision of internet bundles so that the lecturers can effectively interact with learners taking up online courses through the eCampus was identified as a major hindrance to the adoption of eLearning. The Maseno university administrators should provide the lecturers with adequate internet access while on campus and facilitate them so that they can buy internet bundles for teaching online while off campus. Some of the lecturers noted that the eLearning Support staff were not enough and they are stationed at the eCampus office located at the Kisumu Campus of Maseno University. This requires that the lecturers designing and facilitating online courses and require support have to travel to the eCampus office to get access to the support staff. Adequate support for eLearning adoption includes hiring enough personnel and posting the personnel to the various campuses of Maseno University so that the lecturers can get the support they need.

5.4. Recommendations for further Studies

The study focused on the adoption of eLearning technology and pedagogy by lecturers within Maseno University.

1. Further research on learner adoption of eLearning will give a clear perspective on the eLearning adoption within Maseno University.

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Appendix A: Lecturer Feedback Questionnaire

Dear Respondent,

I am a student at Maseno University pursuing a Master of Arts in Monitoring and Evaluation degree. I am carrying out research that aims at evaluating adoption of eLearning among lecturers in Maseno University. The findings of this study will inform University Managers and policy makers on strategies to improve on lecturer adoption of eLearning in Maseno University. You are kindly requested to provide information to be used in the research. Please note that the information you provide will be treated with utmost confidentiality and will only be used for the purpose of the study. Do not write your name or any other details that may in any way reveal your identity. I will be willing to share the results of the Study.

Barbara Khavugwi Makhaya

Section One: Lecturer Attributes
Part A: Lecturer Demographic Data
1. Please indicate your gender:
   ☐ Male   ☐ female
2. Please indicate your age range.
   ☐ 25-35   ☐ 36-49   ☐ 50-62
   ☐ 63-70   ☐ 71 – above
3. Professional rank:
   ☐ Professor   ☐ Associate Professor   ☐ Senior Lecturer
   ☐ Lecturer   ☐ Assistant Lecturer   ☐ Tutorial Fellow
   ☐ Instructor   ☐ Other_____

4. School/Faculty

☐ School of Business and Economics	☐ School of Mathematics, Applied Statistics and Actuarial Science	☐ School of Planning and Architecture
☐ School of Arts and Social Sciences	☐ School of Education	☐ School of Public Health and Community Development

5. How many years of University teaching experience do you have?

	0-5		6-10		11-15
☐	0-5	☐	6-10	☐	11-15
☐	16-20	☐	21-25	☐	26-20
☐	31-35	☐	35-40	☐	Above 40

Part B: Perceived Usefulness of eLearning

1. Please tick (√) the response option that best describes how you perceive the usefulness of eLearning in teaching within Maseno University **Response Key:**

SA= Strongly Agree, A= Agree, U= neither Agree nor Disagree, D= Disagree, SD= Strongly Disagree

No.		SA	A	U	D	SD
1.	eLearning improves learner participation and active involvement during learning					
2.	eLearning improves on teaching by providing avenues for disseminating learning materials to learners					
3.	eLearning improves on teaching by providing avenues for providing dynamic learning content to learners					
4.	eLearning improves on teaching by providing avenues for dynamic feedback and score reporting to learners					
5.	eLearning enhances my productivity by improving on my job performance i.e. I accomplish more work in minimal time					
6.	Overall, I find eLearning useful					

2. Describe the primary barriers to adoption of eLearning in Maseno University

Part C: Perceived Ease of Use of eLearning

1. Is the eLearning system is difficult to learn?

    ☐ Yes   ☐ No

2. How would you rate your technical abilities in teaching with the institution's eLearning eLearning System

□Excellent   □Good   □Average   □Fair   □poor

3. Please tick (√) the response option that best describes how you perceive ease in using the eLearning system set up by Maseno University **Response Key:**

SA= Strongly Agree, A= Agree, U= neither Agree nor Disagree, D= Disagree, SD= Strongly Disagree

No.		SA	A	U	D	SD
1.	Using the eLearning system takes too much time to learn					
2.	The eLearning system is very complicated making it difficult to use if for teaching					
3.	The layout of the eLearning system makes it difficult to navigate and interact with the learners					
4.	The eLearning system requires a lot of effort to be proficient					
5.	The eLearning system is cumbersome to adopt for teaching my courses, the tools are not sufficient for the needs of the course					
6.	The eLearning system is rigid and inflexible to modifications					
7.	I generally find the institutional eLearning system easy to work with					

4.Make suggestions on what should be done to make it easier to work with the eLearning system?

Part D: Self-Efficacy in the use of eLearning

1.Please tick (√) the response option that best describes your efficacy with regards to using the institutional eLearning system **Response Key:**

1 to 10(1 = not at all confident, 5= moderately confident and 10= very confident)

No.		1	2	3	4	5	6	7	8	9	10

1.	I use the eLearning system because there is someone around me to tell me what to do										
2.	I use the eLearning system because I had used an eLearning system before										
3.	I use the eLearning system because I have an eLearning reference manual to guide me on what to do										
4.	I use the eLearning system because there is someone else in the department or school using it										
5.	I use the eLearning system because there is someone to show me how to go about using the eLearning system										

2.Please tick (√) the response option that best describes your confidence level in the following aspects in the use of eLearning.

Response Key:

1 to 10(1 = not at all confident, 5= moderately confident and 10= very confident)

No.	Confidence in eLearning	1	2	3	4	5	6	7	8	9	10
1.	I feel apprehensive about using eLearning										
2.	I have difficulty understanding technical aspects of using the eLearning system										
3.	Learning to adopt the eLearning system for my courses is like learning a new skill which I am not willing to learn										
4.	The more I use the eLearning system the better I become										
5.	The more I use the eLearning system the more I get new and innovative Ideas to teach my courses using the system										

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Section Two: Institutional Factors Part A: Institutional policies that Support eLearning

1.Please tick (√) the response option that best describes the institutional support for the following aspects of eLearning **Response Key:**

SA= Strongly Agree, A= Agree, U= neither Agree nor Disagree, D= Disagree, SD= Strongly

No.		SA	A	U	D	SD
1.	eLearning is embedded in the department's normal teaching					
2.	Funding is available for eLearning					
3.	Head of Department/School and the Dean are supportive of eLearning					
4.	Copyright and intellectual property issues have been resolved					
5.	Promotion and tenure policies recognise teaching developments using eLearning systems					

2. Are the institutional policies on eLearning favorable for you to participate in its adoption of the institutional eLearning system?

☐ Yes   ☐ No

3. Describe aspects of the institutional policies on eLearning that need to be looked into to make it favorable for you to participate in eLearning.

Part B: Training and Support of eLearning

1.Please tick (√) the response option that best describes the institutional support for the following aspects of eLearning training and support **Response Key:**

SA= Strongly Agree, A= Agree, U= neither Agree nor Disagree, D= Disagree, SD= Strongly

No.		SA	A	U	D	SD
	staff are supported through access to technical support and educational software development expertise					
	students and staff have access to appropriate hardware and software					

2. Describe the support accorded to you for eLearning by the institution.

3. Is the training and Support accorded to you sufficient for you to participate in adoption of eLearning?

☐ Yes   ☐ No

4. Do you find it difficult to access support for eLearning?

☐ Yes   ☐ No

5. What would you recommend to improve on the access to support on eLearning

Section Three: Technology Factors

Part A: ICT Infrastructure; Hardware, Software and LMS

1. Is the available ICT infrastructure sufficient for you to participate in adoption eLearning?

☐ Yes   ☐ No

2. Please tick (√) the response option that best describes the ICT infrastructure i.e. hardware and software

Response Key:

SA= Strongly Agree, A= Agree, U= neither Agree nor Disagree, D= Disagree, SD= Strongly

No.		SA	A	U	D	SD
	The institution has sufficient Server hardware and software including security, network access and end-user devices					
	The institution Server maintenance and backups is well coordinated and organized					
	The institution has well defined approaches to updates and upgrades to the eLearning systems					
	There are Institutional policies and procedures on the efficient use of the eLearning systems (hardware and software)					

3.Describe aspects of the ICT infrastructure that need to be improved so as to facilitate the adoption of eLearning within Maseno University